Interest in computer science among first-year undergraduates dropped by 70% since 2000 (HERI). Meanwhile, the gender gap continues to widen, with only 21% of graduating CS/IS majors being women in 2006, down from 37% in 1985 (NCES).

Low interest and the gender gap keep computer science from meeting its potential:
- Addressing the IT labor shortage
- Better engineering through diversity
- Equal opportunity to study CS

Research questions
- What factors affect undergraduate interest in CS, especially for women?
- How do these factors affect interest?
- What are pre-major undergraduates’ perceptions of CS?

Qualitative study
- Major component of my Ph.D. dissertation
- 45- to 60-minute, semi-structured interviews with 14 pre-major students in CS 1:

<table>
<thead>
<tr>
<th>interested in CS</th>
<th>not interested in CS</th>
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<td>![Students]</td>
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- Questions about what makes CS interesting/uninteresting, what CS and careers are like, previous computing experiences
- Inductive, thematic analysis of transcripts
- Framing with and extension of Eccles et al.’s expectancy-value model of achievement motivation

What they said
Representative quotes illustrate themes from the interviews.

I actually don’t know what people do when they major in CSE. I know they earn a lot of money, but I don’t know what they do.”

Several students admitted they were not sure what CS majors study or what CS professionals do. Students who were less interested in CS seemed to express more uncertainty.

I don’t know if I’d be able to look at a computer screen for eight hours a day...for the rest of my life.”

What perceptions students did have often focused on long hours spent programming, working in isolation.

...a person in a cubicle...shoes off, with coffee mugs and pizza boxes all over the place...their beard grown out...tired and zombie-like.”

Women were especially concerned about the stereotype that computer scientists are asocial, unkempt, and overworked.

What they didn’t say
Equally interesting are topics that were not frequently raised by interviewed students.

- Some students (both women and men) cited the goal of contributing to society as a factor in choosing their majors, but few related CS with this goal.
- Perceptions of poor job prospects for CS majors discouraged only one student’s interest. Others perceived positive job prospects.

Next steps
- Large-sample survey to quantify theme significance
- Cross-institutional comparison
- Recommendations about recruitment and intro CS