Mentoring Undergraduate Researchers

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Personal Background

- My first research experience as an undergraduate in 1960's.
  - St. Mary's College of California
  - Brother Alfred
- UW Computer Science in the 1970's and 1980's
  - Required Senior Project
- UW in the 1990's and 2000's
  - Recognition that access to research by undergraduates differentiates UW from other kinds of institutions

Institutionalization of Undergraduate Research

- UW Undergraduate Research Program
  - http://www.washington.edu/research/urp/
- NSF REU Sites
  - UW has four in Materials Science, Math, Physics, and Chemistry
- NSF REU Supplements
  - $6,000 per student almost for the asking
  - http://www.engr.washington.edu/facresearch/undergradresearch/aboutreu.html
- UW Space Grant Undergraduate Research Program
  - Requires matching
- UW Mary Gates Research Scholarships
  - Awards directly to students

Promoting Undergraduate Research in CSE

- ## CSE Honors Program
  - Senior thesis required
  - 50 minute talk required
- ## CSE Best Senior Thesis Award
  - http://www.cs.washington.edu/education/ugrad/current/bestseniorthesis.html
- ## CSE Undergraduate Research Seminar
  - Venue for undergraduate talks
  - More than 100 talks since 2000
  - http://www.cs.washington.edu/education/courses/cse497/

Finding Students

- Try to match the student's interest with the project, not vice versa.

- If you have a specific project that an undergraduate can do, then recruit students with the right skills and background. Do an "open" hire.

- Take on a talented student early in his/her career, and move them from easy to harder projects as they progress in their careers.

Encouragement

- Encourage students, who are capable, to do a senior thesis and get an honors degree. The goal of the honors degree is a strong motivator,

- If the student is capable, write conference papers or posters with them and send them to conferences.

- Always encourage, never discourage.

More General Advice

- Meet regularly with the student.
- For group projects have make undergrads part of the team.
- Have students do legitimate research, not just scut work.
- Give the student ownership of a real research problem.