FINDING AN ADVISOR AND DEVELOPING AN EFFECTIVE WORKING RELATIONSHIP

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Who Am I

- Daughter, Sorority Sister, Researcher, Teacher, and Friend!
- Lover of Technology, reading , learning, music, food, movies, and much more!
- 4 degrees (3 in CS and 1 in Information Science)
- Research Interests: Authorship Attribution, Machine Learning, and Privacy.

SIOBAHN DAY

Dreams by Day.

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According to the dictionary

- Advisor
  - somebody who gives advice
  - somebody who advises students on academic matters such as course choices
- Mentor
  - somebody, usually more experienced, who provides advice and support to, and watches over and fosters the progress of, a less experienced person

Advisors

- Know the rules needed to successfully complete a graduate program (e.g., graduate program director)
  - Course obligations
  - Teaching obligations
  - Time limitations
- Provides a **map** to complete your degree

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Mentors

- Helps you **navigate a path** to your destination
  - May help you decide what that destination is
  - There are **many** different decisions
  - Helps prepare you to succeed in your career
- PhD program is basically an apprenticeship
  - Work closely with someone to learn the craft

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But, mentoring is not taught

- Some faculty are better at it than others
- One mentoring style might work for some students, but not others
  - Try to find a faculty mentor who has a style that works for you
  - Or, try to find an accommodation that works for you both

Where to find a mentor?

- Ideally, your faculty advisor is your primary mentor
- Also consider other faculty members who know your research area
  - On your thesis committee
  - Associated with your research group
  - In your department
  - In another department/university
- And if none of the above suffice, find a wise and supportive faculty member who is not in your research area

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What an Advisor/Mentor Should Do

- Teach you basic **skills**
  - How to write a paper, give a presentation, do experimental evaluation, …
  - Professional expectations
- Teach you **tactical** planning
  - How to frame a paper/presentation for a particular audience
  - Where to submit particular results
- Teach you **strategic** planning
  - What pubs are needed to get a job at a top research institution? What conferences and journals to focus on
  - What are the important research questions

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What an Advisor/Mentor Should Do

- **Help foster and promote your career**

  now and forever

  For example:

  - Letters of recommendations
  - Introductions
  - Nominations for awards, program committees,…

What to look for?

- Nicest (easiest) person on the faculty may not be the best mentor
  - Need to be knowledgeable, active, well-respected
  - Mentors need to give positive and negative (but constructive) feedback
- Most well-known, high-powered faculty member may not be the best mentor
    - Too busy
    - Too many students
- May need to balance:
  - Need for support (financial and career development)
  - Need to be well-trained
  - With research interests

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Beneficial to have more than one mentor

- May get alternative points of view
  - Ultimately, it is your career, so the choices are yours
    - BUT, your advisor has to sign-off on your thesis
- If in the same research group, can help mediate when there are disagreements or conflicts
  - E.g. Authorship, research directions
- If not in the same research group, can suggest alternative approaches for you to consider

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Lori Clarke on one slide

- BA Mathematics, University of Rochester
- PhD Computer Science, University of Colorado
- Faculty, University of Massachusetts Amherst, 40 years
  - 18 PhD students
  - Research: Software Engineering and now Medical Safety
- Currently faculty emerita, with a post retirement appointment

For fun:

- Traveling
- Tennis
- Hiking
- Skiing
- Family

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Selecting a faculty advisor

- In some departments, each faculty member admits students to specifically work with them
  - Can select the school knowing who your advisor is likely to be
  - But, if you do not get along or if you decide to change areas, it can be hard to change advisors
- In some departments, students are guaranteed support until they decide
  - May have to commit to a school without knowing who you will work with
- Some departments try to encourage an environment where it is “easy” to change advisors
  - But it is never easy (more on this later)

Before selecting a faculty mentor

- Talk to several potential faculty mentors
  - Even if they are not taking on new students, faculty don't mind being approached
- Talk to students who have worked with that faculty member
- Find out how a faculty member's former students have fared
- Consider funding consequences
  - Not all faculty have funds to support a new student
  - TAs or Fellowships may be available
- If possible, take classes from or do a project with that faculty member

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Getting students started doing research: 2 extremes

- 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
- Teach them how to rappel first
  - Start out 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 the task and view it from a larger perspective, widen the problem and repeat
    - provide less guidance with each iteration

2 extremes

- What seems like approach #2 to the faculty member, might seem like approach #1 to the student
  - If you are stuck, try to break the problem down into sub pieces
  - Ask if the decomposition seems appropriate and then agree on the sub piece to tackle next
  - Repeat as necessary
- Basically, turning approach #1 into approach #2
  - A well-known problem solving technique
    - **Divide and Conquer!**

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Meeting with your faculty advisor

- **Meet regularly!**
- **Bring work products to review**
- Review accomplishments since last meeting
  - **New** definitions, classifications, related work, understandings, progress on infrastructure, experiments, proposed solutions ….
- Discuss problems and alternatives
  - Show explicit examples

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Meeting with your faculty advisor (continued)

- Organize your progress so far
  - Major components of a problem
  - Current approaches
  - Issues that need to be addressed
  - Alternative research directions
  - Maintain as a powerpoint presentation
- Review it with your advisor
  - Provides something tangible to review
  - Helps expose misunderstandings/disagreements
- Consider this an evolving document

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Meeting with your faculty advisor (continued)

- Agree on what is to be accomplished next
  - Propose next steps
  - Revise accordingly
    - e.g., too ambitious, too limited, pursue some intermediate steps or totally new direction
  - Discuss goals for next meeting (or next few meetings)

Longer term planning

- Complement short term, **tactical** planning with periodic, longer term **strategic** planning
  - Discuss longer term goals and strategies for achieving those goals
- Review your overall progress
  - Ask if you are making adequate progress
  - Discuss your strengths and weaknesses
    - How can you build on your strengths
    - How can you address your weaknesses

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Keep an electronic notebook

- Progress to date
- Agreed on plans
- Questions for the meeting
- References to track down
- Potential future directions to pursue
  - (Future Research Ideas: review and reorganize regularly)

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Meeting with your faculty advisor: Be assertive

- Develop your ideas and propose solutions
  - If you advisor disagrees, try to understand why
  - If you don't understand why, try to gather evidence to support your theory
  - If it still looks promising, try again to present your ideas
    - If your advisor still disagrees, ask for advice on how to learn more or what you need to do to make a convincing case
- **You are ready to graduate when you start to win most of these arguments!**

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Lori Pollock in one Slide

Lori Pollock, Alumni Distinguished Professor, University of Delaware

- PhD University of Pittsburgh 1986
- Rice University 1986-1989
- University of Delaware 1990-present
- Sabbatical consulting: ABB Inc & Army Research Lab

- **Research** in Software Engineering,
- Optimizing Compilers, CS Education

- **Service**
- CRA-W
- CS10K Partner4CS in Delaware
- WeC4Communities
- Comp Thinking in University Gen Ed
- **For Fun**
- Outdoor activities, handcrafts, traveling

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Checklist of Conversations

- ✓ Courses
  - ✓ Balance breath and depth
  - ✓ Outstanding and poor teachers
- ✓ Guidance in finding promising research topic(s)
- ✓ How to conduct research
- ✓ How to review and evaluate the literature
- ✓ How to communicate with colleagues
  - ✓ 3 and 10 minute elevator talks

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Checklist continues…

- ✓ Prepping for presentations
  - ✓ Agree on outline first
  - ✓ Review slides
  - ✓ Practice talk(s)
- ✓ How to write-up results for a paper
  - ✓ Agree on outline first
- ✓ What to publish and where
- ✓ How to be successful in grants

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Checklist goes on…

- ✓ Professional behavior
- ✓ Ethical expectations
  - ✓ Authorship, conflict of interest, duplicate submissions, resubmissions, etc.
- ✓ Determining your career goals
  - ✓ E.g., gov't/industrial lab, teaching college, research university
  - ✓ How to position yourself to achieve your goals
  - ✓ Matching your thesis to your goals
- ✓ How to look for and find a job
- ✓ Balancing life and career after graduation
- ✓ …

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What if advisor-advisee relationship isn't working?

1) Encourage your advisor to be the kind of mentor you need
   - Ask for the support that you need. For example:
     - If asked to write a draft of a paper, first send an outline and ask for feedback
     - Initiate a discussion about career options
     - Ask for a meeting to discuss longer term goals and past progress
2) Stick with your advisor, but look for mentors elsewhere
   - Best if your thesis advisor is your mentor, but if that is not the case, find other mentors
   - Always preferable to have more than one mentor

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What if it (still) isn't working?

3) Have a meeting with your advisor to discuss the situation
   - Usually everyone realizes there is a problem
   - Agree on some alternative approaches
     - Set up a "measured mile"
       - Set **clear objectives** with a **timeline**
       - Agree on what each of you will do
       - Evaluate how it went

What if it (STILL) isn't working?

4) Jump ship
   - Easier to do if you have not made considerable progress on a topic
   - Talk to other faculty to find out what alternatives you have
     - Don't bad mouth your current advisor
       - "new" advisor will probably talk to your "old" advisor
     - E.g., not strongly interested in current research area; more interested in another research area; looking for a different approach to being advised
     - Check impact on funding
   - A fresh start: benefit from what you learned

What are your experiences?

- **Share with your neighbor a positive and negative experience you have had with your advisor or in searching for an advisor**
  - Describe what you did to make the situation better (or worse)
  - What do you wish you had done differently

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When is a student finished?

- One size does not fit all
- Accomplishments will impact
  - Advisor's letter of recommendation
  - Job choices

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Lifelong relationship

- "Advisor" for life
- Always available to help with problems
- Promote (former) student's career
  - Recommend for program committees, awards, workshops, etc.

Your job is to "train" your advisor to be a good mentor *FOR YOU*

And along the way, you will find that you have also been training yourself

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