Building a Robust Culture of Research Mentor and Mentee Training on Your Campus

Council of Graduate Schools Summer Workshop
Denver, CO July 11, 2017

Presented by:

Ernest L. Brothers, Associate Dean, Graduate School, The University of Tennessee, Knoxville
Jeffrey Engler, Council of Graduate Schools, Dean-In-Residence
Melissa McDaniels, Assistant Dean, Michigan State University
Christine Pfund, Associate Scientist, University of Wisconsin-Madison
Our Learning Goals Today:

1. Identify Key Concepts, Definitions and Ideas.

2. Describe the high quality and inclusive research mentoring important to Graduate Deans.

3. Your turn: Identify the current components of research and mentee training on your home campuses.

4. Identify open-access resources to support institution-led implementation of research mentor and mentee training.

5. Your turn. Develop a plan for building your campus capacity to support robust research mentor and mentee training.
Mentoring and Mentoring Relationships

This section of our presentation will discuss:

- Faculty Mentoring
- Mentoring vs. Advising
- Defining Mentoring
- Formal Mentoring vs. Informal Mentoring
- Mentoring Relationship Phases
Introduction

Graduate students are often challenged with transitioning into their individual programs academically, culturally, and socially.

"Assumptions seem to be made that graduate students are mature enough and receive enough guidance through advisory systems to achieve success" (Mullen, 2006, p. ix)
Faculty Mentoring

"The cultivation of developmental or mentoring relationships between graduate students and their professors is a critical factor in determining the successful completion of graduate programs" (Davidson & Foster-Johnson, 2001, p. 549).

"The extent and nature of graduate students’ interactions with faculty members are critical means by which they become integrated into departmental communities" (Herzig, 2004, p. 178).

"Students who strive to understand the graduate school and faculty cultures will have greater leverage for 'decoding' its values and systems" (Mullen, 2006, p. 33).
Mentoring vs. Advising

"It is expected at the graduate level, especially for doctoral students, that effective mentoring relationships flourish between graduate students and their major professors/advisors" (Thomas, Willis, & Davis, 2007, p. 178).

“Genuine mentoring involves a far deeper relationship with a student than is the role of advising the student” (Schnaiberg, 2005, p. 30).

"While doctoral students typically work with an advisor during the dissertation process, a mentoring relationship provides personal and professional support that extends beyond the traditional advising affiliation" (Holley & Caldwell, 2011, p. 244).
Defining Mentoring

"Mentoring often involves career socialization, inspiration and belief in each other, and promoting excellence and passion for work through guidance, protection, support, and networking" (Thomas et. al, 2007, p. 179)

“Mentoring is a dynamic reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (protégé) aimed at promoting the career development of both” (Healy, 1997, p. 10).
Formal and Informal Mentoring

Formal mentoring usually entails a graduate student being assigned or matched with a faculty member.

Informal mentoring is typically unstructured, and the “mentor and protégé meet as necessary over the course of the relationship” (Davidson & Foster-Johnson, 2001, p. 551).
Elements of a Formal Mentoring System

- Assignment of a faculty mentor.
- Assignment of a peer or student advisor.
- Formally established student or peer networks.
- Academic assistance workshops.
- Computer skills workshops and assistance.
- Research, writing, and professional publication guidance.
- Social activities and programming.
- Provision of financial assistance.
- Orientation or welcome programs.
- Career decision-making and planning workshops.

Source: Mullens, 2006, p. 81
Mentoring Relationship Phases

**Initiation Phase** - The relationship is first started.

**Cultivation Phase** - "The positive expectations that emerge during the initiation phase are continuously tested against reality."

**Separation Phase** - The relationship is substantially altered either emotionally or structurally.

**Redefinition Phase** - "Both individuals continue to have some contact on an informal basis in order to continue the mutual support created in earlier years."

Mentoring Relationships

- The basis and purpose of the relationship is the guiding, advising, and supporting of the protege’s growth.
- There is caring, mutual respect, trust, and regard in both parties.
- There is a transfer and sharing of information, tips, and expertise in the process of mentoring.
- The mentor helps the protege learn and integrate into a new role or stage of personal, academic, or professional development. (Chan, 2010, p. 1)
Optimizing Mentoring Relationships: The National Landscape
A Mentored Research Experience and Strong Mentorship has been linked to:

- **Enhanced science identity, sense of belonging and self-efficacy** (Palepu et al., 1998; Garman et al., 2001; Paglis et al., 2006; Lopatto, 2007; Bland et al., 2009; Feldman et al., 2010; Cho et al., 2011; Chemers et al., 2011; Thiry and Laursen, 2011; Byars-Winston et al., 2015)

- **Persistence** (Gloria et al., 2001; Solorzano 1993; McGee and Keller, 2007; Sambunjak et al., 2010; Williams et al., 2015; Bordes-Edgar et al., 2011; Campbell and Campbell, 1997)

- **Research productivity** (Steiner and Lanphear, 2002; 2007; Wingard et al., 2004)

- **Higher career satisfaction** (Schapira et al., 1992; Beech et al., 2013)

- **Enhanced recruitment of URMs** (Hathaway et al., 2002; Nagda et al., 1998).
The Uneven Mentoring Landscape

- White investigators significantly more likely than Black and Hispanic investigators to win R01 awards; minority investigators indicate that inadequate mentoring posed obstacles to obtaining funding (Ginther et al., 2011)
- Science faculty rated male applicant as more competent than identical female applicant; offered male ~ $4,000 more in salary, more career mentoring than to the female (Moss-Racussin et al., 2012)
- URMs and White women’s mentorship requests more ignored than those by White men (Milkman et al., 2014)
- Male biologists less likely to hire and train women in their laboratories (Sheltzer & Smith, 2014).
- URMs typically receive less mentoring than their non-minority peers (Thomas et al., 2001; Helm et al., 2000; Morzinski et al., 2002).
A National Focus on Mentoring

**National Science Foundation (NSF)**
- Post-doctoral mentoring plans
- Undergraduate research AND mentoring programs
- AAAS/ PASEMEN STEM Mentoring 2030 Meeting

**National Academies of Science**
- New Report on Mentored Undergraduate Research Experiences
- Participatory Workshop on Effective Mentoring in STEMM

**Sloan Foundation**
- University Centers of Mentoring Excellence

**HHMI**
- Mentor and mentee training program for the Gilliam Scholar Programs

**National Institutes of Health (NIH)**
- Mentored K awards
- Individual development plans (IDPs)
- National Research Mentoring Network (NRMN)
Defining Mentoring

A collaborative learning relationship that proceeds through purposeful stages over time and has the primary goal of helping mentees acquire the essential competencies needed for success in their chosen career.

It includes using one’s own experience to guide another through an experience that requires BOTH personal and intellectual growth and development.

Applies to research mentoring, career coaching, peer mentoring, virtual mentoring, and in some cases advising.

Pfund et al, AIDS and Behavior, 2016; McGee, AIDS and Behavior, 2016
Attributes for Effective Research Mentoring Relationships

**RESEARCH SKILLS**
- Developing disciplinary research skills
- Teaching and Learning disciplinary knowledge
- Developing technical skills
- Accurately assessing mentees’ understanding of disciplinary knowledge and skills
- Valuing and practicing ethical behavior and responsible conduct of research

**PSYCHOSOCIAL SKILLS**
- Providing motivation
- Developing mentee career self-efficacy
- Developing mentee research self-efficacy
- Developing science identity
- Developing a sense of belonging

**SPONSORSHIP SKILLS**
- Fostering mentees’ independence
- Promoting professional development
- Establishing and fostering mentee professional networks
- Actively advocating on behalf of mentees

**INTERPERSONAL SKILLS**
- Listening actively
- Aligning mentor and mentee expectations
- Building trusting relationships/honesty

**DIVERSITY/CULTURALLY-FOCUSED SKILLS**
- Advancing equity and inclusion
- Being culturally responsive
- Reducing the impact of bias
- Reducing the impact of stereotype threat
Who Does the Mentoring?
Cultural Diversity Factors

- Gender, race, and ethnicity relate to how mentees perceive their mentored research experience, what they value in a research mentor, and their self-perceptions (Byars-Winston et al., 2010; Blake-Beard et al., 2011; Carlone & Johnson, 2007; Hurtado et al., 2009; Ishiyama, 2007; Johnson et al., 2011; Laursen et al., 2010).

- Cultural diversity is important in all aspects of human life, including scientific training. Mentored research experiences are the foundation of scientific training, and therefore, warrant further investigation into how cultural diversity is understood, experienced, and responded to by those involved in these experiences (*Byars-Winston, Branchaw, Pfund, Leveritt, and Newton,, 2015*)
Cultural Context of Mentoring

Cross cultural mentoring may be defined as a mentoring process whereby the mentor establishes a relationship with the protégé from a personal, cultural, sociopolitical, and historical context (Alvarez, Blume, Cervantes, & Thomas, 2009).

Ignoring cultural diversity in mentoring relationships can lead to miscommunication, privileging dominant cultural norms, mismatched expectations due to differing value orientations, and conflicts in working styles (Brown et al., 2009)
Mentor and Mentee Views on Addressing Cultural Diversity in Research Mentoring Relationships

Results compare Yes responses with those responding No or not indicating an opinion.

Resources for Institution-Level Implementation of Research Mentor and Mentee Training
Where can people find you?
Mapping Initiatives on Your Campus

Get into dyads or triads.

For 10 minutes:

- Share one example from each campus focused upon either ...
- Efforts on your campus to improve the experiences of graduate students and postdocs as MENTEES
- Efforts on your campus to improve the experiences of graduate students and postdocs as MENTORS
Mapping Initiatives on Your Campus

Now that you have shared one example ...

• Use the mentoring map (handout) in front of you to identify and critically assess some of the key initiatives that support the optimization of mentoring relationships on your campus.

• First, two examples ...
<table>
<thead>
<tr>
<th>INITIATIVE</th>
<th>AUDIENCE/TARGET of INITIATIVE</th>
<th>DISCIPLINARY FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. one-day research mentor training</td>
<td>1. graduate students &amp; postdocs who will be mentoring undergraduates in the summer</td>
<td>1. open to all, but most often STEM and social science</td>
</tr>
<tr>
<td>3.</td>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>4.</td>
<td>3.</td>
<td>3.</td>
</tr>
<tr>
<td>LEAD UNIT(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Graduate School &amp; Postdoc Office</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LEAD UNIT(s)**

1. Graduate School & Postdoc Office
2. 
3. 
4. 

**INITIATIVE**

1. one-day research mentor training
2. 
3. 
4. 

**AUDIENCE/TARGET of INITIATIVE**

1. graduate students & postdocs who will be mentoring undergraduates in the summer
2. 
3. 

**DISCIPLINARY FOCUS**

1. open to all, but most often STEM and social science
2. 
3. 
4. 

**LEAD UNIT(s)**

1. Graduate School & Postdoc Office
2. 
3. 
4. 

**STRENGTHS**

1. research mentor training curriculum that has been validated through

**WEAKNESSES**

1. held prior to the beginning of mentoring undergraduates as mentors

**OPPORTUNITIES**

1. possibility for follow-up during the summer of the program
<table>
<thead>
<tr>
<th>INITIATIVE</th>
<th>AUDIENCE/TARGET of INITIATIVE</th>
<th>DISCIPLINARY FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Career Success: Working with Graduate Students and Postdocs at MSU</td>
<td>1. Graduate program directors and/or faculty who mentor graduate students in research</td>
<td>1. ALL</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td>4.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEAD UNIT(s)</th>
<th>RESOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Graduate School &amp; Academic Advancement Network (faculty development)</td>
<td>1. integrated into presenter and attendees work responsibilities; $$ for materials and lunch</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
</tr>
<tr>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EFFORTS ON YOUR CAMPUS TO IMPROVE GRADUATE STUDENT / POSTDOC EXPERIENCES AS MENTEES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
<th>OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. peer (faculty) – led; connected to</td>
<td>1. broad disciplinary draw reduces</td>
<td>1. consider having follow-up workshops</td>
</tr>
<tr>
<td>2.</td>
<td>2.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>3.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>4.</td>
<td></td>
</tr>
</tbody>
</table>
Mapping Initiatives on Your Campus

Now that you have shared one example ...

- Use the mentoring map (handout) in front of you to identify and critically assess some of the key initiatives that support the optimization of mentoring relationships on your campus.

- Spend 10 minutes mapping existing programs on your campus.
Mapping Initiatives on Your Campus

- The Graduate School is only one place that mentoring initiatives are started on your campus.
- Solicit feedback from other schools, colleges, offices and departments to build a more robust picture of what already exists.
- This will position you well to implement any new initiatives moving forward.
Resources

Evidence-based resources exist to support the optimization...
Evidence-based resources exist to support the optimization of research mentoring relationships

...these are open-access and ready to be used by campuses today!
Over the past decade, many organizations have made it possible for mentor and mentee training curricula to be developed and tested.
Mentor Training Curriculum

Key elements of mentor training:

- Process-based using case studies and group problem solving
- Aimed at awareness-raising and reflection
- Provides a confidential and brave forum to share the collective experience of mentors across a range of experiences
- Distribute and adapt resources to improve mentoring
Mentor Training Curriculum: Standardized Competencies

- Aligning expectations
- Promoting professional development
- Maintaining effective communication
- Addressing equity and inclusion
- Assessing understanding
- Fostering independence
- Cultivating ethical behavior
- With more in development!
Mentor Training Curriculum Adaptations for Career Stages & Disciplines
Mentee Training Curriculum

Research Skills
- 3-Minute Research Story
- Ethics Case: Credit where Credit is Due
- Mini-Grant Proposal

Interpersonal Skills
- Finding a Research Mentor
- Aligning Mentor – Trainee Expectations
- Case Studies: Sticky Situations

Cultural Awareness and Skills
- Storytelling/Counter-storytelling
- Stereotype threat

Research Attitudes and Beliefs
- Awkward/Unnecessary Mentor
- Case Study
- Steps to Researcher Independence
- The Power of Social Persuasion
- (Self-Efficacy)

Professional & Career Development Skills
- Research Careers
- The Next Step in Your Career
- “Whatever you do, don’t choose this lab” case study (rotation advice)
National Mentoring Research Network
www.nrmnet.net

Overarching Goal: To significantly contribute to national efforts to enhance the size, quality, diversity and productivity of the biomedical research workforce trained to improve human health through mentoring activities.

The National Research Mentoring Network (NRMN) is supported by the NIH (NIH U54GM119023)
National Mentoring Research Network

• Increase access to mentoring across all career stages through **matching and linking**

• Improve mentoring relationships and outcomes through **training** for research mentors, grantwriting coaches, career coaches & mentees

• Increase access to research resources & career development opportunities through **referring**

• Increase awareness of the value of career mentoring across the nation through **promoting**
Improve mentoring relationships and outcomes through TRAINING

- Face-to-face mentor training workshops
- Face-to-face mentee training workshops
- Self-paced online training
- Synchronous online training
- Train-the-trainer workshops
- NRMN Master Facilitators
- Grant-writing coaching groups

https://nrmnet.net/mentorship-training-programs/
Increase access to mentoring via matching & linking (NRMNet)

NRMN Applications

LINKING

MATCHING
<table>
<thead>
<tr>
<th>NRMN’s Programs by Career Stage</th>
</tr>
</thead>
</table>

**Program statuses as of 2017**

### MATCHING / LINKING

- Guided Virtual Mentorships
- MyNRMN
- Near Peer Mentoring
- Virtual Collaboratory

### TRAINING

- Career Coaching
- Facilitator Training
- Grant Writing Coaching Groups
- Mentor Certifications
- Research Mentee Training
- Research Mentor Training
- Shark Tank
- Institutional Mentoring Academy Planning

### REFERRING

- Career Development Webinars
- NRMNNet Portal

### PROMOTING

- NRMN Ambassadors

**Legend:**
- [ ] Program Available
- [ ] Program Under Development
You don't need to wait to be trained or send your colleagues to training!
Complete research mentor training curricula (www.cimerproject.org)
Training Materials: Build-Your-Own Research Mentor Training Curricula

http://cimerproject.org/#/customCurricula
Planning Resource: Scheduling

http://cimerproject.org/#/curricula/planning

Mentor

Scheduling

Our mentor training is designed to be delivered in 8 hours. Former participants have reported that scheduling sessions every other week over approximately two months is ideal, because it allows time for reflection and practice.

Alternatively, you may wish to implement a shorter workshop. In this case, we recommend that you focus on just one or two topics. You can customize your own curriculum using our collection of materials.

Sample Schedule #1 (recommended)

<table>
<thead>
<tr>
<th>Session</th>
<th>Length</th>
<th>Topics</th>
</tr>
</thead>
</table>
| 1       | 2 hours| Introduction to Mentor Training  
obbies Eyeic Eeicommunicatc  
Introducing Eeicommunicatc  
Mentoring Eeicommunicatc  |
| 2       | 2 hours| Aligning Expectations  
Assessing Understanding |
| 3       | 2 hours| Addressing Equity and Inclusion  
Fostering Independence |
| 4       | 2 hours| Promoting Professional Development  
Articulating Your Mentoring Philosophy and Plan |
Evaluation Resource: Mentoring Competency Assessment (MCA)

http://cimerproject.org/#/evaluation/mentor-training
Online self-study for mentors of grads, postdocs, and faculty

http://z.umn.edu/OptimizingMentoring
Resources for Mentoring Graduate Students

Mentoring students for the full range of professional careers begins with early discussions about possibilities and paths. Resources here identify issues to consider and approaches to addressing them from the beginning of students' graduate programs through the dissertation. There are also many resources in the student section you will find useful as you mentor students.

https://sites.lsa.umich.edu/humanities-phd-proj/facultyresources/mentoring/
These are resources we are most familiar with!
Please e-mail us yours at
cgsmentoringsw17@gmail.com and we will add
to the shared web space.
Implementation
Implementation Planning (handout)

• If you were going to focus upon one type of mentoring at your institution, what would be your priority?
• Would you want to target all disciplines or just a few?
• What one or two things do you hope to tell your Provost you accomplished in the next 6 months?
• What is limiting your institution’s ability to optimize mentoring relationships?
• What resources (included but not limited to money) do you need to move forward?
• What partnerships do you need to develop?

E-mail for resources and maps - cgsmentoringsw17@gmail.com

Please share your contact information: http://bit.ly/CGS_ContactInfo
Implementation Planning

Start filling out your plans

When you hear the bell, turn to your neighbor(s) and discuss your initial plans

Larger group debrief
THANK YOU FOR YOUR PARTICIPATION
For Access to Resources and Ongoing Conversation

https://sites.google.com/site/cgssu2017mentoring/