Problem: Shrinking Pool in Computer Science (CS)

- Historically European Male CS work force
- Drop in available CS workforce in 1980s & 1990s
- Increased importing of CS workforce in 1990s
- Drop in imported CS workforce after 9-11-2001
- Need to interest, train and retain diverse CS talent

Compounded Problem:
Too few women & minorities in Computer Science

- Female enrollment in CS has dropped
- Less than 20% of CS majors are women
- Only 5% of CS majors are minorities
- From 3 - 30% of computer-based employees are women
- Most CS jobs for women & minorities at lower-paid level

Research Highlights Multiple Relevant Factors:

- Social Construction of Gender
- Divergent Attitudes and Perceptions
- Out-dated, Abstract, and Unattractive Curriculum
- Insufficient Resources and Opportunities
Evidence for a Social Construction of Stereotypes:
♦ Boys & Girls Equally Capable
♦ Girls have more self-deprecating views of their CS talent
♦ Boys often over-state their ability & understanding
♦ Girls less attracted to competitive & violent computer use
♦ Boys have more exposure & encouragement in CS

From Investigations of Perceptions and Attitudes:
♦ CS is perceived as a masculine field of study
♦ CS competence of Females & Minorities’ is minimized
♦ Males in mainly white schools report more CS self-efficacy
♦ Females & Minorities report more anxiety about CS

Literature Reveals Problems with CS Education:
♦ Teachers give more attention to male students
♦ Too few female & minority CS teachers
♦ CS courses are often abstract & overly math-focused
♦ 1st CS course is often uninteresting & prohibitive

Research Suggests Needed Resources:
♦ More scholarships (esp for females & minorities)
♦ More summer research, internships & coursework
♦ More female & minority mentors/role models
♦ More support from top administrators
♦ More partnerships with business & non-profit sectors
Encourage More Research Regarding CS Study:

Social-Cultural Influence

Education & Training

Interest & Retention In CS

Resources & Support

Learn from Other Model Programs:

♦ University of Maryland, Baltimore County
  ♦ Meyerhoff Scholarship Program for Minorities
  ♦ Center for Women & Information Technology
  ♦ UC Berkeley: Women in Science & Elec Engineering
  ♦ Carnegie Mellon: Women@SCS program
  ♦ Anita Borg Institute for Women & Technology

Summary:

♦ Use Multifaceted Approach to Address CS Need
♦ Recognize & Address Socio-Cultural Factors
♦ Work with Educators at all Levels to Improve Training
♦ Partner with Relevant Industry to Attract CS Talent

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