Ultimate Frisbee & You

Mary Fernandez
Executive Director, Dependable Distributed Computing
AT&T Labs Research

© 2007 AT&T Knowledge Ventures. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Knowledge Ventures.

Ultimate Frisbee & You

Mary Fernandez
Executive Director, Dependable Distributed Computing
AT&T Labs Research

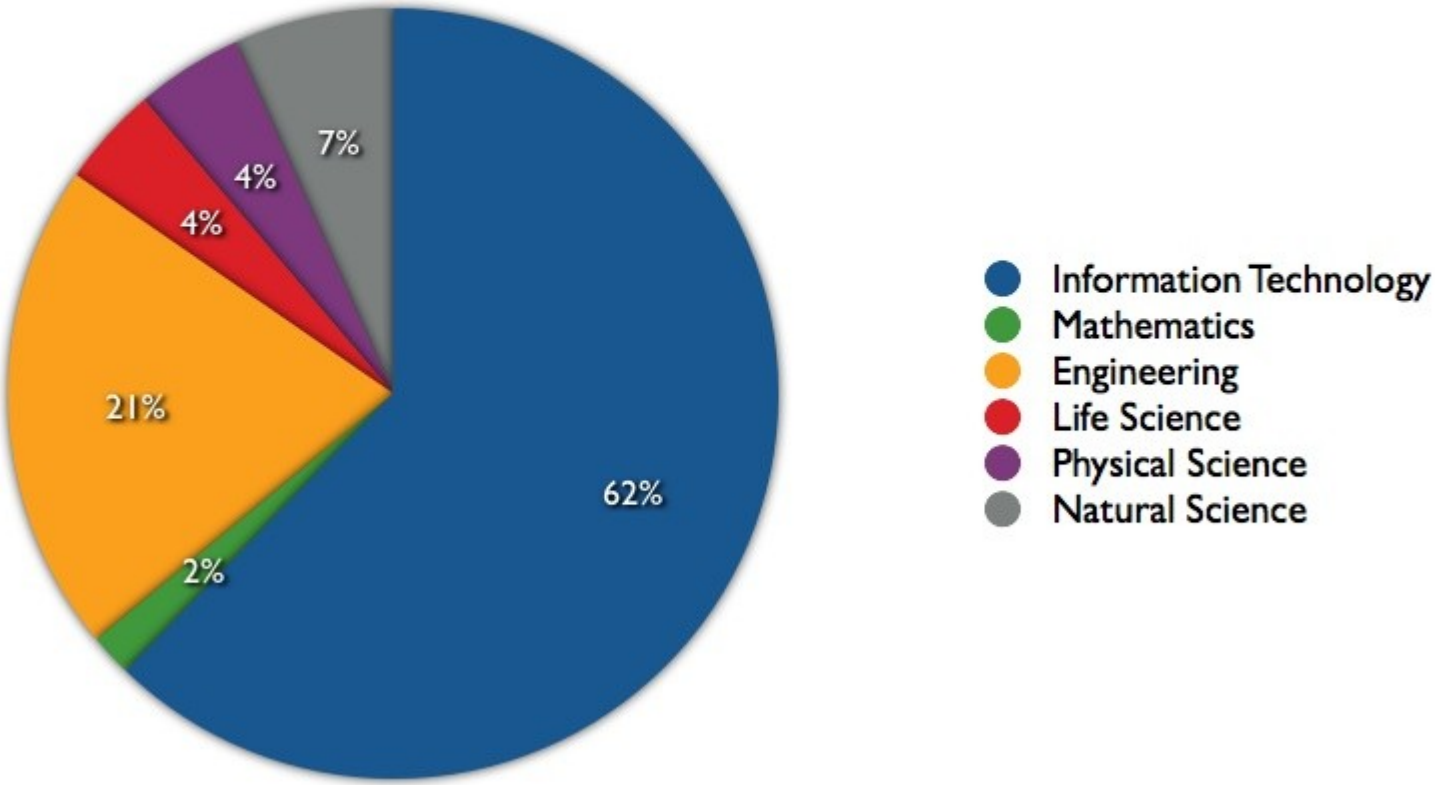
How your students' extra-curricular computing experiences can make you a better teacher, adviser & researcher

© 2007 AT&T Knowledge Ventures. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Knowledge Ventures.

The Good News

Distribution of Projected S&E Job Openings

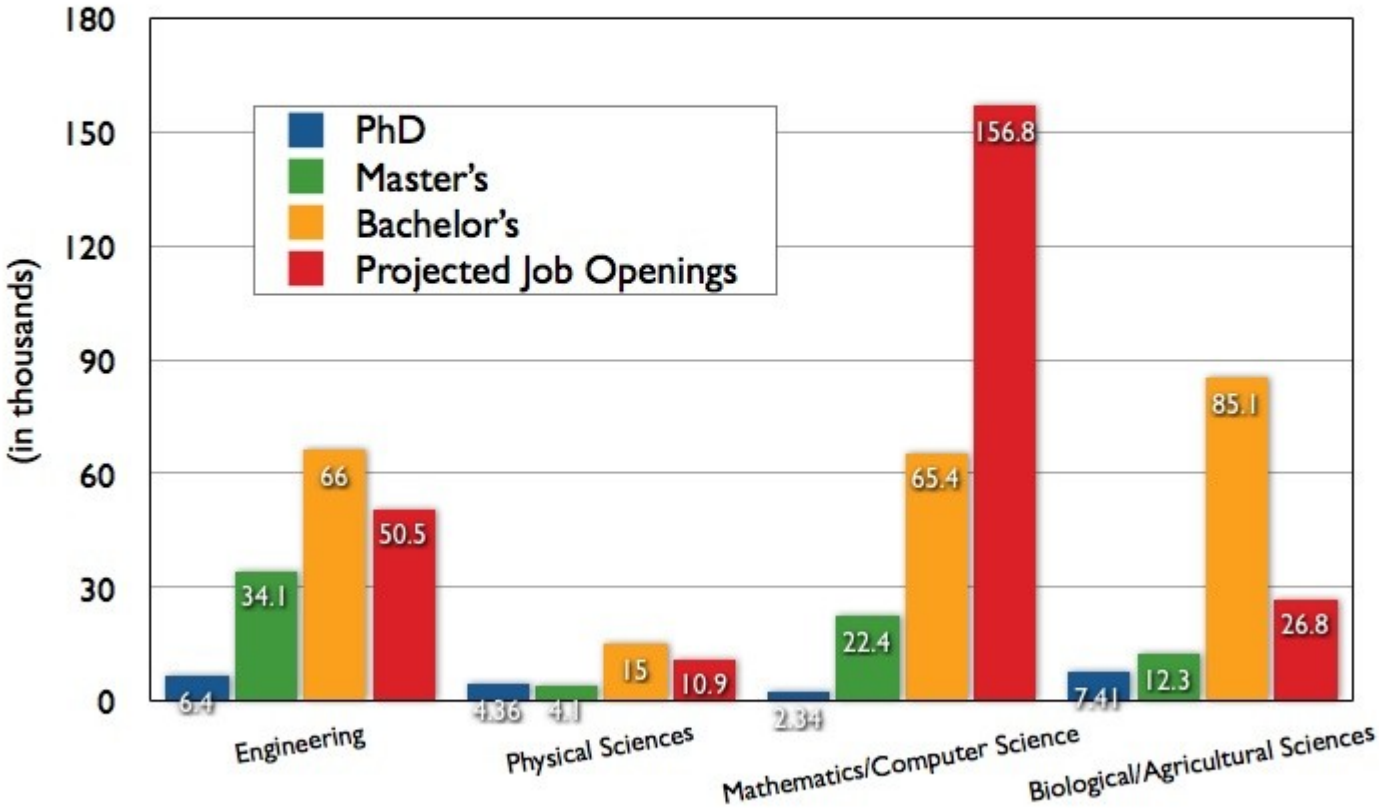
(new jobs plus net replacements) 2006-2016



Source: Bureau of Labor Statistics, Monthly Labor Review, 2007

at&t

The Bad News



Source: Bureau of Labor Statistics, Monthly Labor Review, 2007

Mission Impossible

- Attract, retain & graduate future computing professionals: developers, engineers, project/product managers, architects, analysts, entrepreneurs, lawyers, writers, K-12 teachers, ...

Mission Impossible

- Attract, retain & graduate future computing professionals: developers, engineers, project/product managers, architects, analysts, entrepreneurs, lawyers, writers, K-12 teachers, ...

"Shouldn't some administrator worry about this?!"

at&t

Mission Impossible

- Attract, retain & graduate future computing professionals: developers, engineers, project/product managers, architects, analysts, entrepreneurs, lawyers, writers, K-12 teachers, ...

"Shouldn't some administrator worry about this?!"

Mission Impossible

- Attract, retain & graduate future computing professionals: developers, engineers, project/product managers, architects, analysts, entrepreneurs, lawyers, writers, K-12 teachers, ...

"Shouldn't some administrator worry about this?!"

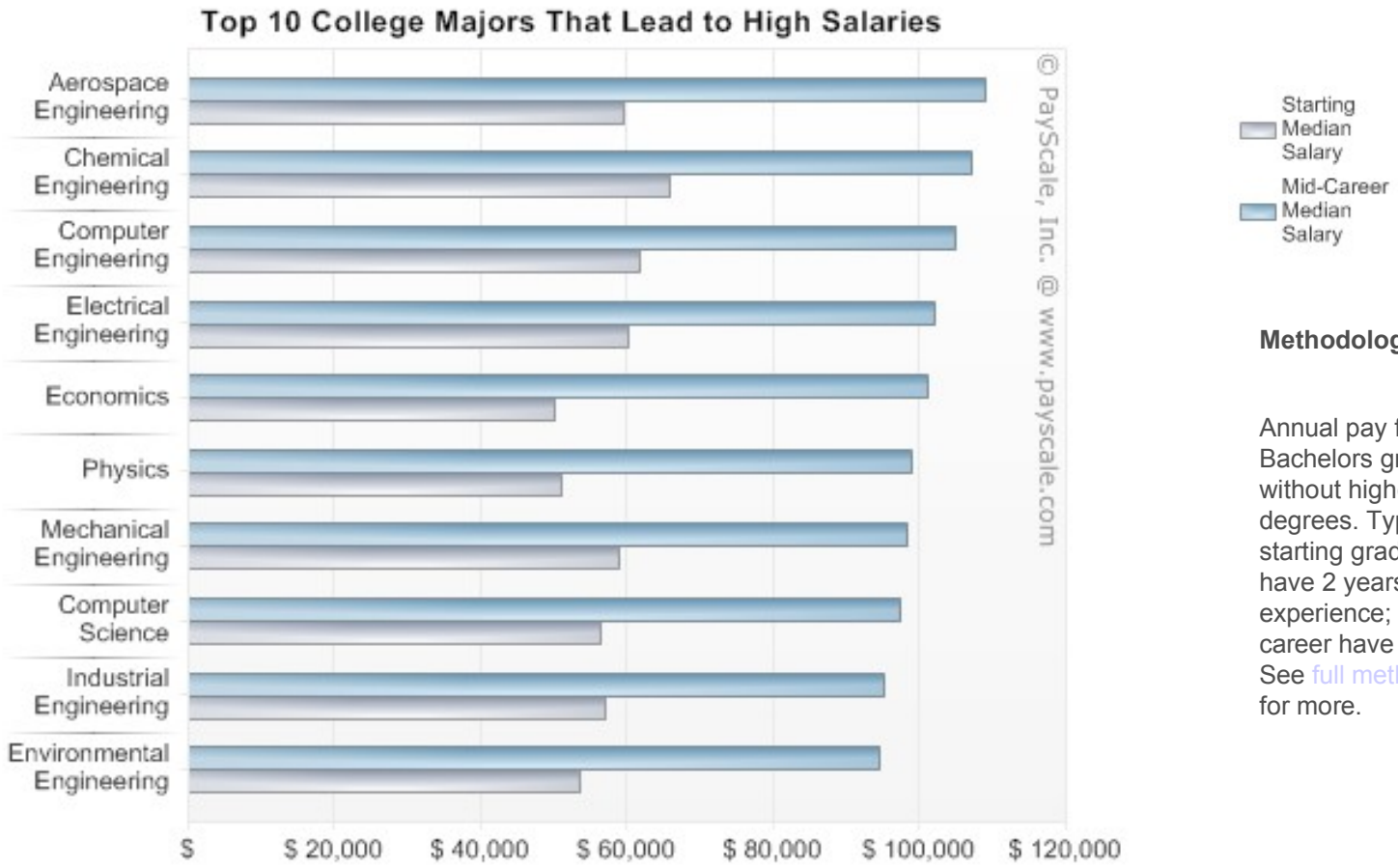
- Extra-curricular programs can help

Internships for Undergraduates

- Summer in industry, national lab; NSF REU; Co-ops
  - http://www.acm.org/crossroads/resources/internships.html...
- What's in it for student
  - Window on future; Workplace readiness; Potential employer
- What's in it for you
  - More mature, motivated students; Good PR for your department; Potential collaborations
- What to do
  - Encourage BEST students to apply
  - Think BROADLY: all STEM fields need CS majors
  - Influence culture: Set expectations in class, reward students, advertise & communicate with employers, share experiences

at&t

Money Matters



Methodology

Annual pay for Bachelors graduates without higher degrees. Typical starting graduates have 2 years of experience; mid-career have 15 years. See full methodology for more.

Source http://www.payscale.com/best-colleges/degrees.asp

Internships for Ph.D. students

- Every PhD student should have internship in industrial or national lab
  - Summer or anytime; Earlier, the better, before 4th year
- What's in it for student
  - Exposure to real, hard problems in context
  - Potential publications & dissertation subjects
  - Letters of recommendation
  - A permanent job
- What's in it for you
  - Establish (long-term) collaboration
  - Potential funding source

at&t

Internships for Ph.D. students

- What to do
  - Encourage your BEST students
  - Plan WAY ahead (DECEMBER)
  - Reach out, by email or phone
  - Think Local - easier to maintain local collaborations
  - Provide student time to bootstrap before internship begins
  - Have student give talk when they return
  - Look for publishable material
  - Encourage them to stay in touch with their mentor

at&t

MentorNet www.mentornet.net

- Award-winning E-mentoring program
  - Pairs protégés with experienced professionals for email-based relationships
  - Community college, undergrad & graduate students, post-docs, un-tenured faculty
  - ***26,000+ pairs since 1998***
  - Real-world information, encouragement & advice; Life-long professional & personal relationships
  - Large pool of mentors in computing
  - Diverse skill sets, job functions, educational backgrounds
  - Free to ACM student & professional members

Homework Assignments

- Engage yourself
  - Learn more about extra-curricular programs supported by your dept, division, university, NSF, DARPA, DoE, CRA, ...
  - Find a mentor outside your department
- Engage your students
  - Professional life begins in first CS class
  - Promote a culture of apprenticeship & professionalism
- Engage your department & chair
  - Manage up!
  - *"Enriching Undergraduate Learning through Apprenticeship"* at CRA 2010 biennial

at&t

Be a Mentor
Have a Mentor
Your Entire Career