Engaging Underrepresented Students in Computer Science

Presentations
● Tapia 2016 “Engaging Underrepresented Students in Computer Science” panel

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Books
● Stuck in the Shallow End: Education, Race and Computing
● Unlocking the Clubhouse: Women in Computing

Affinity Groups & Networks
● /dev/color
● Women Who Code
● SHPE
● NSBE
● Black Men in Tech
● Women of Color in Tech Bay Area
● Latin@s in Tech / Techqueria
● HBCU to Startup
● Digital Undivided
● A2Mend

Conferences
● Wonder Women Tech Conference
● Tech Inclusion
● Write Speak Code
● Tapia Diversity in Computing
● Grace Hopper
● AfroTech Conference
● Women Who Code Conference

Curricular vision/course offerings
● National Science Foundation Directorate for Computer & Information Science & Engineering (CISE)
● Center for Minorities and People with Disabilities in IT
● Exploring Computer Science
● Computer Science Teacher’s Association CS Standards
● world.kano.me - Github for youth
● ACM/WGBH’s “New Image of Computing” (NIC - multi-phase project that aims to improve the image of computer science among high school students (with a special focus on gender and ethnic disparities)
- *Beauty and Joy of Computing* - An AP CS Principles course
- *My CS* - curriculum for Middle School students
- *Thinkersmith* - unplugged CS lessons

**In School: CS Teachers/PD Opportunities**
- *TEALS*: Technology Education And Literacy in Schools (in-school CS volunteer teachers)
- *Code.org*
- *Exploring Computer Science*
- *Bootstrap*
- *Learn to Code: Microsoft Virtual Academy*
- *Engage - CS Edu Engagement practices*
- *All Kids Can Code: 4 Factors for Success* (Avondale, AZ)

**Out of School:**
- *Level Playing Field Institute* - Level Playing Field Institute is committed to eliminating the barriers faced by underrepresented people of color in science, technology, engineering and math (STEM) and fostering their untapped talent for the advancement of our nation.
  - SMASH CS curriculum - The Summer Math and Science Honors Academy (SMASH) is a free of cost, STEM-intensive, college preparatory program for underrepresented high students of color. SMASH boasts a rigorous 5-week, 3-year summer STEM enrichment program which provides access to rigorous coursework and access to mentors, role models, and support networks of students of color.
  - Hackathons
- *Black Girls Code*
- *Hack the Hood*
- *#YesWeCode* - “The #YesWeCode initiative targets low-opportunity youth and provides them with the necessary resources and tools to become world-class computer programmers.”
- *Qeyno Labs* - hackathons for underrepresented youth of color
- *Girls Who Code*
- *Hidden Genius Project*
- *Find a Local CS Class* - Code.org
- *Sabio,la*
- *Telegraph Academy* - partnership with Hackbright to provide coding bootcamps to underrepresented folks of color
- *Railsbridge* - trains women in Ruby on Rails
- *NCWIT Promising Practices* and other *Resources*
- *Code 2040*
- *Engineering is Elementary*
- *Tech Bridge Girls*
- *Teens Exploring Technology*
- *Latinos in Tech Innovation and Social Media*
- **Pluralsight**
- **Khan Academy**
- **CoderDojo**
- **Greenfoot Programming Club** [online resources available from the UK]

**Online courses**
- **Coding Landscape Database** - The Kapor Center
- **Online CS Courses** - Code.org
- **Scratch** - Scratch visual programming

**Resources for teaching tech without tech or with low tech**
- [https://www.fractuslearning.com/2014/05/07/teaching-without-technology/](https://www.fractuslearning.com/2014/05/07/teaching-without-technology/)
- [http://csunplugged.org/activities/](http://csunplugged.org/activities/)
- **Thinkersmith** - unplugged CS lessons

**Funding for CS education**
- District funds
- State funds
- **NSF**
- Corporations/Tech Companies - e.g. Google, Intel, HP, Comcast, Microsoft, etc.
- **Kickstarter**
- **Donors Choose**

**Sample CS program evaluation resources**
- **Sample pre-survey CS-related items** (from LPFI’s SMASH program)
  - *Post-survey is identical, plus the following:*
    - My computer science class has improved my computer science knowledge and skills. (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree)
    - How satisfied were you with your SMASH computer science course this summer? (very dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied, very satisfied)
    - What would make you more interested in pursuing computer science in high school and college? (open-ended)
    - What was your favorite computer science activity and why? (open-ended)
- **SMASH CS curriculum pages (includes assessments)**
  - **CS 1**
  - **CS 2**
  - **CS 3**