

Learn to Become a More Effective Research Mentor

New Faculty Workshop, 25 JUN 2015

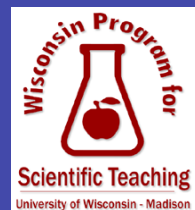
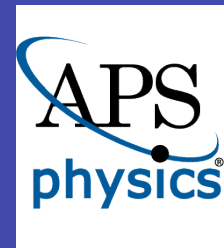
Eric Hooper

University of Wisconsin-Madison

(Astronomy Department & Physics Learning Center)

WIYN Observatory, Kitt Peak, Arizona

+ many other contributors, developers, & funders



Goals for this Session

- Actively think about how to mentor students.
- Talk with colleagues.
- Participate in an abbreviated version of a mentor training seminar.
- Know where to go for more materials.
- Relax a bit after an intense week and chit chat (in a guided manner) with your colleagues.

Plan for this Session

- Introduction, motivation, and overview.
- Three discussion activities.
 1. Share your tales of mentoring, the good, the bad, the ugly.
 2. What makes a good research project?
 3. Case study.
- Wrap up: how to use the mentor training curriculum.

Interactive book of the full mentoring seminar available:
researchmentortraining.org

Benefits of Mentoring Mindfully

- Students and junior colleagues more successful.
- For undergraduates, enhance the desire to pursue an advanced degree.
- Recruitment and retention of students to your department or program.
- Less stress (an ounce of prevention...).
- Better funding proposals.

NSF and Mentoring Postdocs

- Part of broader impacts.
- Supplementary document.
- Up to 1 page description of the mentoring plan for postdocs at all collaborative institutions on the proposal.
- See NSF Grant Proposal Guide II.C.2.j (2015 version): www.nsf.gov/pubs/policydocs/pappguide/nsf15001/gpg_2.jsp#IIC2j

What do Experienced Mentors Say?

- Learned by making mistakes
- Learned from experience
- Learned from watching my own mentor make mistakes
- Learned from watching other mentors make mistakes
- Learned from making mistakes
-and still learning from making mistakes.

Can Mentoring be Taught?

- Can you teach someone to be a researcher?
- Can you teach someone to write?
- Can you teach someone to teach?

Each of these skills is a combination of passion, intuition, experience, and knowledge.

The UW-Madison Mentoring Seminar

- Eight to nine-week (1 hour meeting per week) seminar developed using an iterative approach of design, testing, evaluation, and revision.
- Discussion, outside activities, readings.
- Currently optimized for mentoring researchers, undergraduates and up, but has been ported to other purposes.
- Originally used in biology, now adapted across STEM fields (NSF grant 0717731; PI Christine Pfund).

Entering Mentoring

A Seminar to Train
a New Generation of Scientists



THE WISCONSIN PROGRAM FOR SCIENTIFIC TEACHING
• Supported by the Howard Hughes Medical Institute Professorial Program •

Jo Handelsman • Christine Pfund • Sarah Miller Lauffer • Christine Pribben

Seminar Topics:

- Establishing a good relationship with your mentee
- Learning to Communicate
- Establishing Expectations
- Understanding
- Addressing & benefiting from Diversity
- Ethics
- Independence
- Developing a Mentoring Philosophy

Multidisciplinary interactive book available at:
researchmentortraining.org

Discuss your Mentoring Experiences

- As mentor, or mentee.
- Good or bad, or elements of each. Why? How did you know?
- Discuss from a variety of perspectives: mentor; mentee; a colleague; supervisor of a mentor.
- Specific event/situation; more general impressions.
- What have been some of your biggest mentoring challenges?
- Does everyone around you agree on the good, the bad, and the ugly of the situation?
- What and how did you or they learn about mentoring? What can be generalized? Can there be a step-by-step mentoring textbook?

What Constitutes a Good Research Project?

- For an undergraduate student?
- For a graduate student?
- For a postdoctoral researcher?

... and how do you determine this?

Understanding: A 'Resourceful' Mentee

Your mentee is enthusiastic and seems confident. Every day after working with the instrument, you ask how it went, and he says “good.” You occasionally glance over his log book and everything seems fine.

After some weeks, you realize that the data seem odd. Finally you realize that the instrument was not taking data over the full operational range. You ask him why he didn't record data over the full range and he said the power supply fuse blew every time he tried to take data at the higher ranges. “I looked for a different power supply, but I couldn't find one,” he told you, “so I just stopped taking data a point below the one that blew the fuse.” You're frustrated because you could have had the instrument repaired had you known.

Some Guiding Questions

- Has something like this ever happened to you as a mentor or a mentee?
- How do you know if your mentee understands something? How do you assess this without sounding condescending?
- How do you get mentees to assess their own understanding?
- How do you balance independence with understanding?
- How can you identify the difference between a junior researcher who is not getting something vs. one who is not trying enough?

How to Use the Mentor Training Curriculum

- www.researchmentortraining.org
- Free registration and access to all materials.
- Shopping cart style.
- You can select from a wide variety of case studies and activities. There are materials for physics and astrophysics, but you might also find good items in other disciplines.
- Or get everything precompiled (our choices for each section).



[HOME](#) • [INTRODUCTION](#) • [GETTING STARTED](#) • [CURRICULUM OPTIONS](#) • [ABOUT US](#) • [CONTRIBUTE TO THE SITE](#)
[CREATE ACCOUNT](#) • [LOGIN](#)

Welcome to Mentor Training

Your ability to mentor well can have a huge impact on the overall experience and the productivity of both you and your mentee. While many efforts have focused on helping prospective and new faculty learn skills in grant writing, lab management, and classroom teaching, mentoring has been conspicuously absent. To address this need, we have developed this website which can help you to become a more effective mentor, and more importantly, can help you develop a seminar or workshop to train other research mentors.

Individuals who participate in research mentor training can:

- Improve the efficiency and effectiveness in mentoring
- Learn to effectively establish mentor-mentee expectations
- Develop strategies for helping mentees build confidence, independence, creativity, and communication skills
- Improve cultural competency in mentoring
- Develop a mentoring philosophy


We hope you find the materials on this website useful and easily adaptable as you and your colleagues work to become more efficient and effective mentors!

"Mentor training is a wonderful opportunity to formally learn and reflect on mentoring. The mentors in my group will no doubt mentor many other students in their careers. I believe this seminar will help them to do so more effectively."

Research Mentor Training is housed within the Wisconsin Center for Education Research at the School of Education, University of Wisconsin-Madison.
Copyright ©2008, The Board of Regents of the University of Wisconsin System

Case Study:
Understanding & Communication

You have just explained a new approach to your mentee. As you were explaining, they nodded the entire time as if they understood every word you were saying. When you were finished with your explanation, you asked them if they had any questions. They said "no." Just to make sure, you asked them if everything was clear. They said "yes." Three days later you ask the mentee how their work is progressing using the new approach and they say they haven't started because they do not understand the approach.



www.researchmentortraining.org

“Can I Run a Mentor Training Seminar?”

- Yes you can.
- People with a range of ages and professional background have successfully facilitated seminars.
- It helps to have experience as a mentee in your setting.
- The primary goal is to facilitate rich discussions.
- We provide the materials (cases, guidelines, questions, strategies) via a website, researchmentortraining.org.
- Helps if participants are actively mentoring.

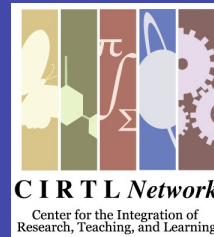
Research *Mentee* Training

- 2-semester seminar for undergraduates that can be adapted for intensive workshops or summer research programs
- Instructional materials available in book form from W.H. Freeman.
- Lead author is Janet Branchaw (UW-Madison):
branchaw {at} wisc.edu



Thank you!

Thanks to participants & organizers from all of us:



– Best wishes,
Eric (ehooper {at} astro.wisc.edu)