

# Ultimate Frisbee & You

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



# Ultimate Frisbee & You

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

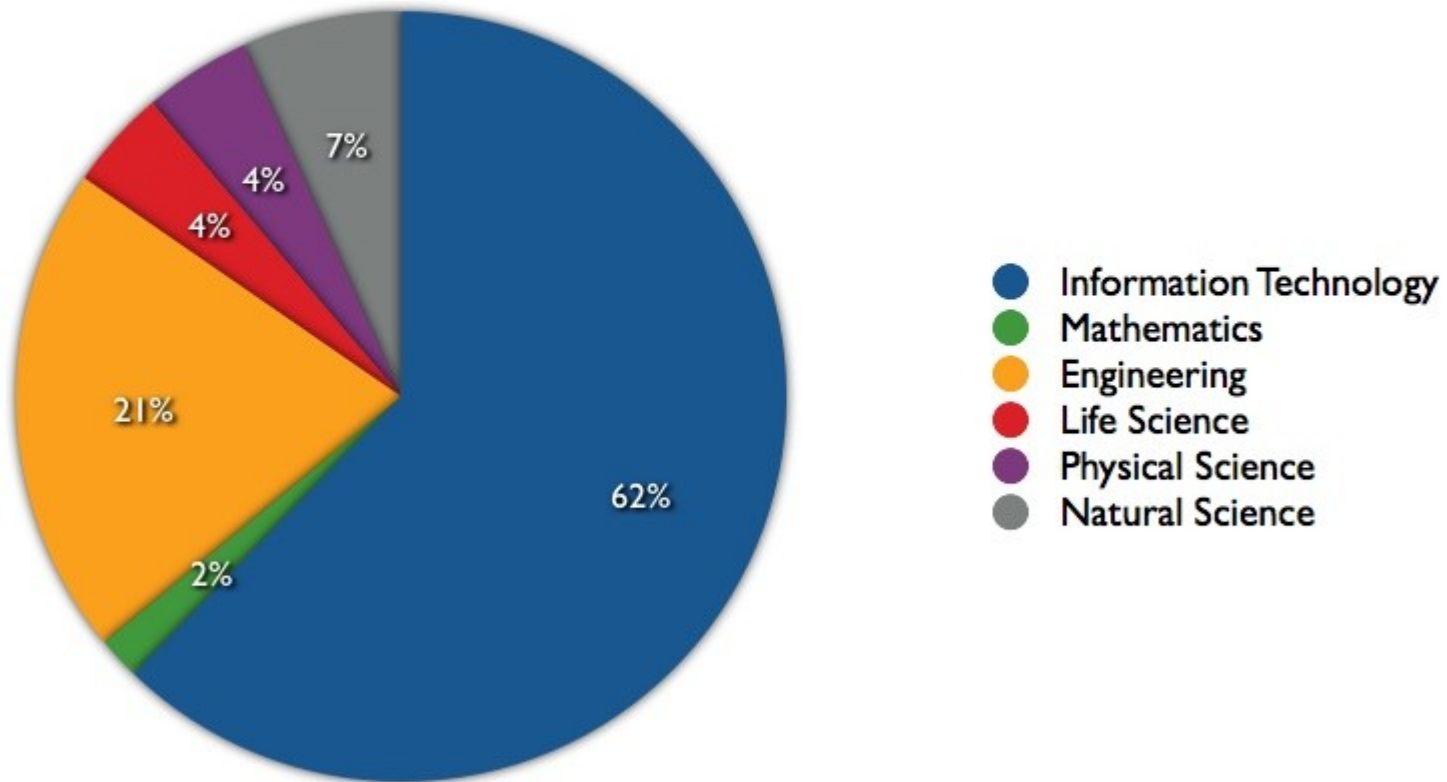
How your students' extra-curricular computing experiences can make you a better teacher, adviser & researcher



# The Good News



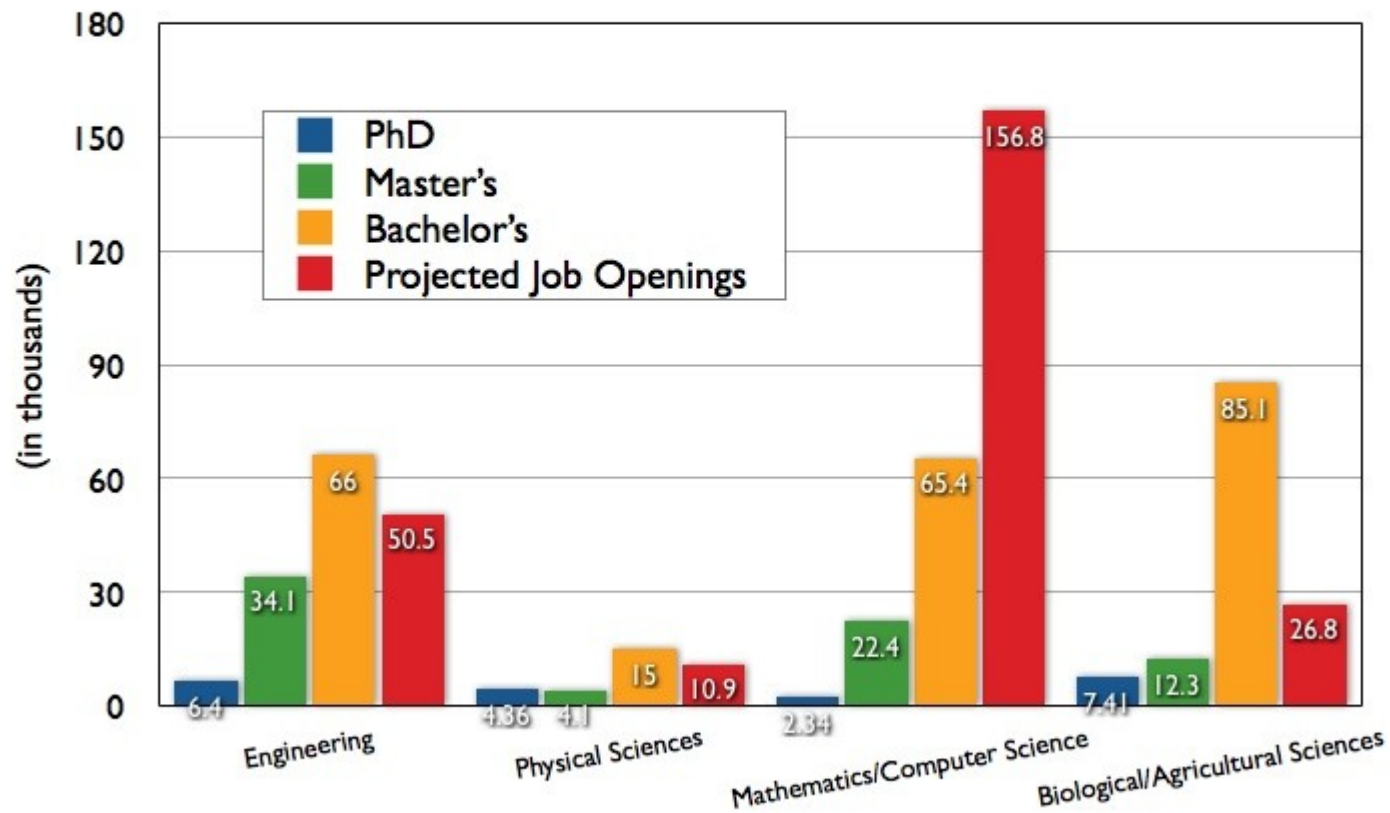
Distribution of Projected S&E Job Openings  
(new jobs plus net replacements) 2006-2016



# The Bad News



## Annual Degrees and Job Openings in Broad S&E Fields (2006-2016)



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?!"*

# 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

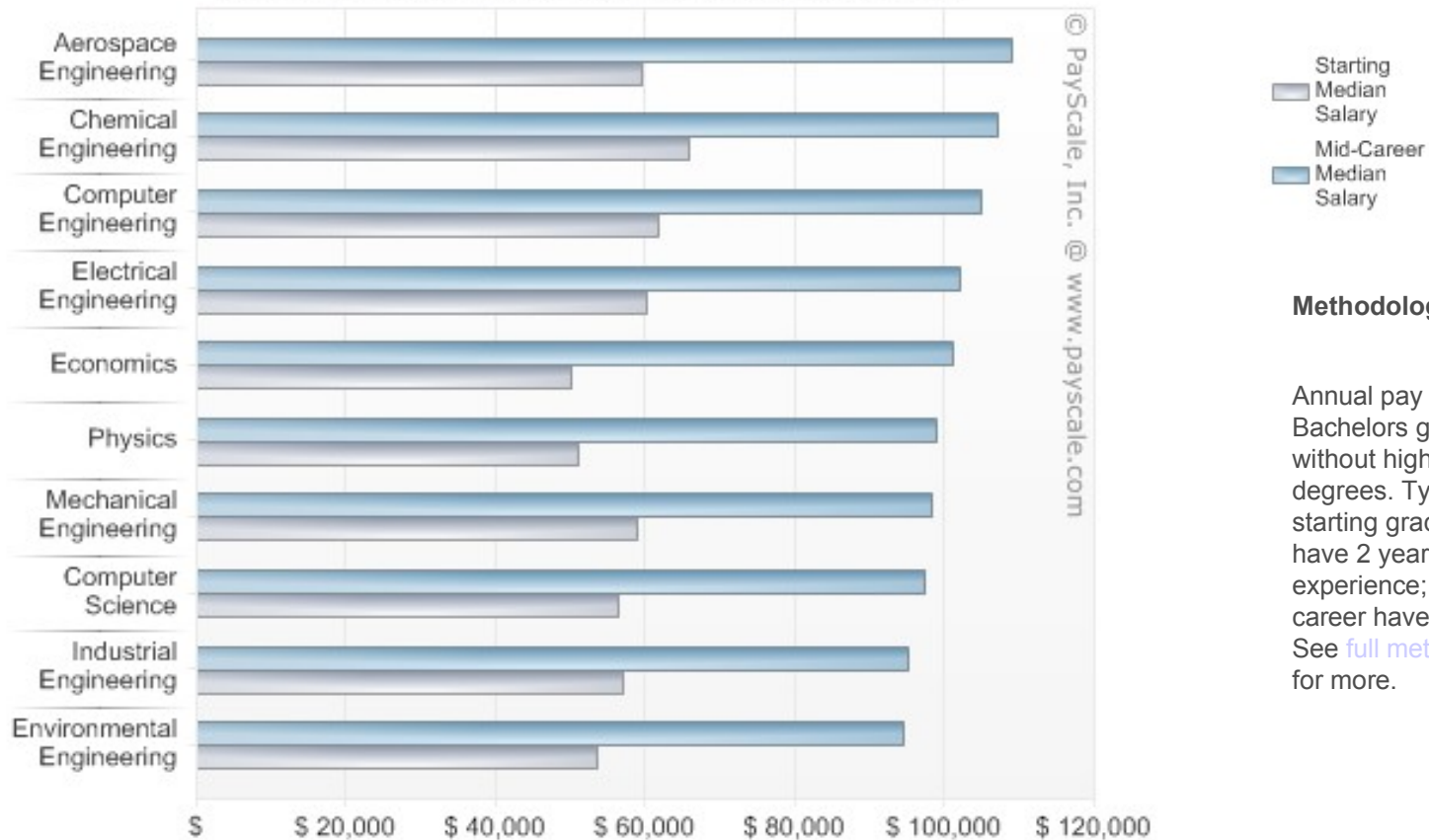


# Internships for Undergraduates

- 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

# Money Matters

Top 10 College Majors That Lead to High Salaries



## 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 4<sup>th</sup> 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

# 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

# MentorNet [www.mentornet.net](http://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



Someone  
**extraordinary**  
is looking for you

 **MentorNet**  
e-mentoring for diversity in engineering and science

# 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

**Be a Mentor  
Have a Mentor  
Your Entire Career**