CRA-W Early Career Advising/Supervising Students

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Research on Mentoring

Research shows that ***those who are mentored achieve greater career advancement and higher work satisfaction than those who are not mentored.***

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Did you know… that faculty are not taught how be a good mentor?

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Pre-QUIZ: TRUE or FALSE

1. There is no such thing as an ideal mentor.
2. Success depends on mentor & mentee.
3. Every research advisor is a mentor.
4. A role model is a mentor.
5. As a research advisor, I am the boss so my students should take my advice all the time.
6. Every student should be mentored in the same way.
7. There is no excuse for not having made any progress to report at a research meeting.
8. Thank goodness, there is a well established mentoring plan that will work for all students.
9. A good mentor is one who rewrites the student's paper so it gets published.

Imposter Syndrome

Everybody is ignorant,
only on different subjects.
Woodrow Wilson

www.impostersyndrome.com

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"**Focus on the students**, since **graduating great students means** you'll produce **great research**, while focusing on the research may or may not produce great students."

~ David Notkin

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What Should a Good Research Mentor do?

Teach/Train **THE STUDENT**

- Basic research skills
- Tactical planning
- Strategic planning

AND Foster **THEIR career**

A *PhD program is an* ***apprenticeship***.

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Mentor the Individual

Get to Know the Person

- background: context
- goals: long term/ short term
- strengths and weaknesses

Assess the Individual

- knowledge
- skills
- experience

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Giving and Receiving

Mentor	Mentee
Attention	Confidence, security
Advice from experience	Decision making
Information	Knowledge and skills
Encouragement	Self confidence
Opportunities	Professional reputation

Getting Started with a New Student

- Build trust
- Express commitment
- Set expectations (e.g., # times to meet, frequency of meetings)
- Set limits
- Create goals (in writing)

Every mentoring relationship has phases

What did you want (need) to know then?

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Mentoring Graduate Students

- Attention:
  - Weekly research meetings
  - Individual progress and goal-making
  - Annual review
- Advice:
  - Course selection
  - Professional skill building activities
  - Time management.
- Information:
  - Requirements,
  - Career choices
- Encouragement:
  - Praise successes
  - Challenge
- Opportunities:
  - Conferences
  - Reviewing
  - Teaching
  - Mentoring,
  - Internships
  - Service
  - Funding

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Some Important Discussion Topics with Students

Professional behavior

Ethical expectations

- Authorship, conflict of interest, duplicate submissions, resubmissions, etc.

Determining their goals

- E.g., gov't/industrial lab, teaching college, research university
- How to position themself to achieve their goals
- Matching their thesis to their goals

How to look for and find a job

Balancing life and career after graduation

…

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Managing Research Meetings

- Meet regularly – don't cancel meetings!
- Teach students to come prepared:
  - Written Agenda (even provide a day ahead!)
  - Work products to review/discuss
  - Organize/maintain their progress so far

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Managing Research Meetings

Have the student lead the meeting discussion:

- Review accomplishments
- Discuss problems/alternatives
  - Show explicit examples, data
- Review overall big picture
- Agree on next steps
  - Let STUDENT propose the next steps
  - Revise as necessary
  - Agree on goals for next meeting
- Student write up meeting notes and share

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Teach Students to Keep Records

- The big picture
- Meeting agendas and notes
- Progress, ideas, questions, concerns for next meeting agenda
- References to find and read
- Notes on readings
- Potential future directions to pursue (review and reorganize regularly)
- …

Have an online research space shared with advisor

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Teach Students to be Assertive as Mentees

- Discuss longer term goals and strategies
- Discuss their strengths and weaknesses
- Ask for information/resources
- Ask for specific training – elevator talk, reviews
- Ask to be nominated for awards
- Ask to go to conferences/workshops
- Ask for meetings when more needed

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Teach Students to be Assertive in Research Discussions

Develop their ideas and propose solutions

- If you disagree, try to understand why
- If they don't understand why, try to gather evidence to support their theory
- If it still looks promising, try again to present their ideas.
  - If you (adviser) still disagree, ask for advice on how to learn more or what they need to do to make a convincing case

Tell them …

they are ready to graduate when they start to win most of these arguments!

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Teach Students they Have Responsibilities Too

- Attention: SHOW UP with an open mind and respect
- Advice: LISTEN + FOLLOW as appropriate
- Information: LISTEN, LEARN, and USE
- Encouragement: LISTEN + SAVOR
- Opportunities: EXPLOIT

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Being a good mentor

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What do YOU look for in a Mentor?

- Interested in you
- Supportive
- Patient
- Knowledgeable
- Competent
- Accessible
- Respectful of privacy
- Empathetic
- Honest
- Compassionate

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What NOT TO DO as a Mentor

Be Inflexible (treat all the same)

Abuse your authority (students doing your work)

Be overbearing (dictating choices)

Do, don't overdo (too close)

Clone yourself (dependent)

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Barriers to GOOD Mentoring

- Not enough time
- Miscommunication
- Lack of knowledge about the individual
- Trust is not there – different agenda
- Unrealistic expectations

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Small Group Discussion: Strategies for Advising Problems

- Balancing training students & publishing for tenure
- Dealing with poor writing without completely rewriting the paper yourself
- Slow progress
- Focus on engineering and missing the research
- Low confidence/imposter syndrome
- Sloppy empirical work
- When & how to cut a student loose

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Take away message

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Extra Slides on Styles of Mentoring

Different Apprenticeships

Push them off a cliff and see if they land on their feet.

After they land, give a little redirection, and then give another big push.

Different Apprenticeships

Teach them how to rappel first:

- Start with a "relatively" well-defined task.
- Discuss the problems that arise and encourage them to think of solutions.
- Help direct their search for solutions.
- Revisit task and view from a larger perspective
- Widen the problem and repeat

Provide less guidance with each iteration.

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Different Apprenticeships

To the student, sometimes

"Teach to Rappel First"

feels like

"Pushing off a cliff"!

What to do then?

If they are stuck…

Have them break down the problem.

Ask if decomposition seems appropriate.

Agree on what to tackle next.

Repeat as necessary.

Divide and Conquer!

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