

# Welcome!



- Please introduce yourself, organization, and Collaborative in the chat box.
- Is your Collaborative doing anything special for CS Ed Week?

November 8, 2017

# Agenda

- Expanding Computing Education Pathways
- Community Engagement
- Updates
- Closing



# Gearing up for CS ED Week



Sarah Dunton,  
Exploring Computing  
Education Pathways (ECEP)



Helen Hu,  
CS Professor,  
Westminster College and  
Utah ECEP Lead

# ECEP

Expanding Computing  
Education Pathways



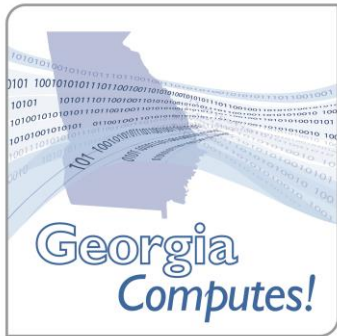
# Expanding Computing Education Pathways (ECEP) Alliance

- ECEP is an NSF-funded broadening participation in computing (BPC) alliance
  - There are 7 other BPC-A projects funded by the NSF CISE directorate
- BPC projects focus on groups traditionally underrepresented in technology:
  - Women
  - Persons with disabilities
  - African Americans
  - Hispanics
  - Native Americans
  - Indigenous peoples

**70%** of the population is missing from CS



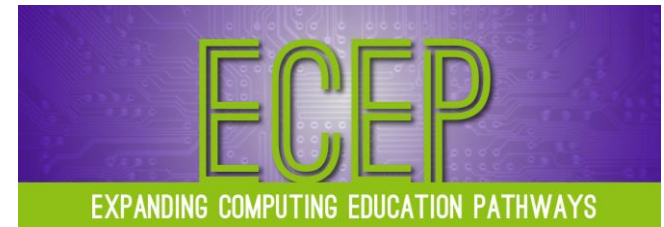




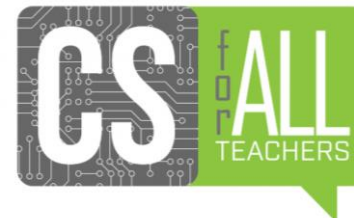
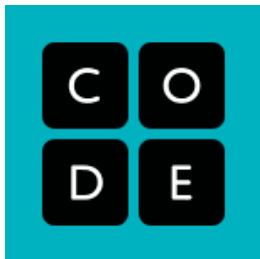
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COMMONWEALTH ALLIANCE FOR  
**CAITE**  
INFORMATION TECHNOLOGY EDUCATION

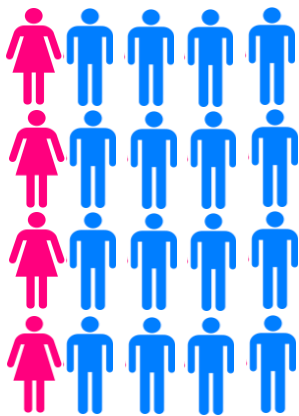
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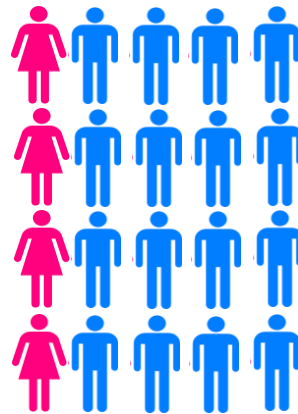
Google for Education



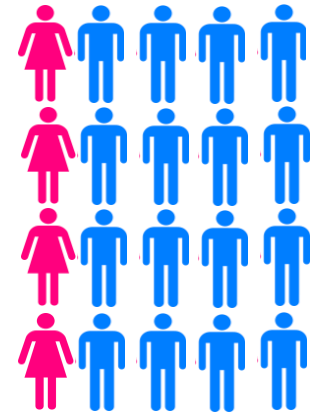
# Tech's diversity problem starts in K-12 CS



High school  
computer science



University  
computer science



Software  
workforce

Women who try AP Computer Science in high school are ten times more likely to major in it in college, and Black and Hispanic students are seven times more likely.

Sources: College Board, National Center for Education Statistics, Bureau of Labor Statistics

Tech is everywhere – *what if diversity in tech isn't?*

Without their participation, talents, and creativity, our Nation cannot meet its imperative for a globally competitive, computationally savvy workforce and we cannot hope to achieve the appropriate scientific, technological and economic innovations that will serve our highly diverse society.

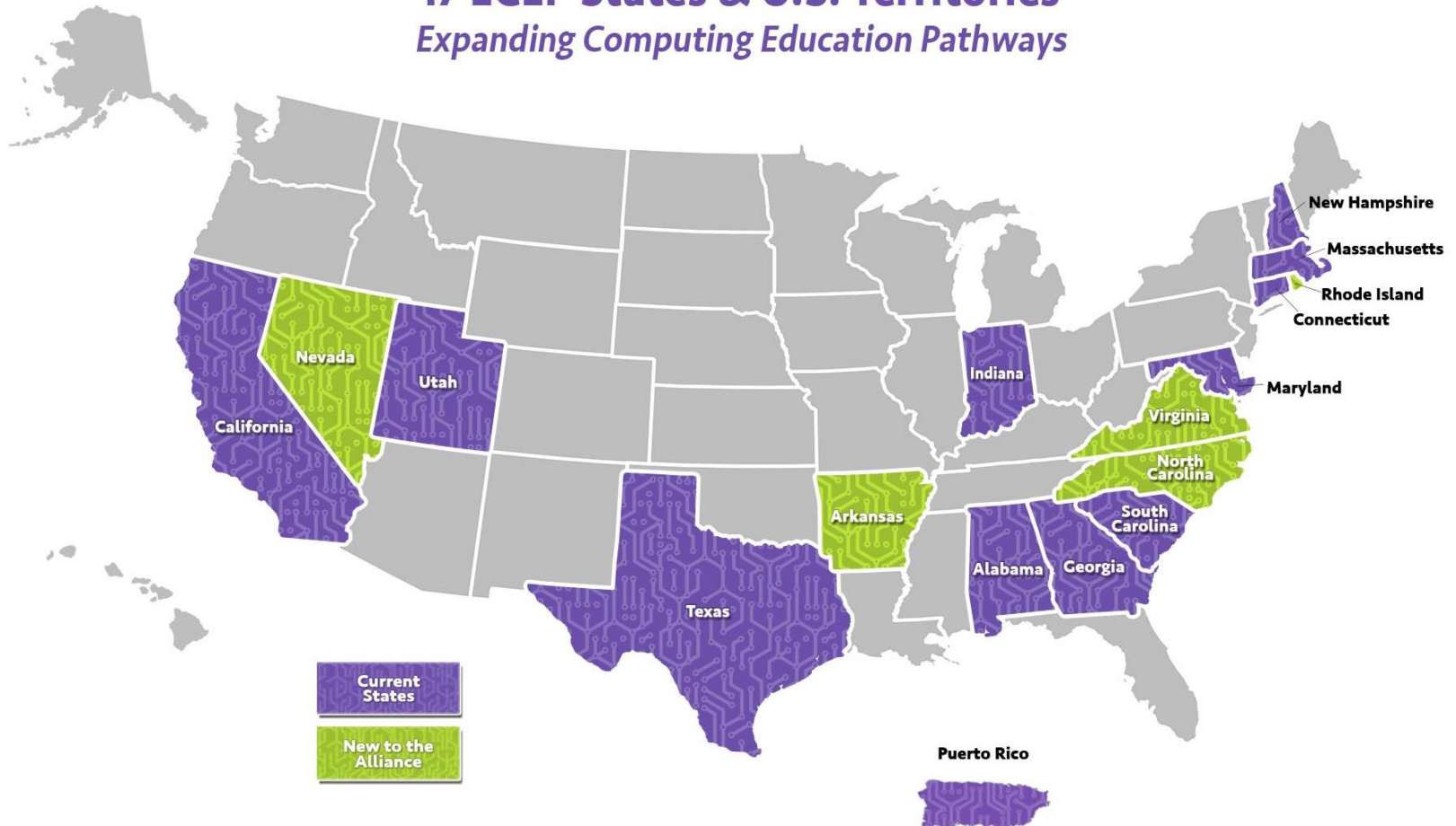
Source: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503593](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503593)





# 17 ECEP States & U.S. Territories

## *Expanding Computing Education Pathways*



# ECEP Community, Services & Interventions

## Community

- Virtual meetings
- Annual meetings & summits
- Collaborative website & public site

## Services

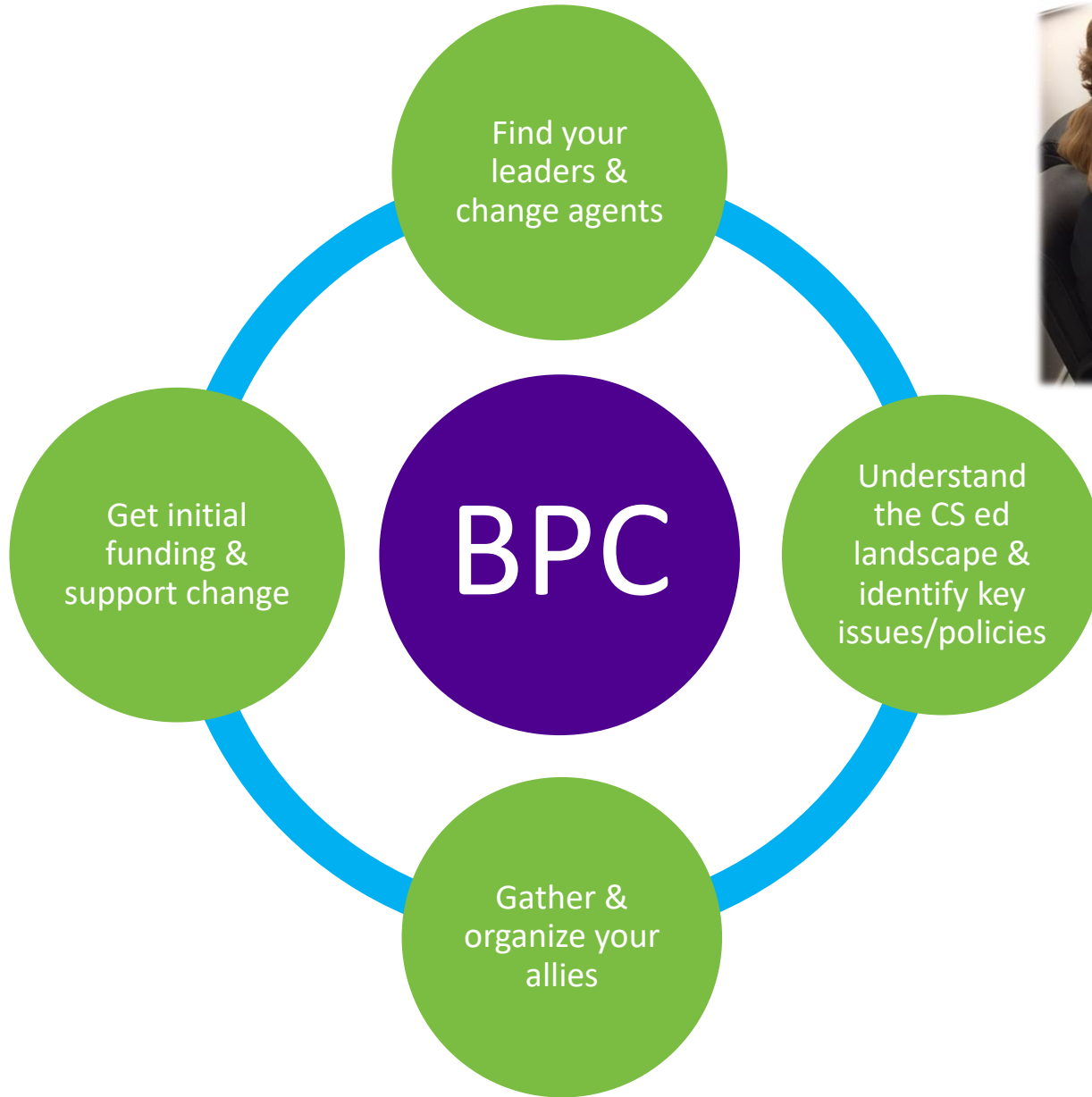
- Mini-grants
- Summer computing camp model, workshop & seed grants
- Train-the-trainers to develop teacher PD leaders
- Experts Bureau
- NCWIT resources

## Interventions & models

- Rise Up 4 CS – program to help students pass AP-CS A exam
- Artbotics
- Evaluation models
- How to Change a State model

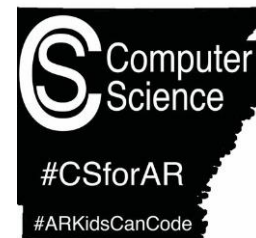


# ECEP 4 Stage Model 'How to Change a State'



# ECEP State-level initiatives

- Writing landscape report
- Developing strategic plans
- State summits
- Building advisory committees
- Educational policy – state level and/or districts
  - Graduation requirements
  - College admission requirements
  - Standards/frameworks
  - Curricula
  - Teacher credentialing
  - Teacher pre-service training
  - Teacher professional development
- Raising public awareness – advocacy
- Raising resources – money, collaboration & partners

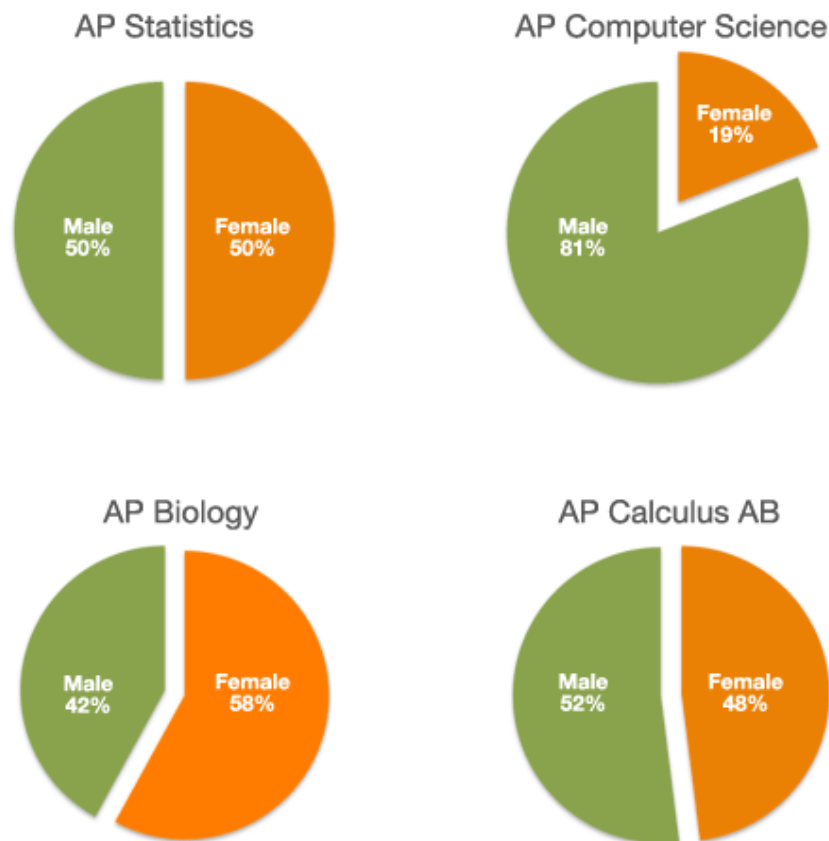


# ECEP Team in Utah



# College Board AP Computer Science A Exam

## Male vs. Female Enrollment 2011 AP Exams



Source: Graph courtesy of Exploring Computer Science

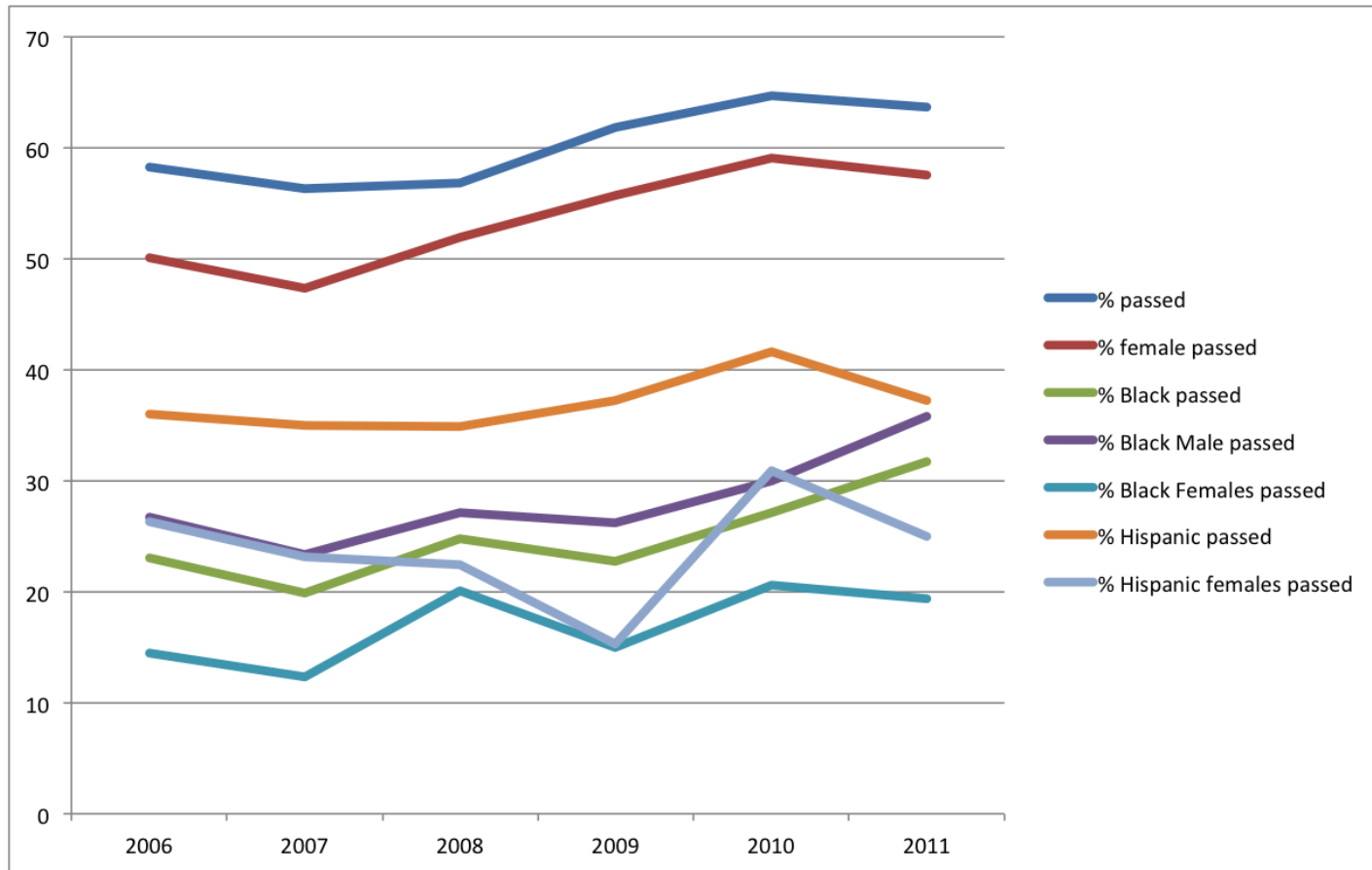
Data Source: College Board, Advanced Placement (AP) Exam Data

2011, <http://professionals.collegeboard.com/data-reports-research/ap/data>.



# College Board AP Computer Science A Exam

## Pass Rates in AP CS A Exam (2006-2011)



Source: Graph courtesy of Barbara Ericson

Data Source: College Board, Advanced Placement (AP) Exam Data

2011, <http://professionals.collegeboard.com/data-reports-research/ap/data>.

# Sisters Rise Up 4 CS (Runs October - May)

- Modeled after Project Rise Up 4 CS (started in January 2013)
- In-person kick-off event
- Monthly in-person help sessions (3 hours long)
- Weekly webinars run by college students
  - Same webinar run twice a week (1 hour long)
  - Discussed sample exam topics
- Students asked to report AP CS Exam scores
- Cost: under \$5000



# Sisters Rise Up Results

Location and Year	Number Enrolled	Pass Rate (Completers Only)
Georgia 2014-2015	21	50% (6 out of 12)
Georgia 2015-2016	20	43% (3 out of 7)
Georgia 2016-2017	21	67% (4 out of 6)
UT 2016	8	100% (2 out of 2)

## **Project Rise Up 4 CS (underrepresented students):**

- Georgia (Georgia Tech)
- Maryland (Bowie State University and University of Maryland, College Park)
- Florida (Florida International University)

## **Project Rise Up 4 CSP (underrepresented students, new AP CSP exam)**

- Georgia (Georgia Tech)
- California (University of California, San Diego)



# Sisters Rise Up Resources

See bottom of ECEP webpage on Rise Up Projects

<https://ecepalliance.org/services/rise-up-4-cs>

## **Barbara Ericson's eBook on how to run Sisters Rise Up 4 CS**

- Hints on Recruiting, Kickoff Meeting, In-Person Help Sessions
- Content for Webinars

## **Java Review for the AP CS A Exam eBook**

- Introduces topics covered by the AP CS A Exam
- Includes interactive questions, sample multiple choice and free response questions for practice

*"I used to not like computer science at all. The only reason I took the course is because my dad told me. Then here, I really like seeing the students and how kind of passionate I guess they are about it and seeing other people that do it, too. So, it made me more interested."*

*- Georgia Tech Sisters Rise Up 4 CS participant*







# ECEP Questions & Answers

<https://ecepalliance.org/>



# How can you get involved in building CS pathways?

- If you are in an ECEP state: <https://ecepalliance.org/about/alliance-members>
- Start learning about the landscape of CS education in your state:
  - [State of the States Report](#)
  - [Code.org Stats page](#)
  - discover who, what, when, where and how CS education is being taught in your local schools
- If you are an educator, consider tinkering or enrolling in CS professional development
  - Hour of Code
  - Mobile CSP, AP-CS Principles, AP-CSA, ECS
  - Scratch, PencilCode
- If you are a OST program director, gather resources and launch a new CS program
- Start planning for CS Education Week now...





# Computer Science Education Week

DECEMBER 4-10, 2017

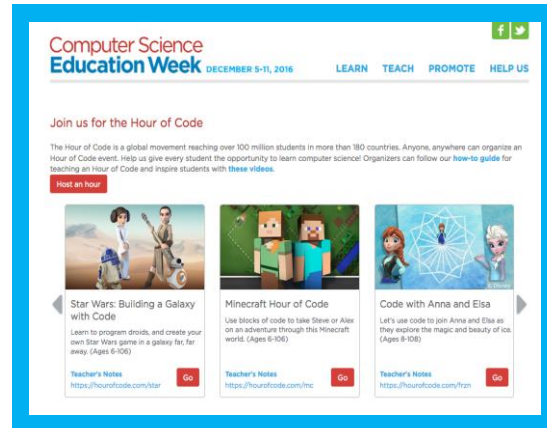
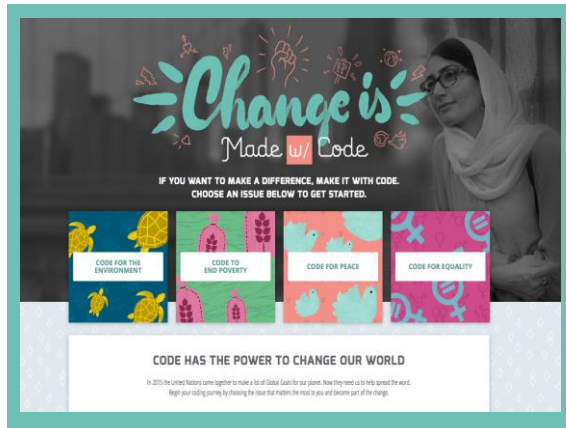
- How you arrive at recognizing the the importance of CS education doesn't matter, girls are being left out of CS and CS pathways.
- CS Education Week is a great way to:
  - Provide more girls access to CS
  - Build momentum for CS in your community
- The history of CS Education Week:
  - Launched in December 2009 as an advocacy initiative for policy efforts
  - In year 2 the focus was expanded to a broader audience, K-12
  - In 2013, the CS Education Week Chairs allowed Code.org to organize around their theme of "Hour of Code"
  - CS Ed Week and Hour of Code now reaches over 100 million students



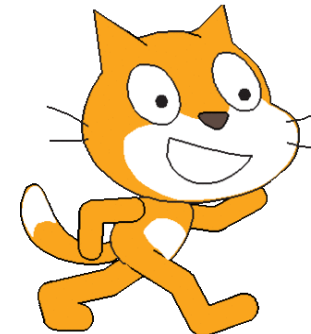
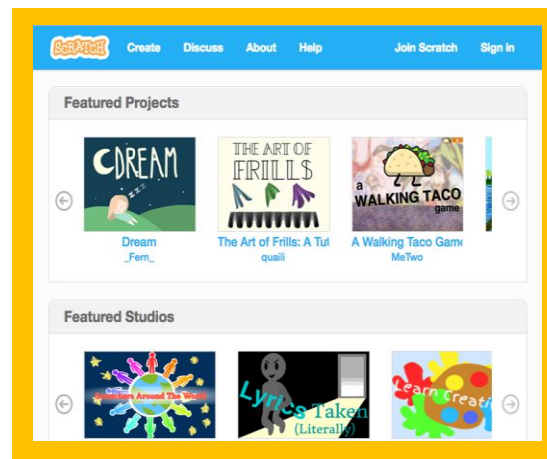
## CS Education Week: Advocacy & Activity



# CS Education Week: Programs, Projects & Engagement



- Made with Code
- Hour of Code™
- Scratch
- MIT App Inventor
- Quorum



# Building a successful CSEdWeek event

- Know your audience and build your event accordingly
  - Who is the event designed to engage?
  - How will your event increase access to diverse populations?
  - Why are you holding an event?
- You don't have to be an expert in CS
  - Collaborate – build partnerships
  - Use the many online resources available to you
  - Be a facilitator, consider that all of the participants are tinkering and learning together
- Test the technology – no wifi can ruin anyone's day, so can missing passwords, and computers that haven't been updated
- This might be the first time that a student is engaging in CS – make it memorable for the right reasons



# CSEdWeek Questions & Answers

34,733 events registered for Hour of Code 2017



# Questions?



# Community Engagement





# General NGCP Updates

- Don't forget to submit the National Girls Collaborative Project Services Guidance Form
- New Resources on Public SharePoint
  - Champions Board Matrix
  - Editorial Calendar
  - Champions Board and Leadership Team applications
- Strategic Planning Update



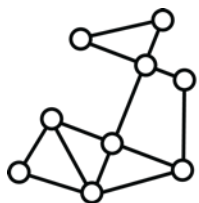
THE FEMALE LEAD

# SEEING IS BELIEVING

60 WOMEN WHO SHAPE OUR WORLD  
THEFEMALELEAD.COM  
#ShesMyInspiration

[www.thefemalelead.com/for-schools](http://www.thefemalelead.com/for-schools)

# Past NGCP Webinars



Creative Technology  
Research Lab

## Universal Design for Learning:

Strategies for Teaching to  
Students of All Abilities



<http://ngcproject.org/events>

# Next Collaborative Leadership Teams Meeting: January 10, 2018



**Have a wonderful holiday season!**