



# CSCI 215

## **Social and Ethical Issues in Computer Science**

Shortage of Women and minorities in  
Computer Science

Please watch <https://www.youtube.com/watch?v= ZjGOiJXVBA>



# Intro

- AWC mtg this Thursday
- Listen to the exciting life of working in a leading edge cyber security company on September 10th (9.10.20) at 5pm. Our speakers are passionate about talking to AWC so be sure to drop in. Learn more about the company at <https://www.hopliteindustries.com/>

Zoom information:

- <https://zoom.us/j/91658381784?pwd=SmV5SG4ydnFFMk1JZUcybnZLQVhadz09>
- Meeting ID: 916 5838 1784
- Passcode: 432451



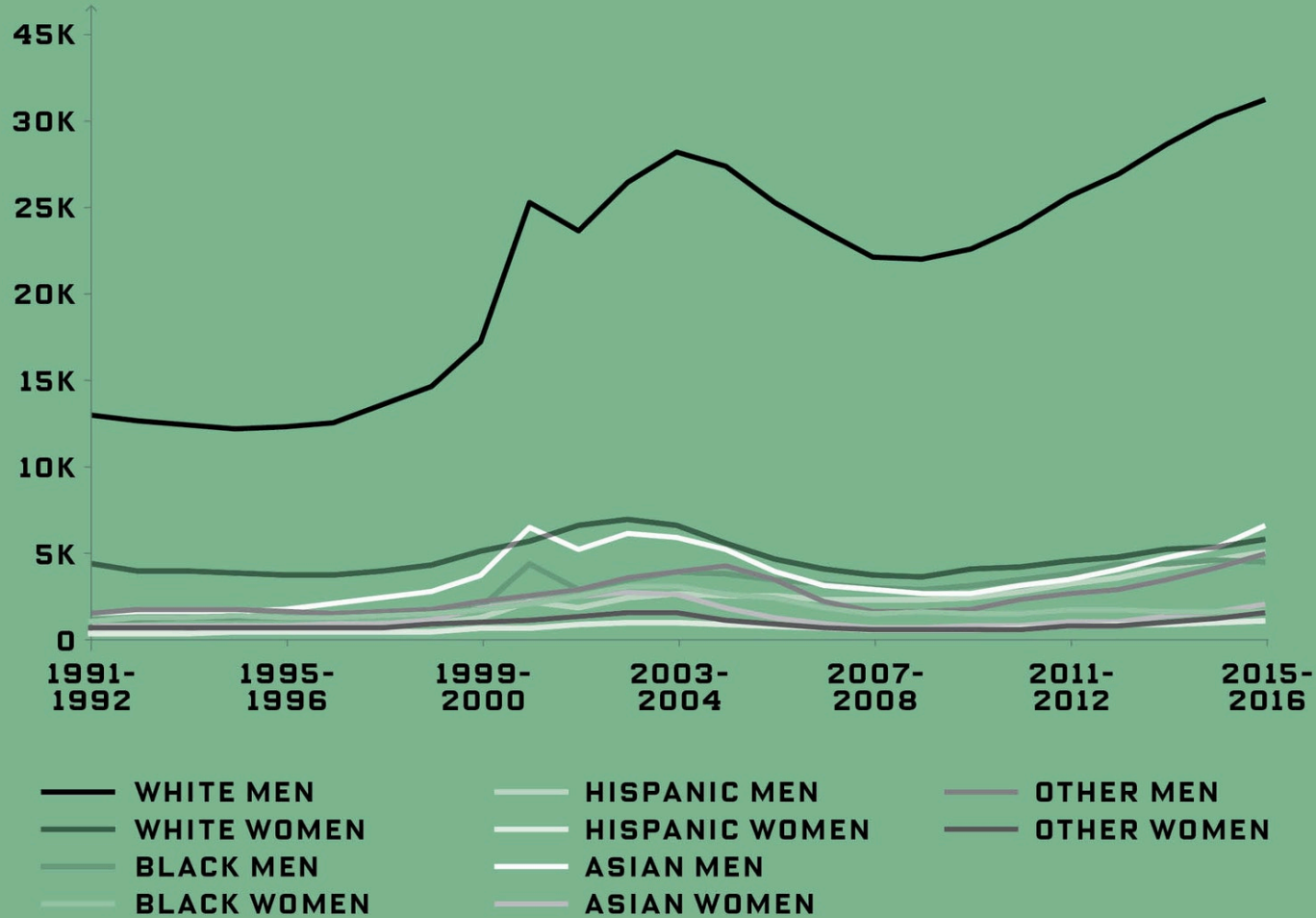
# All Opinions Are Valuable



# Question

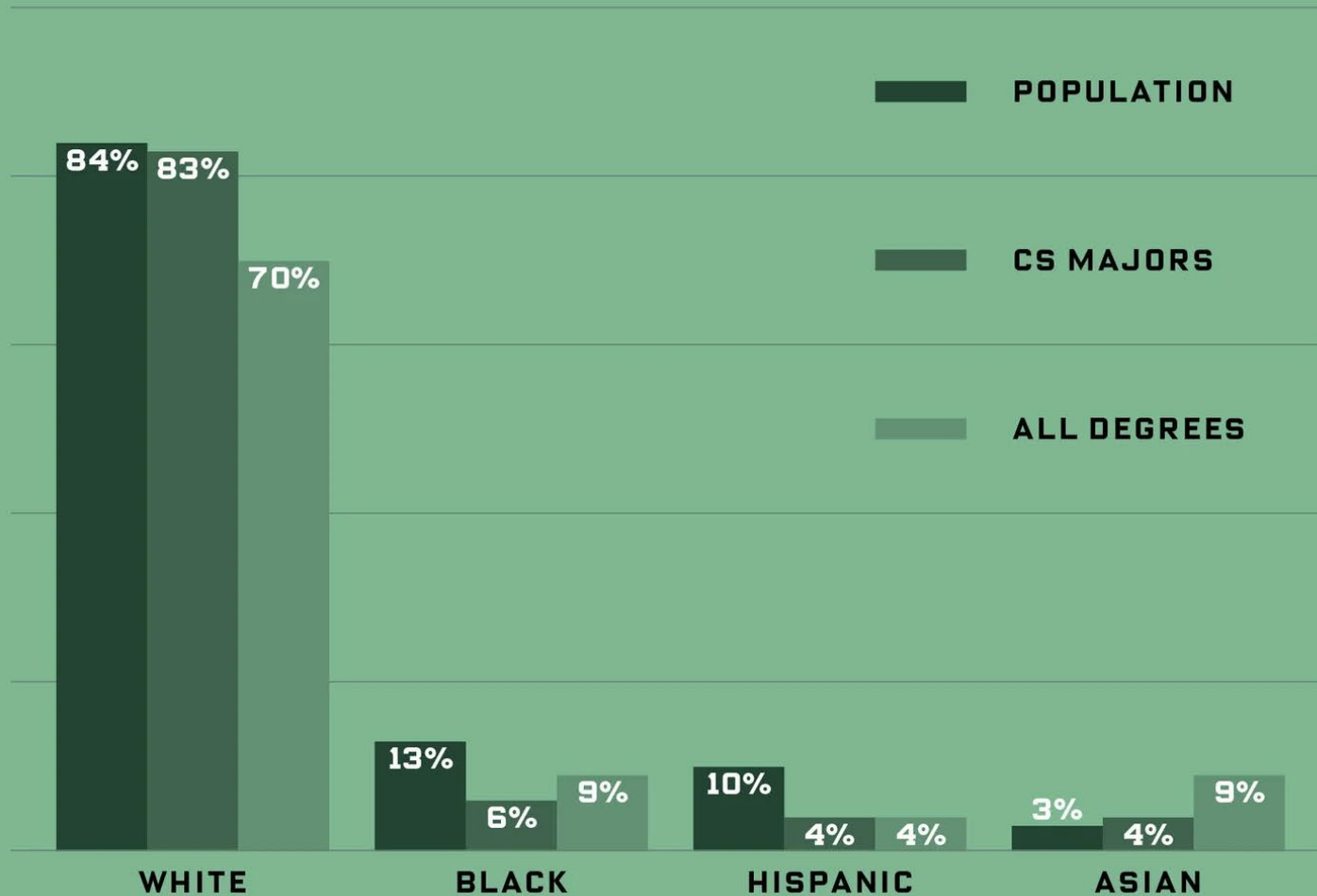
- If all computer scientists are of race/gender, what ethical issues could we face?

## The Sheer Volume of White Male Computer Science Majors Continues to Rise



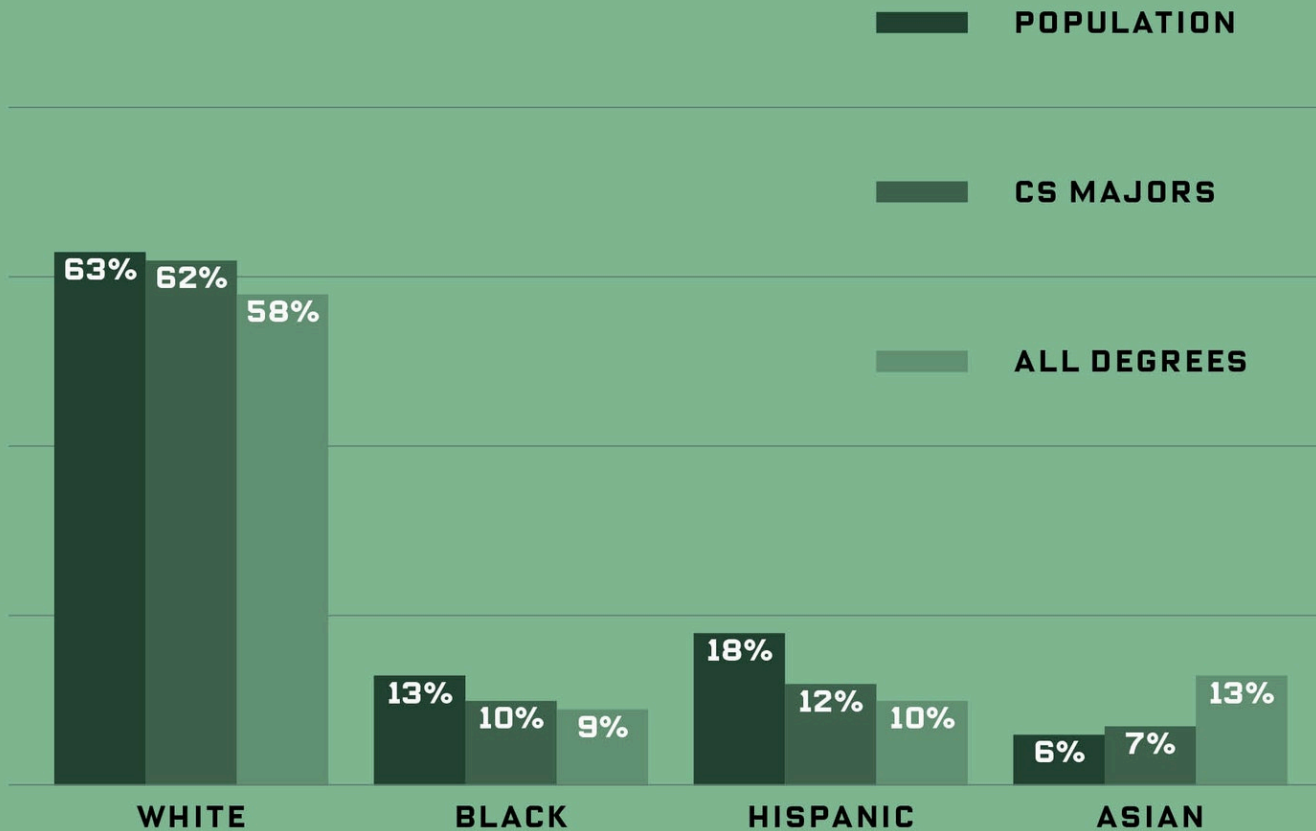
SOURCE: CENTER FOR EDUCATION STATISTICS, INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM

## Proportion of CS Majors by Race/Ethnicity, 1991-1992



SOURCE: CENTER FOR EDUCATION STATISTICS, INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM

## Proportion of CS Majors by Race/Ethnicity, 2015-2016



SOURCE: CENTER FOR EDUCATION STATISTICS, INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM

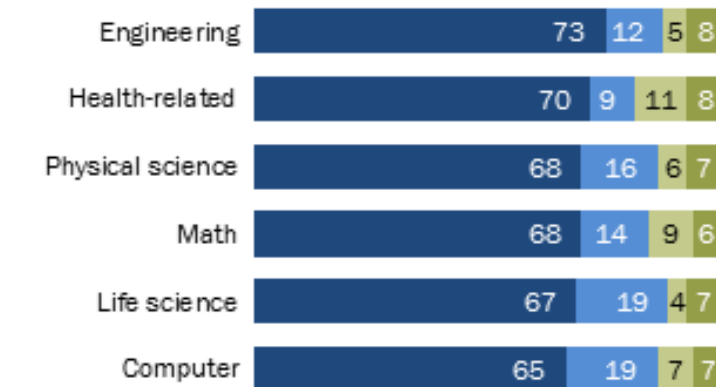
# Minorities Underrepresented

## Blacks and Hispanics underrepresented across most STEM job clusters

*% of employed in each occupational group who are ...*



*Among those who work in \_\_\_\_ jobs*



Note: Based on employed adults ages 25 and older. Whites, blacks and Asians include only non-Hispanics. Hispanics are of any race. Other and mixed race non-Hispanics are not shown. Engineering includes architects. STEM stands for science, technology, engineering and math.

Source: Pew Research Center analysis of 2014-2016 American Community Survey (IPUMS).

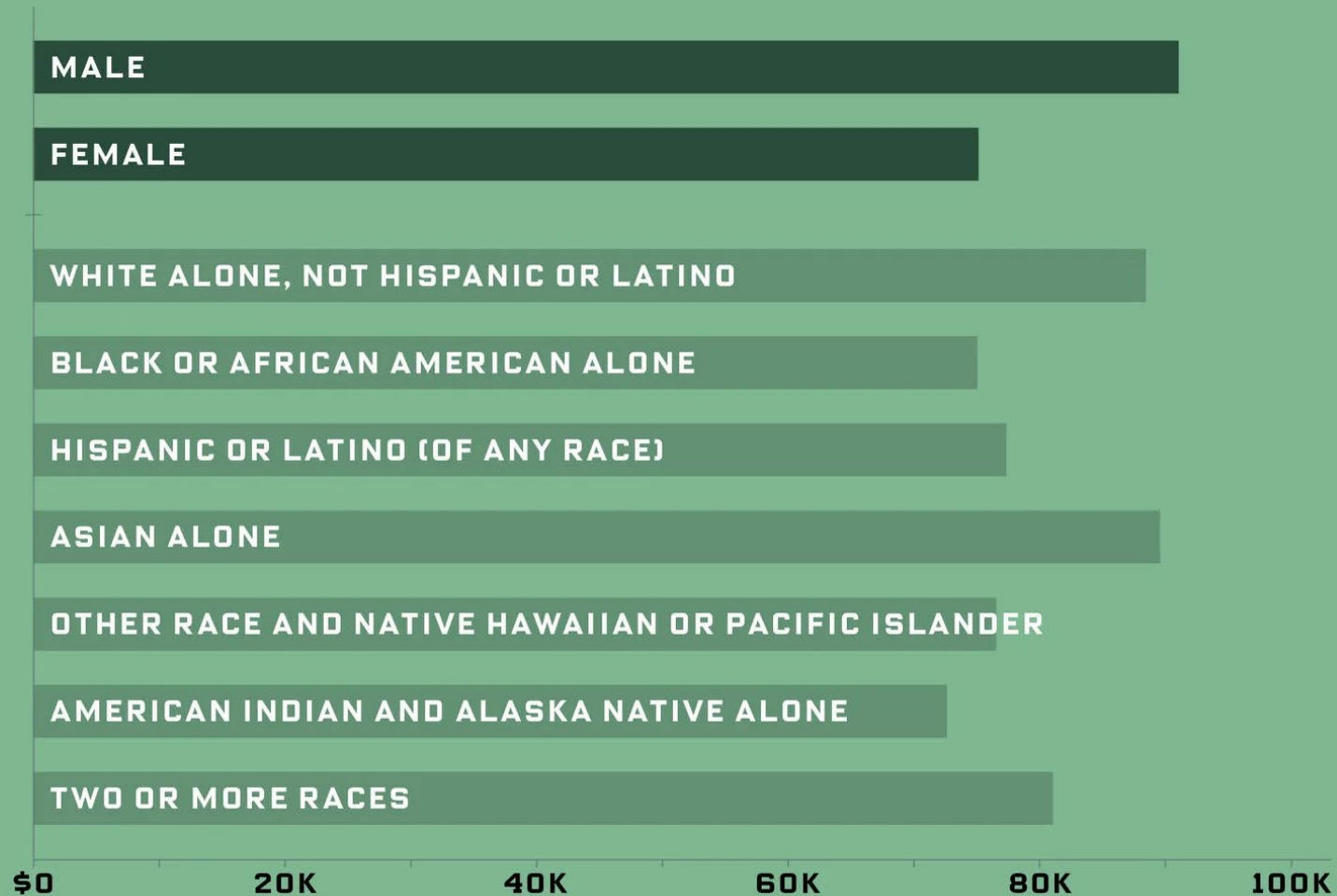
"Women and Men in STEM Often at Odds Over Workplace Equity"

PEW RESEARCH CENTER

[https://www.pewsocialtrends.org/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/ps\\_2018-01-09\\_stem\\_4-01/](https://www.pewsocialtrends.org/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/ps_2018-01-09_stem_4-01/)



## Median Earnings of STEM Majors With Full Time Jobs



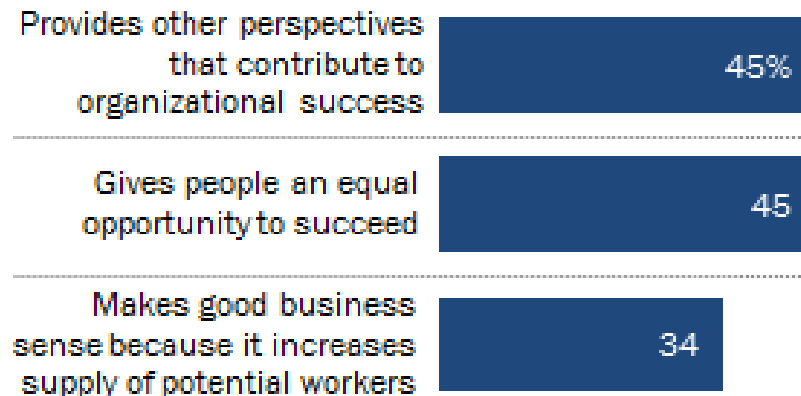
SOURCE: U.S. CENSUS BUREAU, 2011 AMERICAN COMMUNITY SURVEY

# Why should we increase Diversity in Computer Science?



**And many cite diverse perspectives and equal opportunity as important reasons to increase workplace diversity**

*% of U.S. adults who say the following are important reasons for increasing racial and ethnic diversity in the workplace*



Note: Respondents who gave other responses or who did not give an answer are not shown.

Source: Survey of U.S. adults conducted July 11-Aug. 10, 2017.

"Women and Men in STEM Often at Odds Over Workplace Equity"

PEW RESEARCH CENTER

[https://www.pewsocialtrends.org/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/ps\\_2018-01-09\\_stem\\_4-01/](https://www.pewsocialtrends.org/2018/01/09/women-and-men-in-stem-often-at-odds-over-workplace-equity/ps_2018-01-09_stem_4-01/)

# Shortage of Women in Computer Science



# History

- Women were programmers 50s, 60s, even when I started (govt is backward)
  - The men created the HW and the women created the SW
  - involved more manual labor
  - Grace Hopper said women were naturals at programming – it was like planning a dinner
- Late 60s – more jobs than programmers
- Started to think that programmers were born, not made
- salaries went up – men were interested



# History

- by 1962, companies were using aptitude tests to hire workers – answers were passed around fraternities
- So the personality test was born
- 1965 – SDC hired 2 male psychologists to come up with this tests – used 1300 subjects – only 186 were women
- They decided programmers don't like people, dislike activities involving close interaction
- Then this test became widespread
- And the antisocial nerd was born – mainly male
- 2/3 of companies used this personality test and aptitude test to hire
  - anti social woman pitied – anti social man – lone wolf – admired
- Death spiral – women didn't want to work with that type of man
- this idea proliferated to toys and the classroom



# History

- The apple is born – late 70s, early 80s
- computer clubs started
- CS depts. started filling up
- Mid 1980s peaked for degrees – 40% were women - 1984
- then it declined – colleges couldn't hire enough professors – then they had to restrict – had to have a 4.0 to be a CS major
- At the same time medical schools were growing and accepting women
- CS depts. became elitist and only allowing those who already programmed – mainly boys (video games)

# History

- Steve Jobs came along and again the industry said the ideal computer entrepreneurs has an ego and takes risks
- Trilogy – 1990s in silicon valley – place for nerds – revenge of the nerds – work hard, party harder was their slogan – the job to have
  - straight out of school, best of the best – talent not experience
  - insane work hours, drinking, gambling, Las Vegas, strip clubs
  - completely hostile to women
  - Even though they are no longer in business, they set the culture for decades