



Mentoring Clinical & Translational Science Researchers: A Training Guide



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Curriculum Overview

CTSA Research Mentor Training Seminar
Curriculum Overview
Content, Format, Implementation and Assessment

Content

The content of each session in this curriculum is designed to address the key concerns and challenges identified by research mentors. The topics include:

- Maintaining Effective Communication
- Establishing Expectations
- Assessing Understanding
- Addressing Diversity
- Fostering Independence
- Promoting Professional Development

In addition to general content about research mentoring, all of the case studies and some of the discussion questions draw specific attention to issues related to mentoring scholars working in clinical and translation science areas.

Much of the content of this seminar was adapted from *Entering Mentoring: A Seminar to Train a New Generation of Scientists*; created by Jo Handelsman, Christine Pfund, Sarah Miller Lauffer, and Christine Pribbenow. A PDF version of the book is available at www.hhmi.org/grants/pdf/labmanagement/entering_mentoring.pdf.

Format

The structure of this research mentor-training seminar is based on the experience of faculty and staff who implemented the mentor-training seminar at UW-Madison. Seminar facilitators have learned that the best results come from keeping an open discussion format to allow for participants' diverse experiences to be integrated into the seminar content and process. Simply asking the mentors a few guiding questions typically leads to vigorous discussion. The case studies and reading materials can provide a tangible starting point, and the mentors will often move quickly from the hypothetical examples to their own experiences with trainees and students. The seminar is most effective with mentors who are currently working with scholars. The short duration of such a seminar intensifies the urgency of dealing successfully with challenges that arise. Likewise, frequent contact with trainees provides mentors opportunities to immediately implement ideas generated by the discussions.

Implementation: Facilitating the Seminar

Facilitating the Research Mentor Training Seminar is not the same as teaching it. Your role as facilitator is to enable the seminar participants to take ownership of their own learning by helping them engage in self-reflection and shared discovery and learning. Your role in the group is to help others to work through their thoughts and ideas; it is not your role to be the expert on mentoring. As a facilitator you may also walk a fine line between facilitator and participant—but remember that group members will look to you for guidance and structure. Your own experiences and ideas should enhance the discussion, but should not dominate and become the focus of the discussion.

Being an effective facilitator is the key to helping the research mentors in the seminar meet the learning objectives and become more successful mentors. To assist you in your own facilitation abilities, we have included a brief facilitator guide in the next section that contains additional information, tips, and tools for facilitation.

Implementation: Using this Guidebook to Facilitate Weekly Sessions

You should prepare for each session by copying the readings, descriptions of session themes and learning objectives, case studies, and any worksheets for each mentor in the group. Alternatively, all of the materials can be copied at the start of the sessions and distributed at the first meeting or posted on a seminar website. The specific themes and objectives for each session are included at the beginning of the seminar materials. You might consider asking participants to review the themes and learning objectives at the beginning of each session, or review the objectives and themes after a few weeks to check their progress.

Guiding discussion questions and notes for group facilitators are also included in each session plan. Time estimates for activities and facilitated discussions for each of the sessions are indicated in parentheses and can be adjusted at your discretion. The facilitator notes provide directive signposts (e.g. ACTIVITY, TELL, ASK, NOTE, DISCUSS) to support the facilitation process. ACTIVITY indicates that participants are to engage in some process on their own, in small groups, or as a large group. TELL means that the information that follows needs to be shared with the whole group. ASK means a specific question or questions need to be put to the group. NOTE means that some particular issue or content needs to be emphasized. DISCUSS means that a broader discussion, usually supported by guiding questions, needs to occur. Sometimes more discussion questions are provided than can reasonably be addressed in the time allotted for the activity or group discussion, but the questions suggested for the case studies in this seminar are based on the experiences of past seminar facilitators.

Assessment of the Weekly Session

Following each mentor-training session, you will be asked to complete a short survey to capture information on what your session included and its effectiveness, from the perspective of a facilitator. Please share with us the activities you used and any feedback about the session so we can align outcomes with actual implementation data, as well as improve future training.

Curriculum Outline: Competencies and Learning Objectives

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 varied backgrounds, disciplines, 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)

Establishing Expectations

Learning Objectives for Expectations:

Mentors will have the knowledge and skill to:

1. 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 impact 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. Assess their mentee's understanding
2. Identify various reasons for a lack of understanding
3. Use diverse strategies to enhance mentee understanding across diverse disciplinary perspectives

Addressing Diversity

Learning Objectives for Diversity:

Mentors will have the knowledge and skill to:

1. Improve understanding of individual differences and cultures, and how they influence interactions
2. Recognize the impact that conscious and unconscious assumptions, preconceptions, biases, and prejudices bring to the mentor-mentee relationship and how to deal with them
3. Identify concrete strategies for learning about, recognizing, and addressing issues of diversity and engage in conversations about diversity with their mentee

Fostering Independence

Learning Objectives for Independence:

Mentors will have the knowledge and skill 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's confidence, establish trust, and foster independence
3. Identify the benefits and challenges of fostering independence

Promoting Professional Development

Learning Objectives for Professional Development:

Mentors will have the knowledge and skill to:

1. Identify the roles mentors play in the overall professional development of their mentees
2. Develop a strategy for guiding professional development using some form of written format
3. Initiate and sustain periodic conversations with mentees on professional goals and career development objectives and strategies
4. Recognize and 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, work-family balance, etc.

Example CTSA Research Mentor Training Seminar Schedule

Each session meets for 2 hours.

Sessions	Topics
Session 1	Introductions Maintaining Effective Communication
Session 2	Aligning Expectations Assessing Understanding
Session 3	Addressing Diversity Fostering Independence
Session 4	Promoting Professional Development Articulating A Mentoring Philosophy and Plan

Introduction to Facilitation

Roles of Facilitators

The following materials were designed to assist you in your role as facilitator of the research mentor-training seminar. Specifically, these materials will help you guide the mentors during training sessions as they work through their thoughts and ideas and engage in self-reflection and shared discovery. Importantly, your role in the seminar is not to teach others how to mentor, but rather to guide them. As a facilitator, your role is to:

- **Make it safe:** Take time to tell the group members that the seminar is a safe place to be honest about their ideas and feelings. Everyone's ideas are worth hearing.
- **Keep it constructive and positive:** Remind members of your group to keep things positive and constructive. Ask the group how they want to deal with negativity and pointless venting. Remind them the seminar is about working together to learn, not complaining about the current situation or discounting the ideas of others in the interest of a personal agenda.
- **Make the discussion functional:** At the start of each session, explain the goals of the session to the group. Try to keep the group on task without rushing them. If the conversation begins to move beyond the main topic, bring the discussion back to the main theme of the session.
- **Give members of the group functional roles and responsibilities:** Assign or ask for volunteers to take notes, keep track of time, and report to the larger group at the end of the session. Functional roles help keep participants engaged.
- **Give all participants a voice:** In a group, there are likely to be issues of intimidation and power dynamics that can play out in ways that allow certain members of the group to dominate while others remain silent. At the start of the conversation, mention that the group is mixed by design, and point out that a diversity of perspectives is an essential part of the process. Remind group members to respect all levels of experience. It's important that everyone's voice is heard.

General Notes on Facilitating a Group

Each group will take on its own feel and personality based on the people in the group, the facilitator's approach, and a host of external factors beyond your control. It helps if you adopt a no fault clause stating that if a group is not working well, it is through no fault of a single individual, but rather a set of circumstances. It's hard to not take it personally if a group doesn't function well, but remember, you are just one part of the whole dynamic.

It also helps if you are able to release your expectations for how a meeting or group should go, and instead focus on core aspects of the process. Your role as facilitator is to be intentional and explicit, while remaining flexible and not overly prescriptive. You can only do so much as a facilitator – to a large extent it is up to the participants to take ownership of their own learning, especially since this seminar is designed for adults who already have advanced degrees. Individual ownership, self-reflection, and shared discovery and learning will promote the deepest learning for this particular type of program.

As challenges and normal group dynamics surface, the group will look to you to fix problems. But part of your role is to help others see that they are also responsible for fixing problems. You can help them realize this by holding on tightly to the following core ideas of group dynamics (and periodically reminding the team of them):

- Respectful interactions (listening, non-judging, non-dominating, genuine questioning, etc.) are essential.
- Relevant tangents that tie back to a central topic, issue, or question are fine, but don't let them derail the central purpose of the discussion.
- You need to keep moving ahead, but there is no need to push the schedule if the group needs time to reflect or slow down (if you slow down or skip something, you can anticipate participants will feel they are behind or missing out, so reassure them this is normal and the initial schedule is only a guide and there will be time to revisit topics if needed).
- If you try something and it doesn't go well, don't abandon it right away. Step back and think about what went wrong, talk to the group, learn from it, and try it again. It often takes a time or two to get the group warmed up to something new.
- Discomfort and silence are ok, but with a clearly stated context and purpose. Silence may seem like a waste of time in meetings, but it gives people a chance to think, digest, and reflect. Allow for a few silent breaks before, during, and at the end of each meeting.
- Make it easy, rewarding, and fun for people to participate, and encourage others to do the same for each other. Simple things like friendly reminders of meetings, providing coffee, tea, or snacks, and follow-up calls to check in with someone if they miss a meeting all send the message that you care and want to make it easy for individuals to participate.

Adapted from the Creating a Collaborative Learning Guidebook, Center for the Integration of Research, Teaching, and Learning <http://www.cirtl.net/CCLGuidebook.pdf>

Group Dynamics: Suggestions for How to Handle Challenges

What do I do when no one talks?

- Have everyone write an idea or answer to a question on a piece of paper and toss it in the middle of the table. Each participant then draws a piece of paper from the center of the table (excluding their own) and reads it out loud. All ideas are read out loud before any open discussion begins.
- Have participants discuss a topic in pairs for three to five minutes before opening the discussion to the larger group.

What do I do when one person is dominating the conversation?

- Use a talking stone to guide the discussion. Participants may only talk when holding the stone. Each person in the group is given a chance to speak before anyone else can have a second turn with the stone. Participants may pass if they choose not to talk. Importantly, each person holding the stone should share their own ideas and resist responding to someone else's ideas. Generally once everyone has a chance to speak, the group can move into open discussion without the stone.
- Use the Constructive/ Destructive Group Behaviors Exercise. Each participant chooses their most constructive and destructive group behavior from a list (see following page). Each person writes the two behaviors on the back of their table tent. Then, participants share their choice with the larger group and explain why they chose those behaviors.

What do I do when the group members direct all their questions and comments to me, instead of their fellow group members?

- Each time a group member talks to you, move your eye contact to someone else in the group to help the speaker direct their attention elsewhere.
- Ask the participants for help in resolving one of your mentoring challenges. For example, ask them for advice on how to deal with an apathetic mentee. This helps the group members stop looking to you for the right answers and redirects the problem-solving and discussion focus to the entire group.

What do I do when a certain person never talks?

- Have a different participant initiate each day's discussion so that different people have the chance to speak first during the week.
- Assign participants in the group different roles in a scenario or case study and ask them to consider the case from a certain perspective. Ask the participants to discuss the case in the larger group from the various perspectives. For example, some participants could consider the perspective of the mentee, while others consider the perspective of the mentor.
- Try smaller group discussions (two to three participants per group) as individuals may feel more comfortable talking in smaller groups or without certain other individuals present.

What do I do when the group gets off topic?

- Have everyone write the ideas they want to share on a given topic for three minutes. This short writing time will help participants collect their ideas and decide what thoughts they would most like to share with the group so they can focus on that point.
- Ask someone to take notes and recap the discussion at the half-way and end points of the session to keep the conversation focused.

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

Introductory Session

Introductory Session

Introduction:

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

Learning Objectives:

Mentors will:

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

Overview of Activities for the Introductory Session: Please note core activities for this introductory session should be chosen by individual facilitators from either the list of options provided or from their own experience.

	Learning Objectives	Core Activities will be chosen by individual facilitators Example activities are included below and will be discussed at the facilitator training session.
1	Learn about other mentors in the group	
2	Reflect on group dynamics and ways to make the seminar group functional	
3	Establish ground rules for participation in the seminar	

**Recommended Session for
Introductions
(30 minutes)**

❖ **Materials Needed for the Session:**

- Table tents and markers
- Chalkboard, whiteboard, or flip chart
- Additional materials may be needed based on introductory activities selected
- Handouts:
 - List any handouts needed for your chosen introductory activities such as copies of the Constructive/ Destructive Behaviors list (see pg. 12)

❖ **Objective 1: Learn about other mentors in the group (10 min)**

- **ACTIVITY:** Introductory Activity (10 min)
 - Choose an introductory activity from the list included on page 14 or choose one from your own experience.
 - Ask participants to engage in the activity as a way to get to know one another.

❖ **Objective 2: Reflect on group dynamics and ways to make the seminar group functional (10 min)**

- **ACTIVITY:** Building Constructive Group Dynamics (10 min)
 - Choose an activity that will engage participants in a discussion of constructive and destructive group behaviors and how to deal with them. Some possible activities include:
 - Have each participant choose their most constructive and one destructive group behavior from the list on page 15. Ask participants to write them on the back of their table tent. Each participant then explains their choices to the larger group.
 - Engage participants in a conversation about ways to handle destructive group behavior. For example, ask participants what facilitators and other participants should do if someone starts to dominate the conversation or completely withdraws from the discussion.
 - Have participants create a list of good and bad group behaviors and brainstorm ways to address these behaviors if they arise in the group.

❖ **Objective 3: Establish ground rules for participation in the seminar round (10 min)**

- **DISCUSS or TELL (10 min)**
 - Either supply the participants with ground rules for the seminar or engage them in a discussion to establish group-generated ground rules.
 - The list of ground rules should include ways to address:
 - Confidentiality
 - Missing sessions and possible make-up work
 - Destructive group behaviors
 - Participant roles and responsibilities
 - Facilitator roles and responsibilities

Introductory Activities: Ways to Help Participants Get to Know One Another

1. Visual Explorer

Spread thirty or more pictures* that broadly depict phenomena related to teaching, mentoring, etc. around the room. Participants choose a visual representation in response to a question or statement, such as “Choose a picture that best represents mentoring.” Each participant explains their choice of picture.

*Adapted from *Paulus, C.J., Horth, D.M., and Drath, W.H. (1999) Visual Explorer: a tool for making shared sense of complexity. Center for Creative Leadership Press.*
<http://www.ccl.org/leadership/index.aspx>. Pictures can also be obtained as a packet of postcards, pages from a magazine, printed images from websites, or participants can be asked to find an image on their own and bring it in.

2. Who are You?

Participants add fun information about themselves to the four corners of their nametags. Some examples include:

Hometown

Favorite food

Favorite TV show

Hobby

Favorite kind of music

Number of people in their family (How each person defines family can be very interesting!)

3. Interviews

Participants interview the person next to them and vice versa, and then introduce one another to the larger group.

4. Truth or Lie?

Everyone tells two truths and one lie, and then the group guesses the lie for each person.

5. Bad Habits

Each person shares one of their bad habits.

6. Memorable Moments

Each person shares something memorable about themselves.

7. Letter Names

Each person says their name and something that starts with the first letter of their name.

8. The M&M game

Pass around a dish of M&M candies. Ask participants to introduce themselves by sharing as many characteristics about themselves as is equal to the number of M&Ms they took from the dish.

Maintaining Effective Communication

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 specific characteristics of effective communication and take time to practice communication skills.

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)

Overview of Activities for the Communication Session: Please note that a core activity is listed for each learning objective. We strongly encourage you to engage the mentors in your group in this activity. There is a list of additional activities that can be used if you have extra time in the session or if the core activity is not working well for the mentors in your group.

	Learning Objectives	Core Activities	Additional Activities
1	Provide Constructive Feedback	Mentors read and discuss case study and then practice giving the mentee feedback (Case #1)	Mentors read about interpersonal communication and discuss implications for their practice (Activity #2, pg 34)
2	Communicate effectively across diverse dimensions	Mentors read and discuss Case #1, focusing on discussion questions #8-10	Mentors read and discuss case study (Case #3)
3	Identify different communication styles	Mentors take a communication styles test and discuss their results in pairs (Activity #1, pg 30)	Mentors generate a list of different communication styles and discuss styles they feel most and least comfortable with (Activity #3)
4	Engage in active listening	Mentors read and discuss case study and then role play a follow-up conversation between the mentor and mentee (Case #2)	Mentors role play a conversation between mentor and mentee centered on the topic of a missed deadline (Activity #4)
5	Use multiple strategies for improving communication	Mentors read and discuss cases #1 and #2 and share specific strategies for improving communication between mentors and mentees	Mentors create a list of barriers to good communication and share strategies for overcoming such barriers (Activity #5)

**Recommended Session on
Maintaining Effective Communication**
(90 minutes)

❖ **Materials Needed for the Session:**

- Table tents and markers
- Chalkboard, whiteboard, or flip chart
- Handouts:
 - Copies of description and learning objectives for *Maintaining Effective Communication*
 - Copies of *Communication* case studies (Giving Constructive Feedback)
 - Copies of *Communication Styles Test*
 - Copies of *Building a Relationship with a Mentee* (This reading can also be sent to mentors prior to the session to review in advance.)

❖ **Introductions** (10 min):

- ASK: Please remind everyone who you are and share what communications topics you hope will be addressed in the session today.
- TELL: Review the introduction and learning objectives for the session.

❖ **Objectives 1 and 2: Provide constructive feedback and communicate effectively across diverse dimensions** (15 min)

➤ ACTIVITY: Case Study #1 (2 min)

- Choose one of the *Communications* case studies and distribute it. Let participants read the case individually for two to three minutes.
- DISCUSS (12 min) in a large group: You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions.
 1. How can you communicate constructively with a mentee whose progress is disappointing?
 2. Should there be a balance between positive and negative feedback? If so, how do you achieve that balance?
 3. How can you communicate in a way that fosters a change in behavior?
 4. Discuss the role of trust in this interaction.
 4. What are the characteristics of good communication? What does it look like? You may wish to provide a handout or a starting list. Let participants supplement the list in a large group discussion. Don't forget nonverbal communication.
 5. What reasons might result in your mentee having difficulty receiving negative feedback? How can you uncover these reasons and address them?
 6. How can you tell if your mentee heard a comment the way it was intended to be heard?
 7. Is a lack of response feedback? When you get no response, how do you interpret that?
 8. How would the situation be affected if your mentee's cultural background is different than your own (race, ethnicity, age, national origin, primary language, religion, etc.)?
 9. Would a difference in gender affect communication in this case?
 10. What if English was the mentee's second language and writing was a challenge? Would you handle the situation differently?

- **ACTIVITY: Role Play (10 min):** In pairs, role play and practice giving constructive feedback to the mentee in the case above. Practice dealing with the mentee giving either a defensive response to the feedback or a complete lack of response (withdrawal). Be aware of nonverbal as well as verbal cues. Use the techniques in the reading to guide your approach.

- ❖ **Objective 3: Identifying different communication styles (25 min)**
 - **TELL:** Think about the way you communicate with your current mentees when engaging in the following activity.
 - **ACTIVITY: Communication Styles Test (7 min):** Mentors individually complete a communication styles test and calculate their score.
 - **DISCUSS (8 min):** Mentors discuss their results in pairs and compare results. Questions to guide their discussion can include (you may wish to write these questions on the whiteboard or flipchart):
 - Specifically, to what extent did or didn't the test validate what you know about yourself?
 - What did you learn?
 - **DISCUSS (10 min)** in large group additional questions regarding communication styles:
 - In what other situations could you apply this type of assessment?
 - How can you determine your mentee's communication style?
 - What are strategies for communicating across different styles?

- ❖ **Objectives 4 and 5: Engage in active listening and use multiple strategies for improving communication (25 min)**
 - **ACTIVITY: Case Study #2 (2 min)**
 - Distribute the Communicating Priorities (Case #2) and let participants read the case individually for two to three minutes.
 - **DISCUSS (12 min)** in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 1. What is the core issue or problem in this situation?
 2. What are some challenges for mentees communicating with multiple mentors?
 3. What are some additional challenges when communicating across cultures? Across disciplines?
 4. What are some challenges communicating at a distance with mentees who are working off-site (in the field, from home, different hours)?
 5. As a mentor, you are in a position of authority. Acknowledging different styles of communication and how those styles are heard depending on the power dynamic at play in a situation is important. How do you accommodate this in your communication? How can you respect personal boundaries?

 - **ACTIVITY: Role Play (10 min):** In pairs, role play a follow-up conversation between Diane and her primary research mentor. Practice active listening skills and try to develop a plan of action to resolve the situation. Take note of each other's body language and facial expressions and discuss how they impact the conversation. Refer to the reading for tips on active listening or for more information on nonverbal communication.

➤ **Summary Activity (5 min)**

- **ACTIVITY:** Reflection (5 min): Mentors reflect on the handout about interpersonal communication and write down two areas for personal improvement.

Case #1: Giving Constructive Feedback

Option 1:

Dr. Timms is a research scholar who is helping her mentor prepare an NIH R01 grant application. Dr. Timms is a productive researcher with generally good writing skills, leading her mentor to rely upon Dr. Timms to help substantially with the preparation of this grant proposal. Unfortunately, Dr. Timms' first draft of her section of the proposal is not of the quality expected by her mentor. While the ideas are good, the elements of the research approach are flawed and the writing style is poor.

From previous experience, the mentor is aware that Dr. Timms does not respond well to negative feedback. She becomes quiet and withdrawn and loses self-confidence; in the past, this response has even negatively impacted her work in the lab as she starts to doubt her ability to be a successful researcher. Moreover, the mentor is coming up against a deadline to submit the R01. The mentor is unsure how to manage this situation so that a well-written, on-time grant proposal is achieved, Dr. Timms productivity is preserved, and she has a productive learning experience in timely and effective grant revisions.

Option 2:

Dr. Richardson is a research scholar who is nearing the end of his KL2 funding, but wishes to continue his post-doctoral training in his mentor's lab. Thus, he is independently applying for a post-doctoral fellowship from an extramural funding agency. His mentor believes that Dr. Richardson is a very valuable asset to the lab and is highly supportive of Dr. Richardson continuing his training in this lab, but does not have any other funding to support Dr. Richardson's salary. The mentor has agreed to advise Dr. Richardson in the preparation of this external fellowship, although the application itself 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 fellowship proposal in its current form would not be a strong candidate 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 keep one of his most productive researchers. The mentor is unsure how to improve Dr. Richardson's proposal while still retaining it as Dr. Richardson's independent work. Moreover, Dr. Richardson has invested more than a month in preparing this application and is not accustomed to criticism of his writing, so the mentor is concerned that Dr. Richardson's defensiveness may create a further obstacle to improving the proposal.

Case #2 Communicating Priorities

Dr. Marcher, a researcher in immunology, is completing her second year as a KL2 scholar and hopes to qualify for a third year of support. Dr. Marcher is also in year three of a tenure track position in Geriatrics. Her primary research mentor has advised her to apply for three grants over the next six months, one of which is a new RFA with a submission deadline only a few weeks away. This plan also seems to align with the KL2 Program expectations for scholar performance. However, Dr. Marcher's department chair has expressed concern about her lack of publications in the past year and its potential negative impact on her tenure review. The chair advises Dr. Marcher to focus less on grant writing in the next six months and devote more time to writing and getting a few manuscripts submitted from a recently completed study. Dr. Marcher understands the chair's perspective, but her research mentor is strongly advising that she procure grants to equip her lab and demonstrate sufficient progress towards becoming an independently funded investigator for the KL2 Review Committee. Dr. Marcher suspects that her primary mentor and department chair have not communicated regularly with one another about a strategic plan for her career development.

Effective Communication Styles Inventory Scoring Form A

DIRECTIONS: Print and complete this scoring form to determine your communication style.

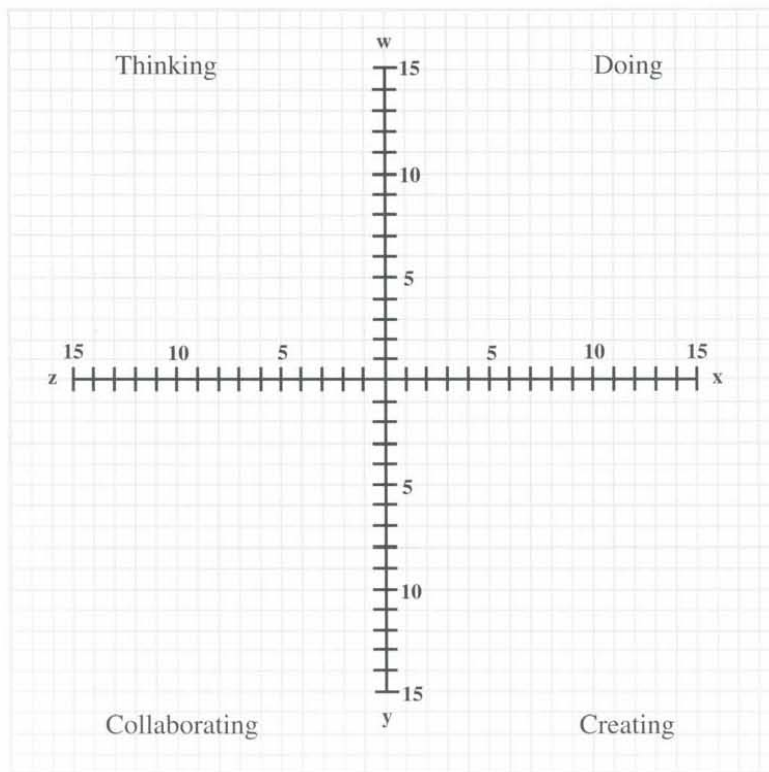
1. Reflect on your personal characteristics as you read across each of the 15 lines below and circle two descriptive words that best describe you on each line. This is a forced choice, so sometimes all four words will describe you, but you **MUST** select only two. Sometime none of the four words “best” describes you, however, you **MUST** select two words on each line.
2. After completing line 15, count the number of words circled on each line, (as you read across from left to right) there must only be 2 words circled on each line.
3. In each column (x, z, w, and y), count the number of words circled and indicate the “total” circled in the box provided.
4. Your “total” scores for each column represent four “points” (w, x, y, z), take these four points and graph them on the scoring grid which follows. When plotting your points, remember zero is in the middle of the graph no matter which direction you are plotting (left, right, up, or down).
5. Draw a four sided figure to connect the four points (in other words when you connect your four points they **MUST** make a square, rectangle, in other words a four sided figure. **DO NOT DRAW A KITE.** The largest area (length x width) of the four sided figure drawn represents your dominant communication style as indicated by the words you selected. If you disagree about your style, go back and review the words you selected.
6. Read the summary page for information about your style.

X	Z	W	Y
1. disputes the issue	unruffled	focused	sociable
2. will take a chance	flexible	rational	sympathetic
3. spur-of-the-moment	prudent	composed	extraverted
4. directs others	asks	pensive	lively
5. decisive	ponders	diligent	gregarious
6. takes control	collaborates	independent	amicable
7. self-assured	noncommittal	orderly	demonstrative
8. convincing	open-minded	thorough	free-thinking
9. will fight for	will defend	effective	good-hearted
10. wants to win	hopeful	pragmatic	young-at-heart
11. eager	diplomatic	systematic	innovative
12. confident	accepting	pains taking	high-strung
13. dominant	mild	plans	talkative
14. insistent	sensible	exact	helpful
15. urgent	constant	conventional	good-natured

			=30
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Scoring Grid

**Effective Communication Styles
Scoring Grid**



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Effective Communication Styles Inventory *Summary*

THINKING/PLANNING

ASK FOR:

- * data
- * information
- * facts

FOCUSED ON:

- * process
- * task
- * goal
- * doing things the right way

UNDER STRESS:

- * avoid

NEED/Like:

- * logical thinking
- * documentation
- * rational approach
- * careful planning

SUPPORTING/COLLABORATING

ASK FOR:

- * information re: others' skills/interests
- * input
- * feedback

FOCUSED ON:

- * people
- * relationships
- * collaborations
- * how situations "feel"

UNDER STRESS:

- * acquiesce or yield

NEED/Like:

- * friendliness
- * participation
- * inclusion
- * involvement

DOING/DIRECTING

TELL ABOUT:

- * progress to goals
- * actions required
- * solutions to problems

FOCUSED ON:

- * task
- * goal
- * winning/being successful
- * making things happen

UNDER STRESS:

- * become autocratic and tell

NEED/Like:

- * options
- * flexibility
- * directness
- * conciseness

VISIONING/CREATING

TELL:

- * visions
- * ideas
- * stories, analogies

FOCUSED ON:

- * big picture
- * models/theories/concepts
- * bringing visions into reality

UNDER STRESS:

- * blame others

NEED/Like:

- * to understand how the details fit their picture
- * innovation and creativity
- * others to handle the details

"Effective Communication Stylus Inventory: Scoring Form A".

Accessed on 6/11/10 from the University of North Carolina website

<http://www.unc.edu/courses/2009fall/nurs/379/960/M5%20Nursing%20Contribution%2009/whe%202005%20effective%20communication%20styles%20inventory.pdf>

Additional Activities (if time allows):

Objective 1; Activity #2:

Have mentors read about interpersonal communication (below, adapted from the International Training and Education Center on HIV: Building a Relationship with a Mentee (accessed 2/2/10

http://www.go2itech.org/HTML/CM08/toolkit/tools/print/relationship/Building_Relationships.doc).

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; Case #3:

Dr. Yin is a first year K-scholar and clinical faculty member in the Department of Medicine. Dr. Yin found his first year as a K-scholar very challenging. In particular, Dr. Yin 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 goal. Last week, Dr. Yin's mentor, a senior member of the department asked Dr. Yin to take on an additional project. While the project is interesting and has great publication potential, Dr. Yin cannot imagine fitting it in without his current research or clinical work suffering. Dr. Yin feels he must say no to his mentor, but fears the repercussions both in terms of their relationship and the opinion his mentor holds of him.

Objective 3; Activity #3:

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 #4:

Have mentors work in pairs and role play a conversation between mentor and mentee centered on the topic of a missed deadline. Practice direct communication about the problem at hand. Also, practice dealing with the mentee giving either a defensive response to the feedback or a complete lack of response (withdrawal). Use the techniques in the reading to guide your approach.

Objective 5; Activity #5:

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, one barrier might be a lack of time to meet one-on-one. Some solutions might be more frequently email, telecoms, or setting up a time to chat by instant message each week.

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, phone calls, etc). Organize the resulting list by types of communication and assign each type to a group of two to three mentors. Each smaller 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 by C. Pfund, 2010)

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.

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

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.
- 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/perl/webwn?s=trust>.

Aligning Expectations

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 mentee 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 skill 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 impact expectations, including differences across disciplines when working in multidisciplinary teams

Overview of Activities for the Expectations Session: Please note that a core activity is listed for each learning objective. We strongly encourage you to engage the mentors in your group in this activity. There is a list of additional activities that can be used if you have extra time in the session or if the core activity is not working well for the mentors in your group.

	Learning Objectives	Core Activities	Additional Activities
1	Establish mutually beneficial expectations for the mentoring relationship	Mentors read and discuss case study (Case #1)	Mentors create a list of predicted mentee expectations and discuss how they can determine if these are being met (Activity #2)
2	Clearly communicate expectations for the mentoring relationship	Mentors draft a mentoring compact (Activity #1)	Mentors role play a follow-up conversation to Case #1 (Activity #3)
3	Align mentee and mentor expectations	Mentors have a post-session meeting with their mentee to discuss their drafted compact (see above)	Mentors develop strategies to identify their own expectations, those of their mentee, and align the two (Activity #4)
4	Consider how personal and professional differences may impact expectations	Mentors read and discuss case study (Case #2)	Mentors discuss challenges mentees may face when working with multiple mentors and brainstorm solutions to these challenges (Activity #5)

**Recommended Session on
Aligning Expectations
(75 minutes)**

❖ **Materials Needed for the Session:**

- Table tents and markers
- Index cards
- Chalkboard, whiteboard, or flip chart
- Handouts:
 - Copies of description and learning objectives for *Aligning Expectations*
 - Copies of *Expectations* case studies (*The Second Year Blues* and *Misaligned Expectations*)
 - Copies of *Example Mentor: Mentee Compacts*

❖ **Introductions (10 min)**

- **ACTIVITY:** Ask each mentor to write in their mentoring folder (provided by the facilitators) any new mentoring activities based on the last session. If none, they should write down something they are thinking about regarding their mentoring relationship based on the previous session. Collect the folders so they can be redistributed at the beginning of the next session. You will be asked for these folders by the research study team at the end of the seminar.
- **ASK:** Introduce yourself and share the most important thing you learned from the last mentor-training session.
- **TELL:** Review the introduction and learning objectives for the session.

❖ **Objective 1: Establish mutually beneficial expectations for the mentoring relationship (18 min)**

- **ACTIVITY: Case Study (18 min)**
 - Distribute *Expectations Case Study #1: The Second Year Blues* and let participants read the case individually for two to three minutes.
 - **DISCUSS (15 min)** in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 1. How do you establish and communicate your expectations of your mentee?
 2. How do you find out what expectations your mentee has of you and for their research experience?
 3. What are strategies for uncovering the unspoken expectations mentees and mentors may have about issues such as authorship, job placement, hierarchy, letters of recommendation, etc.?
 4. How can you help a mentee navigate the different expectations articulated by multiple mentors?

❖ **Objective 2 and 3: Clearly communicate expectations and how to align mentee and mentor expectations (25 min)**

- ASK: Do any of you use mentor: mentee compacts? If so, what has your experience been in using them?
- ACTIVITY #1: Reviewing Mentor: Mentee Compacts (15 min)
 - Mentors review sample compacts and circle or highlight the items in the examples that they would like to include in their own compact.
 - NOTE: The sample compacts provided include one from the University of Pittsburgh CTSA and one that has been used primarily with graduate students and post-docs at UW. Some of the items will resonate with you, while others will not. The goal today is to identify those elements that you would include in your own compact and note additional items you would like to incorporate later.
 - DISCUSS (10 min) in pairs: Mentors discuss items chosen for their compacts and compare results.

❖ **Objective 4: Consider how personal and professional differences may impact expectations, including differences across disciplines when working in multidisciplinary teams**

- ACTIVITY: Case Study (20 min)
 - Distribute *Expectations Case Study #2: Misaligned Expectations* and let participants read the case individually for two to three minutes.
 - DISCUSS (17 min) in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 1. What kind of conversations regarding expectations might have been helpful earlier in this relationship?
 2. What kind of conversations would be helpful at this point? Who should be involved in these conversations?
 3. What are the differences to consider when clinicians work with basic scientists?
 4. How might the culture of the Department of Surgery and the training and experience of the lab manager influence Dr. Lumen's ability to conduct his research?
 5. How is it possible for each individual to succeed in this arrangement?
 6. How does a mentee learn the social dynamics and structure of a research group and the sense of hierarchy of personnel and projects? How can a mentor communicate these aspects of research? At what point is it appropriate for the mentor and mentee to discuss these topics?
 7. How can you confirm that your expectations take into account a mentee's research training and individual learning style, background, and abilities?

➤ **Follow-Up Activity (2 min)**

- TELL: You should try to find time to complete a draft of your mentoring compact and then meet with your mentee to discuss the draft, while recognizing that the draft may change based on the discussion. Make sure the compact aligns your expectations with those of your mentee.

Case Study #1: The Second Year Blues

Dr. Bento is beginning the second year of his appointment as a multidisciplinary clinical research scholar at BIG U Academic Health Center. To date, Dr. Bento has enjoyed working on his mentor's research project, but he is becoming anxious that he has not yet started an independent research project. Every time Ben tries to bring up his concerns with his mentor, it seems his mentor never has enough time to have a discussion focused on Ben's research goals. This situation is becoming frustrating for Ben as he likes his mentor and he understands that the past few months have been extremely busy for his mentor due to a host of factors, i.e., economic budget constraints, preparing applications for the NIH funds, adoption of a new family member, etc. Being a politically astute assistant professor, Ben is reluctant to make a misstep with his well-established, senior mentor yet he knows the clock is ticking. Ben is also concerned that his recent interests in cell signaling mechanisms are too divergent from his mentor's translational research program. Ben wants to stop feeling stuck.

Case Study #2: Misaligned Expectations

Dr. Chris Lumen is a fellowship-trained cardiovascular surgeon and has been on the clinical faculty for three years. Dr. Lumen is highly motivated to develop a new translational basic science line of inquiry. He discussed this exciting new line of research with his mentor, Dr. Pat Stent, a senior research faculty member in the department with a large and well-funded research laboratory. Dr. Stent was very enthusiastic about these new sets of experiments. After a few discussions, Dr. Stent invited Dr. Lumen to join the laboratory, then introduced Dr. Lumen to the lab manager, Dr. Gene Plaque and instructed them to develop the research together. As the laboratory manager, Dr. Plaque had previously experienced a great deal of frustration with rotating medical students and residents, being "assigned" to assist such individuals with their work, and had concerns regarding the competing demands Dr. Lumen would experience between clinical practice and basic research. However, Dr. Plaque did not feel comfortable expressing any of these concerns directly to Dr. Stent or Dr. Lumen because of the hierarchy of a physician-led surgical department. After about two months, Dr. Plaque did finally express his concerns and frustration to Dr. Stent. Dr. Plaque indicated that Dr. Lumen frequently leaves the laboratory in the middle of experiments to attend to clinical cases. Dr. Lumen leaves much of the work incomplete and typically asks Dr. Plaque and other laboratory staff to continue the experiments in his absence, placing an unexpected extra workload on Dr. Plaque and other members of the laboratory. Moreover, Dr. Lumen frequently expresses frustration to Dr. Plaque about how much time experiments take to complete.

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 ___ / ___ / ___



The Institute for Clinical Research Education, serving as the Research Education and Career Development Core of the Clinical and Translational Science Institute (CTSI) University of Pittsburgh



Tomorrow's Doctors, Tomorrow's Cures®

Compact Between Postdoctoral Appointees and Their Mentors

December 2006

Learn

Serve

Lead

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 breaches 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.

Example Compact from Laboratory of Dr. Trina McMahon for Graduate Students

Welcome to the McMahon Lab!

The broad goals of my research program

As part of my job as a professor, I am expected to write grants and initiate research that will make tangible contributions to science, the academic community, and to society. You will be helping me carry out this research. It is imperative that we carry out good scientific method, and conduct ourselves in an ethical way. We must always keep in mind that the ultimate goal of our research is publication in scientific journals. Dissemination of the knowledge we gain by conducting experiments is critical to the advancement of our field. It is also important that we present our work at scientific meetings, so that other researchers are aware of our progress.

What I expect from you

Another part of my job as a professor is to train and advise students. I must contribute to your professional development and progress in your degree. I will help you set goals and hopefully achieve them. However, I cannot do the work for you. In general, I expect you to:

- Learn how to plan, design, and conduct high quality scientific research
- Learn how to present and document your scientific findings
- Be honest, ethical, and enthusiastic
- Be engaged within the research group and at least one program on campus
- Work hard – don't give up!
- Treat your lab mates, lab funds, equipment, and microbes with respect
- Take advantage of professional development opportunities
- Obtain your degree

Getting the science done

I expect you to make steady progress towards your research goals at all times. Part of that process includes being active in setting short and medium term goals including milestone dates and deliverables. During the academic semester, performing well in your courses is certainly important, but should not cause a complete lack of productivity. This is your primary responsibility as a research assistant and the following guidelines are intended to support this responsibility.

An important part of conducting scientific research is keeping pace with the work of other scientists. Learning to use the literature review tools to locate relevant articles and then reading those articles will not only provide you with valuable research skills, but will also guide your research to ensure it can be an original contribution. Finally, reading other people's published work will lead to improved writing skills. A goal of reading one publication per month is a good minimum standard. We will periodically run journal clubs to help achieve this goal, but journal club should not be a substitute for reading on your own within your specific area of research.

Communicating your work to others

Journal publications are the most important way to share your knowledge and creativity with the rest of the scientific community. Students pursuing a Masters degree will be expected to author or make

major contributions to at least one journal paper submission. Students pursuing a doctoral degree will be expected to author at least two journal paper submissions.

Conferences are another important venue for sharing your findings with others. Although the availability of travel funding varies over time, I encourage you to submit your work for presentation to at least one conference per year. Travel fellowships are available through the Environmental Engineering program and the University if grant money is not available. I will help you identify and apply for these opportunities.

Collaborations within the group and beyond

As part of our collaborations with the Center for Limnology and other research groups, you will often be using equipment that does not belong to our lab. I ask that you respect this equipment and treat it even more carefully than our own equipment. Always return it as soon as possible in the same condition you found it. If something breaks, tell me right away so that we can arrange to fix or replace it. Don't panic over broken equipment. Mistakes happen. But it is not acceptable to return something broken or damaged without taking the steps necessary to fix it.

I also expect you to respect your fellow students, and the staff in the department. Part of your professional development is to learn how to work with others and resolve conflicts. Again, I can help you with this. If you feel that you have been treated unfairly by another student or a staff member, please come to me to help resolve the conflict.

Obtaining your degree

It is your responsibility to determine the requirements for your individual graduate program. Depending on the program, this information is available in student handbooks, on websites, or through departmental student services staff. I can help you find these resources but you must take the initiative to make sure all requirements are met on time in order to advance in your degree (e.g. for preliminary exams).

Professional development

UW-Madison has outstanding resources in place to support professional development for students. I expect you to take full advantage of these resources, since part of becoming a successful engineer or scientist involves more than just doing academic research. You are expected to make continued progress in your development as a teacher, as an ambassador to the general public representing the University and your discipline with respect to your networking skills, and as an engaged member of broader professional organizations. The Graduate School has a regular seminar series related to professional development. The Delta Program offers formalized training in the integration of research, teaching, and learning. All graduate programs require attendance at a weekly seminar. Various organizations on campus engage in science outreach and informal education activities. Attendance at conferences and workshops will also provide professional development opportunities. When you attend a conference, I expect you to seek out these opportunities to make the most of your attendance. You should become a member of one or more professional societies such as the Water Environment Federation, the American Society for Microbiology, or the American Society for Limnology and Oceanography. For more information about professional development opportunities, check our lab website and talk with me for guidance.

Vacation:

Your research assistant appointment does not include any formal vacation, sick, holiday or other leave. That said, you are permitted to take a reasonable amount of time for all of these purposes. Approximately two weeks of vacation per year is considered reasonable. As a professional, you should consider how much additional vacation time will interrupt your ability to make progress on your research.

What you should expect from me

You should expect me to **be available for regular meetings** (once a week or every other week). At these meetings we will talk about what you have done lately in the lab, or what you have read. I will do my best to answer questions that you have, and help you solve problems that you experience in your research. Research is not easy. There are many pitfalls and many failures. You will quickly learn that most of your experiments will not work. That is perfectly normal. It is my responsibility to be your cheerleader and help keep you excited about your work. Only with perseverance will you generate high quality results.

You should expect me to help you learn to **present your work**. I will probably ask you to prepare a poster or a presentation for at least one scientific meeting while you are in my research group (in reality, this ends up being at least one per year). It will be my responsibility to help you put it together and practice presenting it. Similarly, I will help you learn to write about your research, mainly by providing feedback on drafts of your thesis and papers.

You should expect me to **be your advocate**. If you have a problem, come and see me. I will do the best I can to help you solve it.

My primary role in the lab is to write grants and bring in money so that you can do your research with as much freedom and flexibility as possible. I serve as an **advisor** in your research, offering guidance and advice. Together we will design a research project tailored to your interests and the objectives tied to the funding that is supporting your work (if applicable). I will also support you in your professional development activities.

Yearly evaluation

Each year we will sit down to discuss progress and goals. At that time, you should remember to tell me if you are unhappy with any aspect of your experience as a graduate student here. Remember that I am your advocate as well as your advisor. I will be able to help you with any problems you might have with other students, professors, or staff.

Similarly, we should discuss any concerns that you have with respect to my role as your advisor. If you feel that you need more guidance, if you feel that I am interfering too much with your work, or if you would like to meet with me more often, tell me. At the same time, I will tell you if I am satisfied with your progress and if I think you are on track to graduate by your target date. It will be my responsibility to explain to you any deficiencies so that you can take steps to fix them. This will be a good time for us to take care of any issues before they become major problems.

I look forward to working with you!

Additional Activities (if time allows):

Objective 1; Activity #2

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 #3

Have mentors read and discuss case study #1 and then work in pairs to role play a follow-up conversation among the two mentors (and the mentee, if that is deemed appropriate). You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 3; Activity #4

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 #5

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

Assessing Understanding

Introduction:

Determining if someone understands you is not easy, yet knowing if your mentee understands you is critical to 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 for addressing such misunderstandings.

Learning Objectives for Understanding:

Mentors will have the knowledge and skills to:

- a. Assess their mentee's understanding
- b. Identify various reasons for a lack of understanding
- c. Use diverse strategies to enhance mentee understanding across diverse disciplinary perspectives

Overview of Activities for the Understanding Session: Please note that a core activity is listed for each learning objective. We strongly encourage you to engage the mentors in your group in this activity. There is a list of additional activities that can be used if you have extra time in the session or if the core activity is not working well for the mentors in your group.

	Learning Objectives	Core Activities	Additional Activities
1	Assess their mentee's understanding	Mentors read and discuss case study and then create a list of ideas they expect their mentee to understand (Case #1)	Mentors generate a list of strategies for assessing understanding in face-to-face meetings, over email, through written reports, etc. (Activity #2)
2	Identify various reasons for a lack of understanding	Mentors brainstorm reasons behind a lack of understanding (Follow-up to Case #1)	Mentors read an excerpt from an expert-novice study and discuss the implications for understanding (Activity #3)
3	Use diverse strategies to enhance mentee understanding across diverse disciplinary perspectives	Mentors share strategies to enhance understanding (Activity #1)	Mentors explain research to one another and assess their understanding (Activity #4)

**Recommended Session on
Assessing Understanding**
(30 minutes)

❖ **Materials Needed for the Session:**

- Table tents and markers
- Chalkboard, whiteboard, or flip chart
- Handouts:
 - Copies of description and learning objectives for *Assessing Understanding*
 - Copies of *Understanding Case Study #1: He Should Know That*

❖ **Overview (5 min)**

- TELL: Review the introduction and learning objectives for the session.

❖ **Objectives 1 and 2: Assessing understanding and identifying reasons for a lack of understanding (20 min)**

➤ **ACTIVITY: Case Study (12 min)**

- Distribute the *Understanding Case Study #1: He Should Know That* and let participants read the case individually for two to three minutes.
- **DISCUSS (10 min)** in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 1. How do you know if your mentee understands something?
 2. How can you help your mentees accurately assess their own understanding?
 3. How can you explain something in more detail without sounding condescending?
 4. How would you know if a scholar is in need of alternative communication modes to understand the research, i.e., written instructions to augment verbal? Is it the scholar's responsibility to let you know their needs in this area?
 5. How can mentors balance promoting independence with confirming understanding?
 6. We all unconsciously make assumptions about ability and level of understanding based on other cues and factors such as race, ethnicity, gender, English fluency, prior experience and background, kinds of questions someone asks, etc. How can you acknowledge those assumptions?
 7. Is it possible that the mentor is the one who is mistaken, that the mentee simply explained it poorly or in terms with which the mentor was unfamiliar? How can you tell the difference between a miscommunication and a true lack of understanding?

➤ **ACTIVITY: Follow-up Discussion (8 min)**

- **DISCUSS** the question below in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart.
 - Question: What reasons can you think of that would explain a mentee having difficulty understanding?
- **NOTE:** Some of the reasons that may arise include differing backgrounds, i.e., clinical versus academic, different modes of communication, misunderstandings regarding the level of understanding that is expected, cultural differences, disciplinary differences, etc

- NOTE: You may want to ask mentors to consider the difference between an expert perspective and novice perspective, e.g., as an expert, there are many steps in an explanation you may leave out as they are second nature or it is hard to remember what it was like to be a novice. For example, when you see a master chef cooking, it looks easy; however, when you try it on your own you realize it is not as clear and that there are many steps that have been left out of the explanation.

❖ **Objective 3: Using diverse strategies to enhance understanding across diverse disciplinary perspectives (10 min)**

➤ ACTIVITY: Identifying Strategies to Enhance Understanding

- ASK: Please share one strategy you use to promote understanding. You may want to record the ideas generated in this discussion on a white board or flip chart.
- NOTE: Strategies you can add to the list include:
 - Taking a minute to consider any assumptions made about what mentee knows or does not know
 - Taking time to remember what it was like to not understand something before I became an expert
 - Writing out an explanation and asking one of my peers from outside the discipline to identify all of the terms they do not understand
 - Asking my mentee to explain something back to me so I can assess their understanding
 - Asking my mentee to explain something to another scholar or trainee
 - Asking my mentee to organize information with a flowchart, diagram, or concept-map.
 - Asking my mentee to come up with an analogy from their own work that relates to our research

Case #1: *He Should Know That*

Dr. Richard Smith started his mentored research in your lab after completing his MD and residency. His professional goals include performing both clinical and translational research as an independent investigator. Dr. Smith has been working in your lab for six months, performing basic science and early-stage translational research, and his research appears to be going well. In a regular meeting with him, you discover that Dr. Smith cannot answer a fundamental question regarding the background and motivation for his current work. In probing further, you find that Dr. Smith appears to be unfamiliar with some core biological concepts that drive many of the projects in the lab, including his own. You often expect such issues to arise when mentoring a graduate student, but are shocked to be in this situation when mentoring someone with Dr. Smith's education and experience. You wonder if you missed other indicators of Dr. Smith's lack of understanding in previous months. Moreover, you are not sure how to proceed to assess Richard's current understanding and identify the gaps in his understanding.

Additional Activities (if time allows):

Objective 1; Activity #2

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 #3

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." National Academy Press). 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 #4

Have mentors work in pairs, preferably with someone who works outside their area of expertise. In the first round, one mentor should explain their research to their partner in one minute or less. The partner should then explain their understanding of the research based on the description they heard. The mentors should then switch roles. Following the activity, have the mentors discuss in a large group what the activity indicates about which areas of their research may be confusing to novices in the field.

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

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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.

Addressing Diversity

Addressing Diversity

Introduction:

Diversity, along a range of dimensions, offers both challenges and opportunities to any mentor-mentee relationship. Learning to identify, reflect upon, learn from, and engage with diversity is critical to forming and maintaining an effective mentoring relationship.

Learning Objectives for Diversity:

Mentors will have the knowledge and skill to:

1. Improve understanding of individual differences and cultures, and how they influence interactions
2. Recognize the impact that conscious and unconscious assumptions, preconceptions, biases, and prejudices bring to the mentor-mentee relationship and how to deal with them
3. Identify concrete strategies for learning about, recognizing, and addressing issues of diversity and engage in conversations about diversity with their mentee

Overview of Activities for the Communication Session: Please note that a core activity is listed for each learning objective. We strongly encourage you to engage the mentors in your group in this activity. There is a list of additional activities that can be used if you have extra time in the session or if the core activity is not working well for the mentors in your group.

	Learning Objectives	Core Activities	Additional Activities
1	Improve understanding of individual differences and cultures, and how they influence interactions	Mentors reflect and share an experience in which they felt like an outsider (Activity #1)	Mentors consider how they and their mentee differ and how these differences affect the mentoring experience for both (Activity #3)
2	Recognize the impact that conscious and unconscious assumptions, preconceptions, biases, and prejudices bring to the mentor-mentee relationship and how to deal with them	Mentors read the results of diversity studies, discuss implications, and brainstorm strategies for reducing bias (Activity #2)	Mentors explore their own biases using an implicit assumptions test and discuss the results (Activity #4)
3	Identify concrete strategies for learning about, recognizing, and addressing issues of diversity and engage in conversations about diversity with their mentee	Mentors read and discuss case study (Case #1)	Mentors read and discuss case study (Case #2 or 3)

**Recommended Session on
Addressing Diversity
(60 minutes)**

❖ **Materials Needed for the Session:**

- Table tents and markers
- Index cards
- Chalkboard, whiteboard or flip chart
- Handouts:
 - Copies of description and learning objectives for *Addressing Diversity*
 - Copies of *Diversity* case study (*Is It OK to Ask?*) and additional cases (optional)
 - Copies of the *Diversity Study Results Handout*
 - Copies of “*Benefits and Challenges of Diversity*”

❖ **Introduction (10 min)**

- **ACTIVITY:** Ask each mentor to write in their mentoring folder (provided by the facilitators) any new mentoring activities based on the last session. If none, they should write down something they are thinking about regarding their mentoring relationship based on the previous session. Collect the folders so they can be redistributed at the beginning of the next session. You will be asked for these folders by the research study team at the end of the seminar.
- **TELL:** Review the introduction and learning objectives for the session.

❖ **Objective 1: Improve understanding of differences and cultures, and how they influence interactions (15 min)**

- **ACTIVITY:** Reflecting on diversity
- **ASK:** Think back to the time when you felt most conspicuous as someone who did not fit into a situation or setting. What was it, what did it feel like, how did you react? Alternatively, share your experience in a situation where you could see that someone else felt like they did not belong or fit in.
- **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.
- **ALTERNATIVE ACTIVITY:** Ask mentors to picture an all-American boy, including his clothing and the setting, and then to draw or write a description of that image. Have mentors share their images/descriptions and discuss how each person’s lived experiences contribute to the elements of their drawing/descriptions and lead to assumptions and bias. Discussion may include the class, race or ethnicity of the boy, or if he is urban, rural, or suburban.

➤ **Objective 2: Recognize the impact that assumptions, preconceptions, biases and prejudices bring to the mentor-mentee relationship and how to deal with them.**

ACTIVITY: Implications of Diversity Research

- Distribute the *Diversity Study Results* handout and let participants read it individually for two to three minutes.
- TELL: discuss, in pairs, your reaction to one of the studies and the implications for your mentoring practice (6 min)
- NOTE: Many of these studies are summarized in “The Benefits and Challenges of Diversity,” which is included in the materials handed out.
- DISCUSS (12 min) in a large group: You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 - a. What were your initial reactions to the studies?
 - b. Which study captured your attention? Why?
 - c. What implications do these study results have for your mentoring practice?
 - d. What are two to three practical things you could do to minimize the impact of bias, prejudice, and stereotype in your mentoring relationship?

NOTE: Ideas you can include in the list are:

- Slow down when reviewing someone’s work. When we rush, it is more difficult to minimize our biases.
- Consider your position of privilege and recognize that your mentee may not have had the same life experiences.

❖ **Objective 3: Identify concrete strategies for learning about, recognizing and addressing issues of diversity, and engaging in conversations about diversity with their mentee (20 min)**

➤ ACTIVITY: Case Study (15 min)

- Distribute the *Diversity Case Study #1: Is It Ok to Ask?* and let participants read the case individually for two to three minutes.
- DISCUSS (12 min) in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion with these questions:
 1. As a mentor, would you feel comfortable asking a mentee about how their identity impacts their experiences? How do you decide when asking questions about these issues is appropriate or not?
 2. Specifically, how would you go about engaging someone in a discussion about their race, ethnicity, gender, disability, age, sexual orientation, background? 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?
 3. In this case study, how does gender affect the picture? Would your reaction or suggestions change for male versus female mentors? What about generational differences? What assumptions come with older versus younger mentors?
 4. How, if at all, would you respond differently if the race of the mentee were different? What if she were Latina, Asian, Arab, or of mixed race? What if you were uncertain of how she identifies herself racially?
 5. How would the situation change if it were an African-American mentor with a curious white mentee?
 6. Do you think everyone should be treated the same? Does treating everyone the same mean they are being treated equally?

Case Study #1: *Is it OK to Ask???*

Last year I worked with a fantastic scholar who has since left to work at another institution. She was very intelligent 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.

Activity #2: 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 the guidebook for more details about these and other studies.

Study 1:

Blind, randomized trial: When asked to rate the quality of verbal skills indicated by a short text, evaluators rated the skills as lower if they were told an African-American wrote the text than if they were told a white person wrote it, and gave lower ratings when told a man wrote it than when told a woman wrote it.

Study 2:

Real life study: CVs of real women were assigned a masculine or feminine name, randomly, and sent to 238 academic psychologists to review either 1) at the time of job application or 2) at the time of review for an early tenure decision. Respondents were more likely to hire the applicant if a masculine name was found on the CV at the time of job application. Gender of applicant had no effect on respondents’ likelihood of granting tenure when their CV was reviewed as part of an early tenure decision. However, there were four times more “cautionary comments” in the margins of the tenure packages with feminine names such as, “We would have to see her job talk.”

Study 3:

In studies of mock juries, those that contained members of ethnic minority groups deliberated more effectively and processed information more carefully than juries that lacked ethnic diversity.

Study 4:

Real life study: Parents’ estimates of math ability are higher for sons than for daughters, despite no gender differences in grades or test scores.

Study 5:

If African-American or female students are asked to identify their race or gender, respectively, at the start of an exam, they will do statistically worse on that exam.

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)

Additional Activities:

Activity #3: Ask mentors to consider how they and their mentee differ and how these differences affect the mentoring experience for both. Ask each mentor to write a reflection of this topic for three to five minutes and then share it with the mentors in your group to generate a larger discussion.

Activity #4: 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 <https://implicit.harvard.edu/implicit/> mentors can find a number of tests that let them 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.

Case Study #2: *Language Barriers*

I am a researcher in a very crowded lab. This fall, two new K-scholars started in the lab, both are Chinese. The scholars were great—they worked hard, got interesting results, were fun to be around, and fit into the group really well. The problem was that they spoke Chinese to each other all day long. And I mean ALL DAY. For eight or nine hours every day, I listened to this rapid talking that I couldn't understand. Finally, one day I blew. I said in a not very friendly tone of voice that I'd really appreciate it if they would stop talking because I couldn't get any work done. Afterwards, I felt really bad and apologized to them. I brought the issue to my peers and was surprised by the length of the discussion that resulted. People were really torn about whether it is okay to require everyone to speak in English and whether asking people not to talk in the lab is a violation of their rights. Our class happened to be visited that day by a Norwegian faculty member and we asked her what her lab policy is. She said everyone in her lab is required to speak in Norwegian. That made us all quiet because we could imagine how hard it would be for us to speak Norwegian all day long.

Case Study #3: *Difference of Opinion*

You just finished your Masters 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 that you use the research questions used in their other studies, so he can compare the data across studies. Most of those previous studies were developed and done 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.



W I S E L I

Women in Science & Engineering Leadership Institute
University of Wisconsin-Madison

Benefits and Challenges of Diversity

The diversity of the 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 constitutes a dynamic, intellectual community.

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 (Cox 1993). To minimize the challenges and derive maximum benefits from diversity, we must be respectful of each other's cultural and stylistic differences and be aware of unconscious assumptions and behaviors that may influence interactions. The goal is to create a climate in which all individuals feel "personally safe, listened to, valued, and treated fairly and with respect" (Definition of Campus Climate, UW Provost's Office, 2004).

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.

BENEFITS FOR TEACHING AND RESEARCH

Research shows that diverse working groups are more productive, creative, and innovative than homogeneous groups. This research suggests that developing a diverse faculty will enhance teaching and research (Milem 2001). **Some findings are:**

- A controlled experimental study of performance in a brainstorming session compared the ideas generated by ethnically diverse groups composed of Asians, blacks, whites, and Latinos to those produced 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, but, using measures of feasibility and effectiveness, rated the ideas produced by diverse groups as being of higher quality (Cox 1993; McLeod, et al. 1996).
- The level of critical analysis of decisions and alternatives was higher in groups that heard minority viewpoints than in those that did not, regardless of whether or not the minority opinion was correct or ultimately prevailed. Minority viewpoints stimulated discussion of multiple perspectives and previously unconsidered alternatives (Nemeth 1985, 1995).
- A study of innovation in corporations found that the most innovative companies deliberately established diverse work teams (Kanter 1983).
- Using data from the 1995 Faculty Survey conducted by the Higher Education Research Institute (HERI) at UCLA, another study documented that scholars from minority groups have expanded and enriched scholarship and teaching in many intellectual disciplines by offering new

perspectives, and raising new questions, challenges, and concerns (Antonio 2002; see also Turner 2000, Nelson and Pellet 1997).

- Several research studies found that women and faculty of color more frequently used active learning in the classroom, encouraged student input, and included perspectives of women and minorities in their course work (Milem 2001).

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 (Smith et al. 1997). **Some examples are:**

- A national longitudinal study conducted by HERI at UCLA involving 25,000 undergraduates attending 217 four-year colleges and universities in the late 1980s showed that institutional policies emphasizing diversity of the campus community, inclusion of themes relating to diversity in faculty research and teaching, and opportunities for students to confront racial and multicultural issues in the classroom and in extracurricular settings had uniformly positive effects on students' cognitive development, satisfaction with the college experience, and leadership abilities (Astin 1993).
- An analysis of two longitudinal studies, one using data from the Cooperative Institutional Research Program (CIRP), a national survey conducted by HERI with more than 11,000 students from 184 institutions in 1985 and 1989, and one with approximately 1,500 students at the University of Michigan conducted in 1990 and 1994, 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" (Gurin 1999, Gurin et al. 2002).
- Another major study used data from the National Study of Student Learning (NSSL) to show that both in-class and out-of-class interactions and involvement with diverse peers fostered critical thinking. This study also showed 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 (Pascarella et al. 1996).
- Using the "Faculty Classroom Diversity Questionnaire," a comprehensive survey of faculty attitudes toward and experiences with ethnic and racial diversity on campus, researchers found that more than 69% of approximately 500 faculty respondents in a randomly selected sample of 1,210 faculty from Carnegie Classified Research I institutions believed that all students benefited from learning in racially and ethnically diverse environments and that such environments exposed students to new perspectives and encouraged them to examine their own perspectives. More than 40% of respondents believed diversity fostered interactions that helped develop critical thinking and leadership skills (Maruyama and Moreno 2000). Another survey found that more than 90% of 55,000 faculty respondents believed that a racially and ethnically diverse campus enhanced students' educational experiences (Milem and Hakuta 2000).
- A 1993–94 survey of 1,215 faculty in doctoral-granting departments of computer science, chemistry, electrical engineering, microbiology, and physics showed that women faculty play an important role in fostering the education and success of women graduate students (Fox 2003).

CHALLENGES OF DIVERSITY

Despite the benefits that a diversified faculty, staff, and student body offer to a campus, diversity also presents considerable challenges that must be addressed and overcome. Some examples include:

- Numerous studies show that women and minority faculty members are considerably less satisfied with many aspects of their jobs than are majority male faculty members. These include teaching and committee assignments, involvement in decision-making, professional relations with colleagues, promotion and tenure, and overall job satisfaction (Allen et al. 2002; Aguirre 2000; Astin and Cress 2003; Foster et al. 2000; Milem and Astin 1993; MIT Committee on Women Faculty 1999; Riger 1997; Somers 1998; Task Force on the Status of Women Faculty in the Natural Sciences and Engineering at Princeton 2003; Trower and Chait 2002; Turner 2002; Turner and Myers 2000; University of Michigan Faculty Work-Life Study Report 1999; Study of Faculty Worklife at the University of Wisconsin–Madison).
- A recent study of minority faculty in universities and colleges in eight Midwestern states (members of the Midwestern Higher Education Commission) showed that faculty of color experience exclusion, isolation, alienation, and racism in predominantly white universities (Turner and Myers, 2000).
- Minority students, as well, often feel isolated and unwelcome in predominantly white institutions and many experience discrimination and differential treatment. Minority status can result from race, ethnicity, national origin, sexual orientation, disability, and other factors (Amaury and Cabrera, 1996; Cress and Sax, 1998; Hurtado, 1999; Rankin, 1999; Smedley et al. 1993; Suarez-Balcazar et al. 2003).
- Women students, particularly when they are minorities in their classes, may experience “a chilly climate” that can include sexist use of language; presentation of stereotypic or disparaging views of women; differential treatment from professors; and sexual harassment (Crombie et al. 2003; Foster et al. 1994; Hall and Sandler 1982, 1984; Sands 1998; Swim et al. 2001; Van Roosmalen and McDaniel 1998; Sandler and Hall 1986; Whitte et al. 1999).
- Studies show that the 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 simply avoid interactions with minorities (Plant and Devine 2003).

Influence of Unconscious Assumptions and Biases

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

Studies show that people who have strong egalitarian values and believe that they are not biased may nevertheless unconsciously or inadvertently behave in discriminatory ways (Dovidio 2001). A first step toward improving climate is to recognize that unconscious biases, attitudes, and other influences not related to the qualifications, contributions, behaviors, and personalities of our colleagues can influence our interactions, *even if we are committed to egalitarian principles*.

The results from controlled research studies in which people were asked to make judgments about others demonstrate the potentially prejudicial nature of our many implicit or unconscious assumptions. Examples range from physical and social expectations or assumptions to those that have a clear connection to the environments in which we work.

EXAMPLES OF COMMON SOCIAL ASSUMPTIONS/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 (Biernat and Manis 1991).
- When shown photographs of men with similar athletic abilities, evaluators rated the athletic ability of African-American men higher than that of white men (Biernat and Manis 1991).
- Students asked to choose counselors from among a group of applicants with marginal qualifications more often chose white candidates than African-American candidates with identical qualifications (Dovidio and Gaertner 2000).

These studies show how generalizations that may or may not be valid can be applied to the evaluation of individuals (Bielby and Baron 1986). In the study on height, evaluators applied the statistically accurate generalization that men are usually taller than women to their estimates of the height of individuals who did not necessarily conform to the generalization. If we can inaccurately apply generalizations to characteristics as objective and 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 generalization is 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 they were told that an African-American provided the definitions than if they were told that a white person provided them (Biernat and Manis 1991).
- When asked to assess the contribution of skill and 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 (Deaux and Emswiller 1974).
- 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. Gender bias decreased when they gave ample time and attention to their judgments, which rarely occurs in actual work settings (Martell 1991).
- Evidence suggests that perceived incongruities between the female gender role and leadership roles create two types of disadvantage for women: (1) ideas about the female gender role cause women to be perceived as having less leadership ability than men and consequently impede women's rise to leadership positions, and (2) women in leadership positions receive less favorable evaluations because they are perceived to be violating gender norms. These perceived incongruities lead to attitudes that are less positive toward female leaders than male leaders (Eagly and Karau 2002; Ridgeway 2001).
- A study of the nonverbal responses of white interviewers to black and white interviewees showed that white interviewers maintained higher levels of visual contact, reflecting greater attraction, intimacy, and respect, when talking with whites, and higher rates of blinking, indicating greater negative arousal and tension, when talking with blacks (Dovidio et al. 1997).

EXAMPLES OF ASSUMPTIONS OR BIASES IN ACADEMIC CONTEXTS:

Several research studies have shown that biases and assumptions can affect the evaluation and hiring of candidates for academic positions. These studies show that assessment of résumés and postdoctoral applications, evaluation of journal articles, and the language and structure of letters of recommendation are significantly influenced by the gender of the person being evaluated. As we attempt to enhance campus and department climate, we need to consider whether the influence of such biases and assumptions also affects selection of invited speakers, conference participants, interaction and collaboration with colleagues, and promotion to tenure and full professorships.

- A study of over 300 recommendation letters for medical faculty hired at a large American medical school in the 1990s found that letters for female applicants differed systematically from those for males (Trix and Psenka 2002).
- In a national study, 238 academic psychologists (118 male, 120 female) evaluated a résumé randomly assigned a male or a female name. Both male and female participants gave the male applicant better evaluations for teaching, research, and service and were more likely to hire the male than the female applicant (Steinpreis et al. 1999).
- A study of postdoctoral fellowships awarded by the Medical Research Council in Sweden found that women candidates needed substantially more publications to achieve the same rating as men, unless they personally knew someone on the panel (Wenneras and Wold 1997).
- ❖ In a replication of a 1968 study, researchers manipulated the name of the author of an academic article, assigning a name that was male, female, or neutral (initials). The 360 college students who

evaluated this article were influenced by the name of the author, evaluating the article more favorably when it was written by a male than when written by a female. Questions asked after the evaluation was complete showed that bias against women was stronger when evaluators believed that the author identified only by initials was female (Paludi and Bauer 1983).

BIASES AND ASSUMPTIONS CAN INFLUENCE WOMEN, MINORITIES, AND THE UNIVERSITY IN THE FOLLOWING WAYS:

- Women and minorities may be subject to higher expectations in areas such as number and quality of publications, name recognition, or personal acquaintance with a committee member.
- Colleagues from institutions other than the major research universities that have trained most of our faculty may be undervalued. Opportunities to benefit from the experiences and expertise of colleagues from other institutions, such as historically black universities, four-year colleges, government, or industry, who can offer innovative, diverse, and valuable perspectives on research, teaching, and the functioning of the department, may consequently be neglected.
- The work, ideas, and findings of women or minorities may be undervalued, or unfairly attributed to a research director or to collaborators despite contrary evidence in publications or letters of reference.
- The ability of women or minorities to run a research group, raise funds, and supervise students and staff may be underestimated, and may influence committee and teaching assignments.
- Assumptions about possible family responsibilities and their effect on a colleague's career path may negatively influence evaluation of merit, despite evidence of productivity, and may affect committee and teaching assignments.
- Negative assumptions about whether female or minority colleagues "fit in" to the existing environment can influence interactions.

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Fostering Independence

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.

Learning Objectives for Independence:

Mentors will have the knowledge and skill 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’s 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

Overview of Activities for the Independence Session: Please note that a core activity is listed for each learning objective. We strongly encourage you to engage the mentors in your group in this activity. There is a list of additional activities that can be used if you have extra time in the session or if the core activity is not working well for the mentors in your group.

	Learning Objectives	Core Activities	Additional Activities
1	Define independence, its core elements, and how those elements change over the course of a mentoring relationship	Mentors share ideas on the core elements of independence and then organize the list based on career stage (Activity #1)	Mentors read and discuss case study (Case #2)
2	Employ various strategies to build their mentee’s confidence, establish trust, and foster independence	Mentors read and discuss case study (Case #1)	Mentors share strategies they have used to foster independence (Activity #3)
3	Identify the benefits and challenges of fostering independence	Mentors list the benefits of an independent mentee, as well as the challenges (Activity #2)	Mentors read and discuss case study (Case #3)

**Recommended Session on
Fostering Independence**
(60 minutes)

❖ **Materials Needed for the Session:**

- Table tents and markers
- Chalkboard, whiteboard, or flip chart
- Handouts:
 - Copies of description and learning objectives for *Fostering Independence*
 - Copies of *Independence* case study (*Independent Research?*)

❖ **Overview (5 min)**

- TELL: Review the introduction and learning objectives for the session.

❖ **Objective 1: Define independence, its core elements, and how those elements change over the course of a mentoring relationship (25 min)**

- **ACTIVITY: Defining Independence (15 min)**
 - **ASK:** Please describe your definition of independence. What does independence look like?
 - **TELL:** We recognize that independence looks different at various stages of a researcher's career. As we list the elements of independence, let us also note the most appropriate career stage for each element.
 - You may want to record the ideas generated in this discussion on a white board or flip chart, writing elements of independence along a continuum based on the discussion. The continuum should stretch from MD or PhD student to post-doc, early K-scholar, late K-scholar, and tenured faculty member.
 - **NOTE:** Some elements of independence include:
 - ◆ Thinking on your own
 - ◆ Publishing on your own
 - ◆ Securing your own funding
 - ◆ Starting your own line of research
 - ◆ Solving problems on your own
 - ◆ Being confident in your own decisions
- **DISCUSS (10 min)** in a large group the following questions:
 1. How can you tell if a certain level of independence is achieved? For example, what does independent thinking look like?
 2. Do mentees know what level of independence is expected of them?
 3. Do you think your mentee's estimations of their level of independence are aligned with yours?
 4. Is there ever a point in the mentoring relationship in which the mentee is so independent that they no longer need the mentor?
 5. How can a mentee work both as an independent researcher and a team clinician?

➤ FOLLOW-UP ACTIVITY: Draw your own timeline for establishing independence and discuss it with your mentee to see if it aligns with their expectations.

❖ **Objective 2: Employ various strategies to build mentee confidence, establish trust, and foster independence (20 min)**

➤ ACTIVITY: Case Study

- Distribute the *Independence Case Study #1: Independent Research?* and let participants read the case individually for two to three minutes.
- DISCUSS (17 min) in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 - a. What is independent research?
 - a. How does a mentor come to understand a mentee's decision-making ability so that the mentor can trust the mentee's decisions?
 - b. How can you foster collegial sharing or partnership within an existing power dynamic between a mentor and mentee?
 - c. How can you determine what level of independence a mentee is ready for? How do you account for your mentee's strengths and weaknesses in this decision?
 - d. How can you determine if you are making assumptions about a mentee's ability based on their productivity or work style, especially if they differ from yours?
 - e. A natural consequence of fostering early independence can sometimes be a reduced quality and quantity of data produced. Is this a worthwhile sacrifice?
 - f. How do you convey the level of independence you expect from your mentee?
 - g. How can team mentoring help or hinder in this case study?

❖ **Objective 3: Identify the benefits and challenges of fostering independence (10 min)**

➤ ACTIVITY: Identifying Benefits and Challenges of Fostering Independence

- ASK: Please share one benefit or one challenge of a mentee achieving independence. You may want to record the ideas generated in this discussion on a white board or flip chart.
- NOTE: Benefits and challenges that may be included are:
 - Benefits
 - ◆ Affirmation of your ability to train another researcher
 - ◆ Increase capacity in your research field
 - ◆ Increase creativity and research in translational research related to your field
 - ◆ Authorship on joint publications
 - ◆ Increase capacity and skill in your research group
 - ◆ Broadening diversity within your research group
 - Challenges
 - ◆ Expense
 - ◆ Competing demands on time and need to get research done
 - ◆ Slower progress toward achieving grant-funded objectives
 - ◆ Greater risk of new ideas not panning out
 - ◆ Issues of intellectual property
 - ◆ Time needed to mentor effectively
 - ◆ Misalignment of expectations and goals
 - ◆ Addressing the challenges of interdisciplinary work

Case 1: *Independent Research?*

Dr. Klein is very excited about the grant proposal he is writing to NIH. The proposal builds upon research he has been conducting as a K-scholar in the laboratory of Dr. Janco. Dr. Klein feels strongly that the proposal clearly describes the logical next steps in the project as well as relates the research to his previous clinical work. When Dr. Klein meets with Dr. Janco to discuss the grant proposal, he is surprised to discover that Dr. Janco is less than enthusiastic about the proposal. Dr. Janco informs Dr. Klein that the proposal is too closely aligned with Dr. Klein's current work and its future direction. He 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.

Additional Activities (if time allows):

Objective 1; Case Study #2: Forced Guidance

I started working with a new scholar this semester and I just can't seem to communicate effectively with her. I told her at the beginning of the semester that I thought we should have weekly meetings to talk about her progress, and she agreed. At our next meeting, I asked her to run through a list of the things she'd accomplished that week. She had no notes and seemed pretty unprepared for talking about her work in the level of detail that I expected. She's been canceling most of our meetings at the last minute – either she doesn't feel well, or she suddenly remembers an assignment for another class that's due the next day. I know that she's doing the work, because at the few meetings she keeps, she has a lot to say – but her progress on this project is very uneven, both in time taken and in quality, and I'm often forced to suggest that she redo crucial pieces. I fear these critical meetings leave her demoralized and less interested in accepting guidance from me, but I don't know how else to get her to understand that she needs my help.

Objective 2; Activity #3

Have mentors generate a list of strategies that can be used to foster independence. 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 3; Case Study #3: The Slow Writer

The K-scholar in my group is adept at performing experiments, 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 did experiments. 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 her work. However, to become an independent PI, I know the scholar must be able to write her own manuscripts and grant proposals. 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?

Promoting Professional Development

Promoting Professional Development

Introduction:

The ultimate goal of most 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 often critically important to identifying and successfully meeting the mentee's long-term career objectives.

Learning Objectives for Promoting Professional Development:

Mentors will have the knowledge and skill to:

1. Identify the roles mentors play in the overall professional development of their mentees
2. Develop a strategy for guiding professional development using some form of written format
3. Initiate and sustain periodic conversations with mentees on professional goals and career development objectives and strategies
4. Recognize and 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, work-family balance, etc.

Overview of Activities for the Professional Development Session: Please note that a core activity is listed for each competency. We strongly encourage you to engage mentors in your group in this activity. There is a list of additional activities that can be used if you have extra time in the session or if the core activity is not working well for the mentors in your group.

	Learning Objectives	Core Activities	Additional Activities
1	Identify roles mentors play in the overall professional development of their mentees	Mentors brainstorm a list of the roles mentors play in the professional development of their mentee beyond research, then and rank them in order of importance (Activity #1)	Mentors discuss the ways in which their own mentors supported and promoted their professional development in the past (Activity #4)

	Learning Objectives	Core Activities	Additional Activities
2	Develop a strategy for guiding professional development using some form of written format	Mentors review and discuss three different documents that could be used as guides to create Individual Development Plans (IDPs) (Activity #2)	Mentors revise the draft compact they created in the <i>Expectations</i> session to include more specific expectations for professional development (Activity #5)
3	Initiate and sustain periodic conversations with mentees on professional goals and career development objectives and strategies	Mentors use the written professional development plan created in Activity #2 as a guide for a role-play conversation with their mentee about career development (Activity #3)	Mentors use the revised expectations compact created in Activity #5 to guide a conversation with their mentee about career development (Activity #6)
4	Recognize and engage in open dialogue on balancing 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.	Mentors read and discuss case study in which one post-doc has a career goal of being a PI, while another does not (Case #1)	<p>Mentors read and discuss case study in which a scholar has to deal with unexpected life changes that impact his work-life balance (Case #2)</p> <p>Mentors read and discuss case study in which a scholar strives for a good family-work life balance (Case #3)</p>

**Recommended Session on
Promoting Professional Development**
(90 minutes)

❖ **Materials Needed for the Session:**

- Table tents and markers
- Index cards
- Chalkboard, whiteboard, or flip chart
- Handouts:
 - Copies of description and learning objectives for *Professional Development*
 - Copies of the three example Individual Development Plans
 - Copies of the *Professional Development* case study #1 (*To Be or Not to Be a PI*)
 - Copies of the *Professional Development* case study #2 (*Finding the Balance*)
 - Copies of the *Professional Development* case study #3 (*Life Changes*)
 - Copies of *Good Work Life Balance Annotated Bibliography*

❖ **Introduction (10 min)**

- **ACTIVITY:** Ask each mentor to write in their mentoring folder (provided by the facilitators) any new mentoring activities based on the last session. If none, they should write down something they are thinking about regarding their mentoring relationship based on the previous session. Collect the folders so they can be redistributed at the beginning of the next session. You will be asked for these folders by the research study team at the end of the seminar.
- **TELL:** Review the introduction and learning objectives for the session.

❖ **Objective 1: Identify the roles mentors play in the overall professional development of their mentees (30 min)**

- **ACTIVITY :** Brainstorming Mentor Roles in Professional Development
 - **ASK:** In pairs, please list all of the roles mentors can or should play in the professional development of their mentee, beyond research training (10 min)
 - **DISCUSS (15 min)** in a large group the roles each pair listed. You may want to record the ideas generated in this discussion on a white board or flip chart.
 - **NOTE:** Some elements of professional development include:
 - Networking
 - Finding funding
 - Managing staff
 - Time management
 - Leadership skills
 - Work-life balance
 - Public speaking
 - **DISCUSS (5 min)** in a large group the following questions:
 - Which of the roles on the list are the most important? Why?
 - Are there some roles on the list that should not be the mentor's concern? Why?

- ❖ **Objective 2: Develop a strategy for guiding professional development using some form of written format (15 min)**
 - ACTIVITY: Reviewing Individual Development Plans and Mentoring Plans
 - REVIEW (15 min) individually: Mentors review example plans individually and make notes on them to indicate which aspects of the plans they would like to adopt for use with their own mentees. Some mentors may already use such plans and may wish to share their own versions. (5 min)

- ❖ **Objective 3: Initiate and sustain periodic conversations with mentees on professional goals and career development objectives and strategies (15 min)**
 - ACTIVITY: Using the Individual Development Plans and Mentoring Plans
 - ROLE-PLAY (15 min) in pairs: Mentors role play a conversation with their mentee about completing the individual development plans and how the completed plan can be used to navigate the mentoring relationship.
 - FOLLOW-UP ACTIVITY: Mentors should choose or adapt an individual development plan and ask their mentee to complete it annually (at a minimum). The completed plan should be used to guide a conversation with mentor and mentee about professional development needs and expectations.

- ❖ **Objective 4: Recognize and engage in open dialogue on balancing the competing demands, needs, and interests of mentors and mentees (20 min)**
 - ACTIVITY: Case Study (20 min)
 - Distribute *Professional Development Case Study #1: To Be or Not to Be PI* and let participants read the case individually for two to three minutes.
 - DISCUSS (17 min) in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 - What are the responsibilities of the mentor to every mentee, regardless of career path?
 - 1) To what extent are the differing value systems of the mentor and mentee a factor in their relationship?
 - 2) Does the gender of the mentee and mentor impact your assessment of this case?
 - 3) How might non-research 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) How can the concept of workforce flexibility be translated for scientists in clinical and translational research?
 - 5) How could issues of the dual-career family play into this mentee's decision and thus influence the discussion?

Example #1: Individual Development Plan (IDP)*

1. Name _____ 2. Date _____

3. Academic Series and Rank

- | | |
|--|------------------------------------|
| <input type="checkbox"/> Ladder Rank | <input type="checkbox"/> Assistant |
| <input type="checkbox"/> In-Residence | <input type="checkbox"/> Associate |
| <input type="checkbox"/> Adjunct | <input type="checkbox"/> Professor |
| <input type="checkbox"/> Clinical | |
| <input type="checkbox"/> Health Science Clinical | |

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, 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, course or program improvements, etc). 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, etc). 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, etc). 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			
<i>Mentor Name</i>	<i>Objectives</i> (e.g. understand how to manage multi-site research projects)	<i>What I can offer</i> (e.g. grant writing, publications)	<i>Outcomes</i> (e.g. submit multi-center research grant proposal)

*Adapted from Ann J Brown, MD MHS, Associate Vice Dean for Faculty Development 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 www.ucdmc.ucdavis.edu/.../NewCareerMtrgMentoringUpdateWkst.doc

Case Study #1: *To Be or Not to Be a PI*

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 his career goals do not include becoming a PI. The other scholar has her heart set on being a PI in the future. Lately, you find yourself spending more time giving professional development advice to the post-doc who intends to become a PI. 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 writing off the other scholar, believing that he is not worth your time and advice if he is leaving the PI track.

Additional Activities (if time allows):

Objective 1; Activity #4

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). You may want to record the ideas generated in this discussion on a white board or flip chart.

Objective 3; Activity #5

Ask mentors to revise the draft compact they created in the *Establishing Expectations* session to include more specifics about professional development expectations.

Objective 4; Activity #6

Have mentors use the revised expectations compact created in Activity #5 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 2; Case #2: *Life Changes*

Your mentee had been productive with manuscripts and pilot grants, however, over the last year his (or her) mother was diagnosed with and recently died from pancreatic cancer. Prior to her diagnosis and illness, his (or her) mother provided substantial support for the mentee's family including childcare, cooking, and general support. This life event has put the mentee's productivity on a slower course, and your mentee needs support to complete a pilot project for future funding from the NIH. What is your advice?

Adapted from the University of California, San Francisco Mentor Development Program. Accessed on 5/14/10 at <http://ctsi.ucsf.edu/training/mdp-cases>

Objective 2; Case #3

Dr. Salander is a 32-year-old Assistant Professor on the tenure track who joined the faculty five years ago and became a KL2 scholar two years ago. Dr. Salander's wife is expecting their first child and he would like to request a three-month parental leave. However, Dr. Salander 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 when they were coming up. Additionally, Dr. Salander has heard a rumor that his mentor is considering mentoring a new K-Scholar this spring. Dr. Salander has heard that this new scholar is a real "go-getter" working 70-80 hours a week. Dr. Salander fears this new scholar will make him look as if he is not serious about his research career.

Adapted from the University of California, San Francisco Mentor Development Program. Accessed on 5/14/10 at <http://ctsi.ucsf.edu/training/mdp-cases>

References on the Importance and Impact of Good Work Life Balance

Below are listed a few articles on the topic of work life and work family balance. It is not intended to be an extensive review but merely gives some clues about directions the literature has taken.

Barnett, R. C. & Hyde, J. S. (2001). Women, men, work, and family: An expansionist theory. *American Psychologist, 56, 781-796.*

“The lives of women and men, the relationships that they establish, and their work have changed dramatically in the past 50 years, but the dominant theories driving research in these areas have not. In this article, the authors argue that the facts underlying the assumptions of the classical theories of gender and multiple roles have changed so radically as to make the theories obsolete. Moreover, a large body of empirical data fails to support the predictions flowing from these theories. Yet the development of new theory for guiding research and clinical practice has not kept pace. The authors attempt to fill this theoretical gap by reviewing the research literature and articulating an expansionist theory of gender, work, and family that includes four empirically derived and empirically testable principles better matched to today's realities.”

Chen, Z., Powell, G. N., & Greenhaus, J. H. (2009). Work-to-family conflict, positive spillover, and boundary management: a person-environment fit approach. *Journal of Vocational Behavior, 74, 82-93.*

“This study adopted a person-environment fit approach to examine whether greater congruence between employees' preferences for segmenting their work domain from their family domain (i.e., keeping work matters at work) and what their employers' work environment allowed would be associated with lower work-to-family conflict and higher work-to-family positive spillover. Different facets of work-to-family conflict (time-based and strain-based) and positive spillover (affective and instrumental) were examined. According to latent congruence modeling of survey data from 528 management employees, congruence was negatively related to both time-based and strain-based work-to-family conflict and positively related to work-to-family instrumental positive spillover as expected. However, contrary to expectations, congruence was negatively related to work-to-family affective positive spillover. Implications for how boundary management processes may affect both positive and negative experiences of the work–family interface are discussed.”

Grzywacz, J. G. & Carlson, D. S. (2007). Conceptualizing work family balance: Implications for Practice and Research. *Advances in Developing Human Resources, 9, 455-471.*

“The goal of this article is to develop a better conceptual understanding of work-family balance. Work-family balance is defined as accomplishment of role-related expectations that are negotiated and shared between an individual and his or her role-related partners in the work and family domains. This article elaborates on how this definition of work-family balance addresses limitations of previous conceptualizations and describes areas for human resource development research and implications for using work-family balance strategically in management practice.”

van Steenbergen, E. F., & Ellemers, N. (2009). Is managing the work-family interface worthwhile? Benefits for employee health and performance. *Journal of Organizational Behavior, 30, 617-642.*

“This study seeks to determine a relationship between subjective observations of work-family conflict and objective measures of employees' health and well-being. Through a cross-sectional study and a longitudinal study, researchers found that work-family facilitation predicted better health as measured

in terms of cholesterol level, body mass index, and physical stamina. Conversely, they found that conflict experiences generally led to unhealthier levels of these indicators.”

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“Professor Mina Westman, the head of Organizational Behavior Program at the Tel Aviv is a leading international expert on the crossover of emotions and experiences in the family and the workplace. In this interview with Paula Brough and Thomas Kalliath (guest editors), Professor Westman clarifies the nature of two related constructs: Work-life balance and crossover. Work-life balance is the perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities. Crossover focuses on how stress experienced by the individual influences strain experienced by the individual's spouse or team member. In this expert commentary, Professor Westman discusses the philosophical underpinnings of work-life balance, the significance of crossover of emotions and experiences for organizations and individuals, current advances in the field and sets out the new directions for this research. Copyright © 2009 John Wiley & Sons, Ltd.”

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The Obama administration held a forum on workplace flexibility (first link). The transcript of the meeting highlights changes in American society over the past half century, and the consequent increased need for workforce flexibility. Elements of this flexibility include when, where, or how much one works (including time off after childbirth or other life events)(second link).

(<http://www.whitehouse.gov/photos-and-video/video/forum-workplace-flexibility-opening-session>)
“[Work-Life Balance and the Economics of Workplace Flexibility \(pdf\)](http://www.whitehouse.gov/blog/2010/03/31/economics-workplace-flexibility)”
<http://www.whitehouse.gov/blog/2010/03/31/economics-workplace-flexibility>

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Articulating Your Mentoring Philosophy and Plan

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 behavioral or philosophical changes they intend to make across the mentoring competencies
3. Articulate an approach for working with new mentees in the future

Overview of Activities for the Mentoring Philosophy and Plan: Please note that only core activities are included for this final training session.

	Learning Objectives	Core Activities
1	Reflect on the mentor-training experience	Mentors engage in a open discussion of the knowledge and skills they have learned from the mentor-training sessions (Activity #1)
2	Reflect on behavioral or philosophical changes across the mentoring competencies	Mentors reflect on each of the mentoring competencies and write about their mentoring practices before and after the mentor-training sessions (Activity #2)
3	Articulate an approach for working with new mentees in the future	Mentors discuss approaches for working with a new mentee (Activity #3)

**Recommended Session for
Articulating Your Mentoring Philosophy and Plan
(30 minutes)**

❖ **Materials Needed for the Session:**

- Table tents and markers
- Chalkboard, whiteboard, or flip chart
- Handouts:
 - Copies of the competency reflection handout

❖ **Objective 1: Reflect on the mentor-training experience (10 min)**

- **ACTIVITY:** Group Discussion of Lessons Learned from Mentor Training
 - **ASK:** Please share with the group one or two ideas that stand out from the mentor-training sessions. These can include lessons learned, ideas that did or did not resonate with you, etc. Once everyone has a chance to share, we can share additional comments.
 - You may want to record the ideas generated in this discussion on a white board or flip chart.

❖ **Objective 2: Reflect on behavioral or philosophical changes across the mentoring competencies (10 min)**

- **ACTIVITY:** Individual Written Reflection Across the Competencies (10 min)
 - Have each participant individually complete the Mentoring Competencies Worksheet.
 - If there is not enough time to complete the writing activity, they may finish later.

❖ **Objective 3: Articulate an approach for working with new mentees in the future (10 min)**

- **ACTIVITY:** Discussion of ways to begin a new mentoring relationship
 - **TELL:** You will soon begin formally mentoring a new junior faculty member in your department. The two of you have talked by phone several times over the past year to discuss project ideas and you have met a few times since her arrival at your institution.
 - **DISCUSS (8 min)** in a large group. You may want to record the ideas generated in this discussion on a white board or flip chart. Guide the discussion using the following questions:
 1. Specifically, what steps would you take to prepare for meeting with the new mentee in three weeks?
 2. What will you do before the mentee arrives?
 3. What will you do within the first month of the mentee's arrival?
 4. What do you think is the most important thing you can do to start this new mentoring relationship off on the right foot?

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 Diversity		
Fostering Independence		
Promoting Professional Development		