

Advising Graduate Students

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What is the relationship of the M.S./Ph.D student to the advisor?

- A. Slave labor to get the advisor promoted
- B. Independent agent who delivers a research product the advisor evaluates
- C. Collaborator on a research project or projects
- D. Apprentice on all aspects of professional career (teaching, research, service, etc.)

As an advisor you should...

- ...answer student questions by saying “What do you think?”
- ...defend students from unfair and inappropriate questions, but not difficult ones, during oral exams
- ...beat students up when they practice for public presentations (much better in private than before a live audience).
- ...keep their research from going in completely hopeless directions, but not from going down any dead ends.
- ...understand that at least 2/3rds of their ideas will not work out.
- ...let students know what your standards are, and that being correct matters more than being published.

Tell your students they should...

- ...take notes during or after meetings with you, and echo a copy back to you.
- ...help write grant proposals, referee papers, teach and do some busy work (these are all great practice; look at them as professional enhancement opportunities).
- ...speak at professional conferences.
- ...eventually set the direction of the research (that is how we know that they are done).

Getting started is the hardest part

- Each student is different, do not count on them being like you.
- A little success goes a long way:
 - Start with fairly structured assignments
 - Let the student finish a result you almost have completed
 - Computational work builds intuition and a sense of accomplishment
 - Don't forget background reading

Writing

- Write early and often.
- Don't just mark up student writing; tell them *why* you want the changes and what you are trying to achieve.
 - Emphasize clarity first; style comes later
 - Have them read good writers (Whitt, Andradóttir, Fox)
- Write thesis as “k papers and a staple”

Grab Bag of Stuff I Believe

- Tell students to have a notebook for each research project.
- Date everything they write (including computer code).
- Let student be first author on their work.
- Take the time to practice talks with them.
- Take the time to introduce them to colleagues.

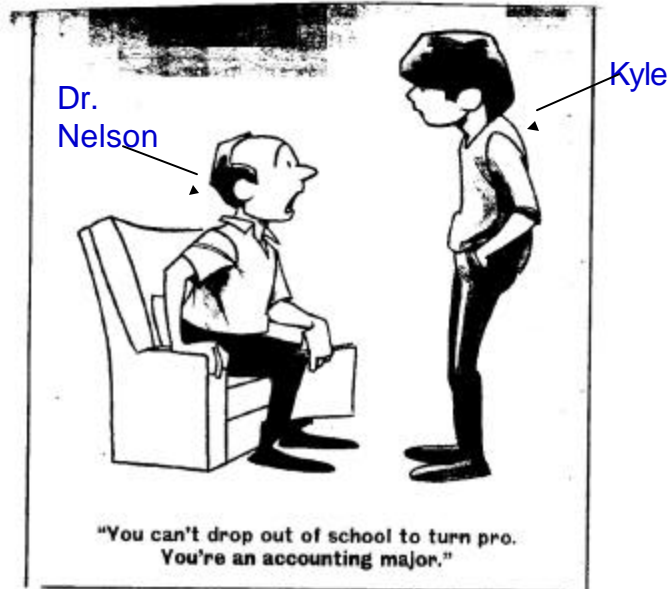
Discussion Items

- What do you do if a student is not succeeding or does not appear to be able to cut it?
- What percentage of the thesis can be you, rather than the student?
- How many students can you have at the same time?
- What is your role as a committee member, but not the advisor?

Don't boo me, I'm only the engineering professor

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About 5 years from right now...



My Teaching Philosophy

- If nothing else, be prepared (and have a reason for everything you do).
- Most students learn from the specific to the general, rather than from the general to the specific (opposite of faculty).
- Intuition is not a given, but it can be developed.
- Reduce the fear of speculating and brainstorming to a minimum.

Entertainment Values

- Should we expect to entertain students?
No, but...
 - Our students come from a culture of quick cuts and constant stimulation
 - It is unrealistic to think you do not have to work to keep their attention
- Each of us has to find a style that is comfortable for us, but engaging for students.

Standards

- Rule #1: You are the teacher, they are the students. Do not let that get mixed up.
- Rule #2: It is easier to start tough and back off, than the reverse.
- Rule #3: Being tough does not mean being nasty, aloof, or condescending.
- Rule #4: Always be clear what your standards are.
- Rule #5: Do not apologize for things being hard.

Little Things Matter

- Work and time tests before you give them (I use 3 x “Nelson time” for length).
- Proofread assignments, tests, course packs, e-mail, etc.
- Meet with your TAs. Tell them what you want.
- Do a midterm evaluation.
- Arrive early.

Lecture Lecture

- Avoid lots of media changes.
- Review what happened last class; recap before moving to a new topic.
- Think about how you will use the blackboard/whiteboard.
- Step away from the board and into the class.
- Go through your lecture before class!

Office Hours/E-mail

- Do not just give answers.
- Try to figure out what is confusing the student.
- Try to help the student discover the answer.
- Ask them their name, where they are from, what they want to do, etc.
- Do not answer all e-mail immediately.

New Teacher Mistakes

- Try to cover too much.
- Expect all students to be interested.
- Do not wait for students to answer or do not encourage discussion.
- Use examples that are too elaborate.
- Teach the book or ignore the book.
- Are afraid to be wrong or not to know the answer (never, ever, bluff).