

**MAXIMIZING POTENTIALS**

**Getting Girls to APCS**

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Parents are  
a child's **FIRST** and  
*most important*  
teachers.



# AGENDA

- ✓ What Is Computer Science?
- ✓ Why Computer Science Education
- ✓ Why is gender diversity important in computing?
- ✓ WHY? – Get your daughters emotionally involved in CS
- ✓ What a Computer Science Class looks like?
- ✓ Resources
- ✓ Q & A

# STEREOTYPES

- CS is men's world, not for girls
- CS classes are for nerds, I am a normal kid
- I want to be a fashion designer, I don't need to learn CS

# FACTS

- Girls enjoy being in this field once they are in
- CS classes are for all
- CS can make you a greater a fashion designer

# WHAT IS COMPUTER SCIENCE (CS)?

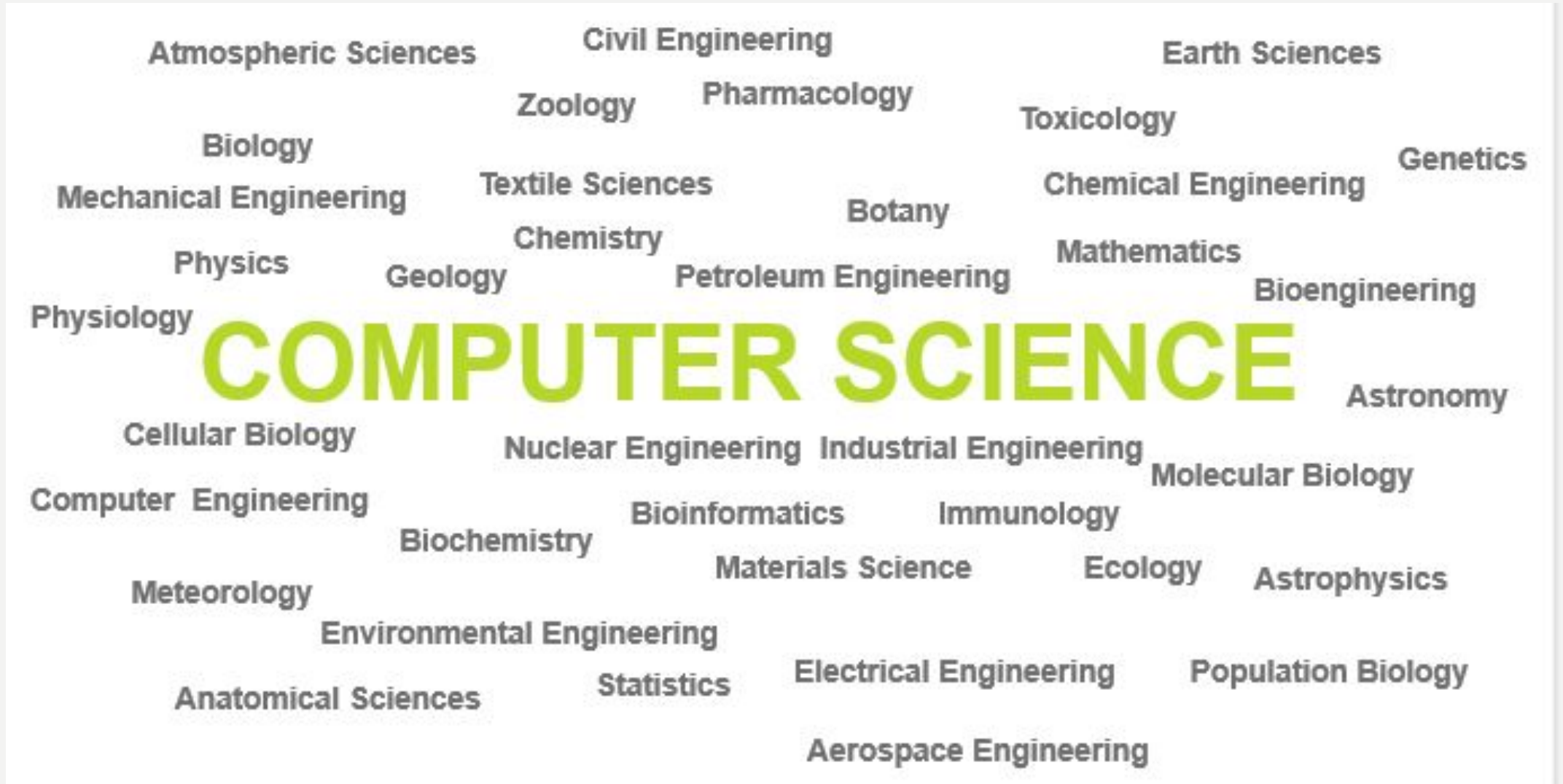
## Producers/Creators

- The *creation and adaptation* of new technology
- A source of 21<sup>st</sup>-century skills: design, critical thinking, logical reasoning, problem-solving
- The foundation for most innovation today, from biotech to economics to national security

## Consumers/Users

- Using apps
- Using Facebook
- Using Smart Home

# CRITICAL FOR ADVANCING NEARLY ALL OTHER STEM DISCIPLINES



# **GIRLS and CODING**

GOOGLE'S

EFFORT

**FACTS**

**Let numbers tell the  
story**



# By the Numbers

**57** Percent of professional occupations in the 2017 U.S. workforce held by women

**26** Percent of professional computing occupations in the 2017 U.S. workforce held by women

**17** Percent of Fortune 500 Chief Information Officer (CIO) positions held by women in 2017

**3.5 million**

Number of U.S. computing-related job openings expected by 2026

**17** Percent of these jobs that could be filled by U.S. computing bachelor's degree recipients by 2026

**56** Percent of Advanced Placement (AP) test-takers in 2017 who were female

**47** Percent of AP Calculus test-takers in 2017 who were female

**23** Percent of AP Computer Science test-takers in 2017 who were female

**60** Percent of 2017 Intel Science and Engineering Fair (ISEF) finalists in Biology categories who were female

**23** Percent of 2017 ISEF finalists in Mathematics who were female

**31** Percent of 2017 ISEF finalists in Computing categories who were female

**57** Percent of 2016 bachelor's degree recipients who were women

**19** Percent of 2016 Computer and Information Sciences bachelor's degree recipients who were women

**18** Percent of 2016 Computer Science bachelor's degree recipients at major research universities who were women

**37** Percent of 1985 Computer Science bachelor's degree recipients who were women

**26** Percent of computing workforce who were women in 2017

**3** Percent of computing workforce who were African-American women in 2017

**5** Percent of computing workforce who were Asian women in 2017

**1** Percent of computing workforce who were Hispanic women in 2017

**GOOD NEWSFLASH:**  
**GIRLS HAVE NECESSARY CAPABILITIES**

**56**

Percent of Advanced Placement (AP) test-takers in 2017 who were female

**47**

Percent of AP Calculus test-takers in 2017 who were female

**23**

Percent of AP Computer Science test-takers in 2017 who were female

**Bad Newsflash:**

They major in fields other than computing

### Good newsflash:

Jobs in this most innovative sector are growing

### Bad Newsflash:

Fewer graduates seeking computing careers, women's participation dropping faster than men's

# 3.5 million

Number of U.S. computing-related job openings expected by 2026

# 17

Percent of these jobs that could be filled by U.S. computing bachelor's degree recipients by 2026

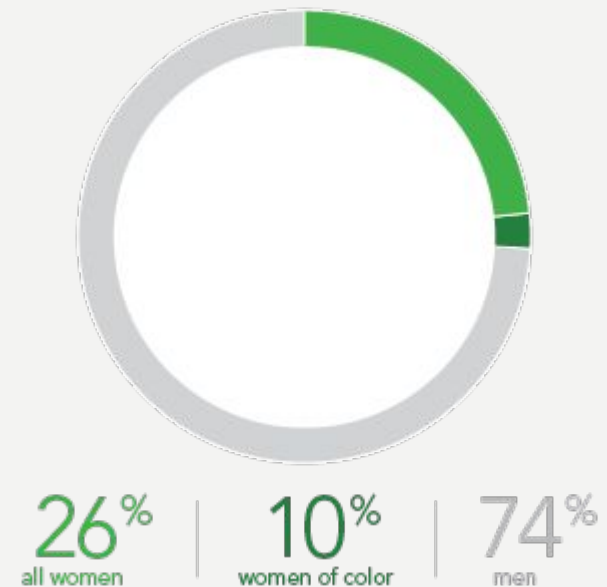
# WHY GIRLS?

**Let numbers tell the story**

# ACCORDING TO NCWIT

In 2017:

- 26% of the computing workforce were women
- less than 10% were women of color
  - 5% were Asian
  - 3% were African-American
  - 1% were Hispanic





Ada Lovelace  
1815–1852



Grace Hopper  
1906–1992



Jean Bartik  
1924–2011



Frances  
Spence  
1922–2012



Betty  
Holberton  
1917–2001



Kathleen  
Antonelli  
1921–2006

### Good Newsflash:

A study on U.S. technology patenting reveals that patents created by mixed-gender teams are the most highly cited (an indicator of their innovation and usefulness)

### Bad Newsflash:

Women were involved in only 9 percent of U.S. tech patents

# GENDER DIVERSITY IS IMPORTANT IN COMPUTING


- Enhances Innovation
- Expands the Qualified Employee Pool
- Improves the Bottom Line
- Promotes Equality

Computer Programmers earn more than 49% percent of similar careers in the United States.


Full Stack Developer Salary \$76k 

IT Security Consultant Salary \$75k 

App Developer Salary \$75k 


Computer Systems Administrator Salary \$75k 

Operations Research Analyst Salary \$73k 

**Computer Programmer Salary \$71k** 

Computer Systems Analyst Salary \$71k 

Database Administrator Salary \$70k 

Industrial Designer Salary \$68k 

Web Developer Salary \$63k 



**Maximize Potentials**

**You Know Your  
Daughters more than  
anyone else!**



# HOWWP

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**Get Emotionally Involved**

A child's first and best  
teacher is their parent.



# ENCOURAGE YOUR DAUGHTERS

- Discuss the critical role of computer science in an information economy with your daughters
- Expose your daughters to K-12 computer science classes
- Engage them through open dialogues
- Join in [www.csedweek.org](http://www.csedweek.org) and find out more exciting news about Computer Science
- Get your daughters to CS summer camp
- Get your daughters to CS classes at earlier age

# Maximize Potentials

Inside CS Classroom

# WHAT LOOKS LIKE?

## **In a HS Computer Science Classroom**

- ✓ Storytelling
- ✓ Unplugged
- ✓ Teaching Programming and Language Concepts Using LEGOs
- ✓ Scalable Game Design
- ✓ Snap, Create, and Share with Scratch
- ✓ Mobile Technology Classroom
- ✓ Engaging Introductory Computing Curriculum
- ✓ Inclusive Practices: Pair Programming

**K-12**

**Students in High School Class**

A K-5 CS Classroom

A 9-12 CS Classroom

# **State Students in CS4NC Expo**

More attention has received  
from all the stakeholders from  
school, district, and state level



# **Nation** **NCWIT AiR Recipients**

2019 **NCWIT AiR Recipients**

Girls Who Code

Hour of Code from Code.org

# Corporations

## More Findings and Efforts

Google

Microsoft

**Maximize Potentials**

**NOW, IT IS YOUR TURN**

# TAKE A SURVEY

What will do after this session?

[http://tinyurl.com](http://tinyurl.com/GirlsToCode)

[/GirlsToCode](http://tinyurl.com/GirlsToCode)



# QUESTIONS

# RESOURCES

- <https://girlswhocode.com/>
- [www.ncwit.org/award](http://www.ncwit.org/award)
- [www.csedweek.org](http://www.csedweek.org)

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