Feedback for Mentors

Robert M. Gray
Information Systems Laboratory
Department of Electrical Engineering
Stanford, CA 94305
rmgray@stanford.edu

This work was partially supported by the National Science Foundation. Based on a presentation to the 2003 PAESMEM Forum on Excellence in Mentoring in Science, Mathematics, and Engineering. 17 March 2003, Washington DC.

Introduction

The problem: Diversity in general population is not reflected in academic engineering.

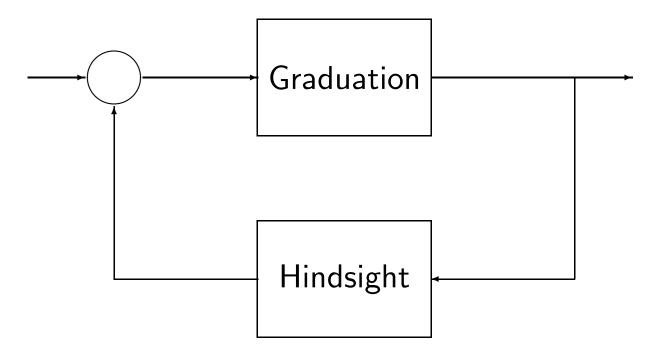
E.g., only 8.2% of PhDs granted in EE during 1985-2001 were women.

Some issues: (interrelated)

- Recruitment
- Environment
- Mentoring

Model (Metaphor)

Feedback— a basic principle of engineering.



Feedback Loop

Useful model for mentors:

- measuring success as a mentor: Track careers of former students.
- gathering and promulgating successful techniques:
 Stay accessible to and keep in touch with former students,
 benefit from their hindsight
- share good ideas with colleagues, learn from them and their students

Collective Wisdom on "Best Practices"

Culled from former students and conversations with successful colleagues (especially Jeff Koseff)

Environment Work to create a comfortable, friendly, cooperative, and productive environment with the best possible resources for all students. Success begets success and attracts top quality students.

Cooperation Discourage aggressive competition among students, encourage cooperative efforts and openness. Sadly many people need education in basic politeness and diplomacy skills.

Recruitment Actively recruit a diverse group. It improves the quality of life for all involved and enhances group morale. A diverse group of students can actively assist in recruiting new generations.

Confidence Many students start with little, but can become outstanding when properly encouraged and appreciated. Particularly true in underrepresented groups.

Credibility The better we are at what we do, the better mentors we will be.

Integrity Words won't do it (just read the newspapers). Many students do not take it seriously. Mentors must. Cynicism in professors can cause real damage.

- **Communication skills** Brilliant research is of little use if not understood. Correct English with good style is critically important. Practice writing and speaking skills constantly.
- **Chores and Citizenship** Engage students in professional responsibilities: reviewing, proposal writing, presentations, recruiting, mentoring.
- **Professional Visibility** Send students to conferences to attend and give talks. Rehearse them extensively. Introduce them to colleagues. Get them plugged in.
 - After graduation recommend them for program committees, technical committees, reviewing chores.

Credit Give it generously to students. It helps them and makes you look good.

Attitude Building and maintaining a high quality and diverse group takes conscious committment, effort, and action. This is particularly true when initially bringing diversity to a monolithic group.

Sharks Although many institutions have programs for diminishing sexual harrassment, it still exists. Be sensitive to potentially embarrassing or dangerous situations and do not accept inappropriate behavior from colleagues towards your students.

Followup Mentoring does not stop with a degree, students evolve into colleagues.

Visits from alums provide wonderful examples, information, and inspiration.

Former students often lack mentors at new institutions.

Parting Thoughts

These points may seem obvious, but unfortunately they are not generally recognized.

How can individuals and organizations foster good mentoring?

Promote events that spread the word and stimulate discussion (like this one and PAESMEM).