Teaching and Mentoring Students

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Awesome responsibility and privilege

- **Important part of a professor’s life**
  - Teaching undergraduate courses
  - Teaching graduate courses
  - Mentoring undergraduates and graduate students

- **Both rewards and challenges – just like research**
  - **Rewards:** impact on another person’s life
  - **Challenges:**
    - Balancing teaching and research

- **Goal is to be excellent in both**
Teaching undergrad courses

- Upper level - usually in own research area
- Lower level (1st and 2nd yr) - could be large
  - Could be lab classes
- Assignment - don’t be shy (or impossible)
  - Ask for upper level courses in research area initially
- Try to teach the same course multiple times but not enough to get stale
Training to be a good teacher

- Few grad students trained as teachers
- University has opportunities to learn to teach – **take advantage**
  - Workshops
  - Video
  - Colleagues
  - Evaluations
    - Give one of your own half way through course
    - University typically has an evaluation at end
    - Take comments seriously and try to improve your teaching and course
Tips

- Be prepared/organized - takes time but worth it
- Provide a syllabus and stick/update it
- Be available during office hours
- Don’t brush questions off or be rude
- Try to use a text book
- Spell out policies the first day and document
  - Cheating, late homework, missing tests, incomplete, extensions, etc
- Use material from previous instantiations of course
- Be realistic – not graduate students; not you
Challenges

- Balancing research and teaching
  - Cannot get tenure based on teaching
  - But bad teaching can hurt you and students
  - Best researchers are good-great teachers

- Managing Teaching Assistants (TA)
  - Should ask for TA support
  - Use it wisely - hesitate to have them grade tests unless large class

- Problem students
  - Don’t show up in class
  - Argue grades - my policy “regrade entire test”
  - Grading - fair, honest but students are people
Teaching Graduate Courses

- Teach in area of expertise
- Way to attract graduate students and know how good they are
- Courses deeper and faster paced
- MUST be prepared
- Reputation depends to some extent on how well you teach graduate classes
- You will learn more than when you took courses
Mentoring Ph.D. students

- Most important component for successful research
- No training - Mentor like our advisors did (same as for parents)
  - Read resources
  - Think about how you would have liked to be mentored
Mentoring graduate students

- Research advisor
  - Basically interested in student only for research produced
- Mentor – research adviser plus professional development (maybe even personal)
  - Communication skills
    - Talks and papers
  - Networking
  - Career choices
  - Development into a professional – dress, behavior, speech, etc – but they are individuals
Tips

- Respond in a timely and reasonable way
- Meet regularly – individually and group
- Do not use excuse – too busy – priority
- Act as advocate
  - Awards, opportunities
- High expectations but not unrealistic
- They are not your employees
- Help build confidence
  - Encourage women and minorities
Challenges

- **Apprentice:** show and then let students do own work
  - Research, writing, thinking
- **Conflict between junior faculty and students**
  - Who gives talks, who get names first
- **Grad students not perfect – your job to train them**
  - Motivation and drive
  - Creativity
  - Work ethics
  - Helping them learn to write and speak
  - Sometimes it doesn't work – give them warning if not funding them
- Help students to develop independence
Mentoring undergraduates

- Fun to do – enthusiastic about research
- Can get publications – but it takes a well thought out project – mini proposal
- Good to work in group – 2 to 4 students
- Include them in your research meetings and group
- Work with graduate students but don’t exploit graduate student
Mentoring M.S. students

- Can get publications

- But, it takes a well thought out and developed project

- Sometimes work with Ph.D. students

- Try to encourage best students to go on for Ph.D.
Don't

- Get the reputation as a bad adviser
- Think the students have no life but research and work
- Exploit students – have them do all kinds of things not related to research
- Expect what you did
  - Cannot remember what you were like as a beginning graduate student
- Do remember they are people with their own personalities and life
Rewards of mentoring grad students

- Sense of accomplishment
- Can learn great deal from students -
  - Especially if want to move into new field
- Lifelong friends
- Best aspect about being a faculty member
- Proud of my student’s accomplishments - Harrold
- Enjoy - it is worth it.
Resources

- Adviser, Teacher, Role Model, Friend - On being a mentor to students in S & E”, NAS, NAE, IOM, National Academy Press, 1997
  - http://www.nap.edu/readingroom/mentor
- CRA-W Career Mentoring Workshops Booklet
  - Getting tenure, Building research career, Finding funding, Time management
  - http://www.cra.org/craw
- Research Student and Supervisor: An Approach to Good Supervisory Practice
  - Council of Graduate Schools, Washington, D.C.