DIVERSITY IN COMPUTING

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Diversity in Computing - Outline

• Why should we care?
• What is the problem/status of problem?
• Why is there a lack of diversity in computing?
• What can we do about it?

Special thanks to Joanne McGrath Cohoon & Lecia Barker for content and insights
Diversity in Computing: Why should we care?

It's where the good jobs are.
Jobs are Plenty; Jobs are Satisfying

**Best Jobs in America” Reports***

<table>
<thead>
<tr>
<th>Source</th>
<th>Rank Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>US News</td>
<td>5 of top 15 (including #1 and #2)</td>
</tr>
<tr>
<td>Salary.com</td>
<td>2 of top 10 (including #1)</td>
</tr>
<tr>
<td>CNN Money</td>
<td>3 of top 10</td>
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</tbody>
</table>

*Based on job satisfaction, stability, and salary
Jobs are Well Paid: Associate’s Degrees

Source: PayScale College Salary Report 2015-2016
Jobs are Well Paid: Bachelor’s Degrees

Bachelor’s Degrees by Median Salary

- Petroleum Engineering
- Computer Science
- Accounting & Computer Systems
- Computer Information Systems
- Accounting
- Computer Networking Systems
- Health Information Management
- Human Resources Management
- Communication and Journalism
- Liberal Arts
- Hospitality and Tourism
- Psychology and Sociology
- Health Administration
- Early Childhood Education

Source: PayScale College Salary Report 2015-2016
Computing Jobs Let You Work & Have a Life

Average Hours Per Week for Major Occupational Groups

- Healthcare Support
- Office and Administrative Support
- Personal Care and Service
- Life, Physical, and Social Science
- Computer and Mathematical
- Production
- Arts, Design, Entertainment, Sports, and Media
- Sales and Related
- Transportation and Material Moving
- Farm, Fishing, and Forestry
- Management

Average Hours Per Week:
- 37
- 38
- 39
- 40
- 41
- 42
- 43
- 44
- 45
But computing has a problem. It attracts too few people.
BLS Projected 2022 employment: Jobs requiring degree

Computing Occupations 27%

- Accountants and auditors
- Aerospace engineers
- Biological technicians
- Chemists
- Child, family, & school social workers
- Civil engineers
- Computer hardware engineers
- Cost estimators
- Electrical engineers
- Computer software engineers
- Engineers, all other
- Financial analysts
- Graduate teaching assistants
- Healthcare practitioners...
- Industrial engineers
- Industrial engineers
- Logisticians
- Meeting, convention, & event planners
- Mental health & substance abuse specialists
- Market research analysts & marketing specialists
- Medical & clinical laboratory technologists
- Medical & health services...
- Mechanical engineers
- Mechanical engineers
- Medical & clinical laboratory technologists
- Mechanical engineers
- Mechanical engineers
- Meeting, convention, & event planners
- Business & financial operations occupations
- Business & financial operations occupations
2015 Intended Major (national sample)

- Biological and Life Sciences, 14.9%
- Business, 13.2%
- Engineering, 13.1%
- Health Professions, 11.3%
- Arts and Humanities, 10.1%
- Social Sciences, 10.8%
- Undecided, 8.9%
- Other Majors, 4.9%
- Computer Science, 3.8%
- Math and Other CS, 1.6%
- Physical Science, 2.6%
- Education, 4.2%
- Other Majors, 4.9%
- Health Professions, 11.3%

Let’s compare...
Demand and low production explains the CS initiatives

• January 30, 2016: President Obama introduced the “Computer Science for All” initiative

• CS curricula will become compulsory in:
  • primary and middle schools in San Francisco
  • primary schools in New York City
  • for high school graduation in Chicago

• High schools in Arkansas, Texas, and New York City now must offer a CS course
But computing has a problem.
It attracts only a narrow range of people.
Women’s Presence in STEM Disciplines Varies

Percent of Degrees Awarded 2013, Major Occupations: Women and Underrepresented Minority Men

Source for Employment Data: NSF, Women, Minorities, and Persons With Disabilities: 2015, Table 9-7
Source for Degree Data: IPEDS via WebCASPAR, omit for-profits
Diversity in Computing

So, why should that matter?

Why does it matter to you?
The Value of Diversity to Computer Science

- Enhances innovation
- Expands the qualified employee pool
- Improves the bottom line
- Promotes equality/inclusion
- Reflects user/consumer base
- Global competitiveness

ncwit.org/businesscase
Why is there a lack of diversity in computing?

• Lack of knowledge of what computing is
• Misconceptions about what people in computing jobs do
• Stereotypes about who you “need to be” to do well in computing
What can we do about it?

• Actively recruit for diversity
• Utilize research based, best-practice retention strategies that will engage your students and sustain their interest
• Create an environment that fosters interest, confidence, learning, sense of belonging, and occupational identity
• Some examples of what we’ll talk about in this workshop:
  • Inclusive pedagogy
  • Implicit bias & Stereotype threat and how to avoid them
  • Case study on implementing workshop strategies
Questions?
Thank You!
What’s next?

❖ Core Sessions:
  • Active Recruiting
  • Implicit Bias
  • Stereotype Threat & Inoculation
  • Inclusive Pedagogy
  • Chrestomathics
  • Success!

❖ Activity Sessions

❖ Integration Sessions
Diversity in Computing: Activity

• Explore computing education and workforce data in your area:
  • https://goo.gl/forms/4JvHzqBeK8xT5AAy1