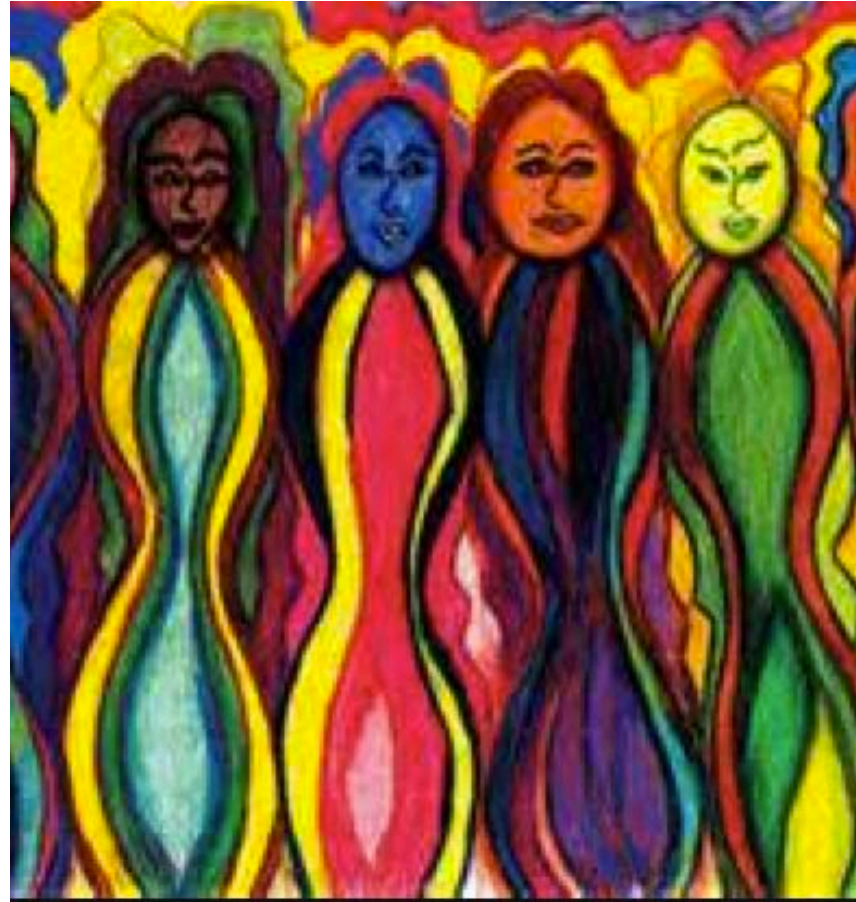# Girls of Color & Culturally Responsive Approaches to Computing

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Data on Black Women and Girls in Computing

- Just **264** Black female high school students took AP CS A in 2013, which is less than **5%** of all females participating in AP CS A nationwide.

- Black women currently comprise **16%** of the U.S. female college-aged population (18-24), but just **3%** of all computer science Bachelor's degree earners.

- Black women earn computer science degrees (3%) at rates **lower than** their Black male (7%) and white female counterparts (8%).

- **70%** of all Black CS degree earners are male.

- Black women earn just **10%** of all doctorate degrees awarded to women in computer science, and they earn doctorate degrees at a slightly lower percentage than their Black male peers (1.9% compared with 2.8%).

- Black women remain significantly under-represented in tenure-track faculty positions in computer science and represent just **3% of the computing workforce**.

Barriers to CS Participation for Black Women and Girls

- Women of color experience having a **combination** of two or more marginalized and negatively stereotyped identities.

- Thus, it is critical to examine their **nuanced experiences** of the following barriers (known to affect women and people of color in science and computing):

  - Early exposure opportunities, teacher/parent perceptions and encouragement

  - Science and math achievement in K-12

  - Racial and/or gender discrimination, microaggressions

  - Lack of access to diverse mentors, peer networks, and role models

  - Isolation, unwelcoming climate, and inadequate support

  - Stereotype threat and endorsement of negative stereotypes about race and/ or gender

Understanding Intersectionality

☐ Intersectionality is a multifaceted analytic tool that encourages researchers to take into account the complexities of experiences for women of color. It is based on the notion that *racial identities* often collide with other *social identities* to produce disparate outcomes (Crenshaw, 1991).

- **Structural-** focuses on the institutional subordination of women of color due to unspoken gendered roles in schools and the workplace.

- **Political-** articulates how women of color are forced to detached their diverse identities in order to align with political struggles, societal norms, and community alliances for social advancement.

- **Representational-** focuses on the stereotypes and gendered expectations of women of color that impact their relationships with others and their perceptions of themselves (Crenshaw, 1991).

Activity #1:
Identifying Your Multiple Identities

1. State your multiple identities. These are not affective qualities. They should be connections to people, events, places, materials things, systems of beliefs, and behaviors.

2. Read the following circumstances.

3. Write which identity markers become most significant when considering these circumstances and events.

4. Choose one or two of these events from the list that are significant to different identity markers.

Culturally Responsive Computing (Scott, Sheridan, & Clark, 2014)

(1) All students are capable of digital innovation

(2) The learning context supports transformational use of technology.

(3) Learning about one's self along various intersecting sociocultural lines allows for technical innovation.

(4) Technology should be a vehicle by which students reflect and demonstrate understanding of their intersectional identities.

(5) Barometers for technological success should consider who creates, for whom, and to what ends rather than who endures socially and culturally irrelevant curriculum.

Culturally Responsive Computing

Activity

1. Open up envelope on your table
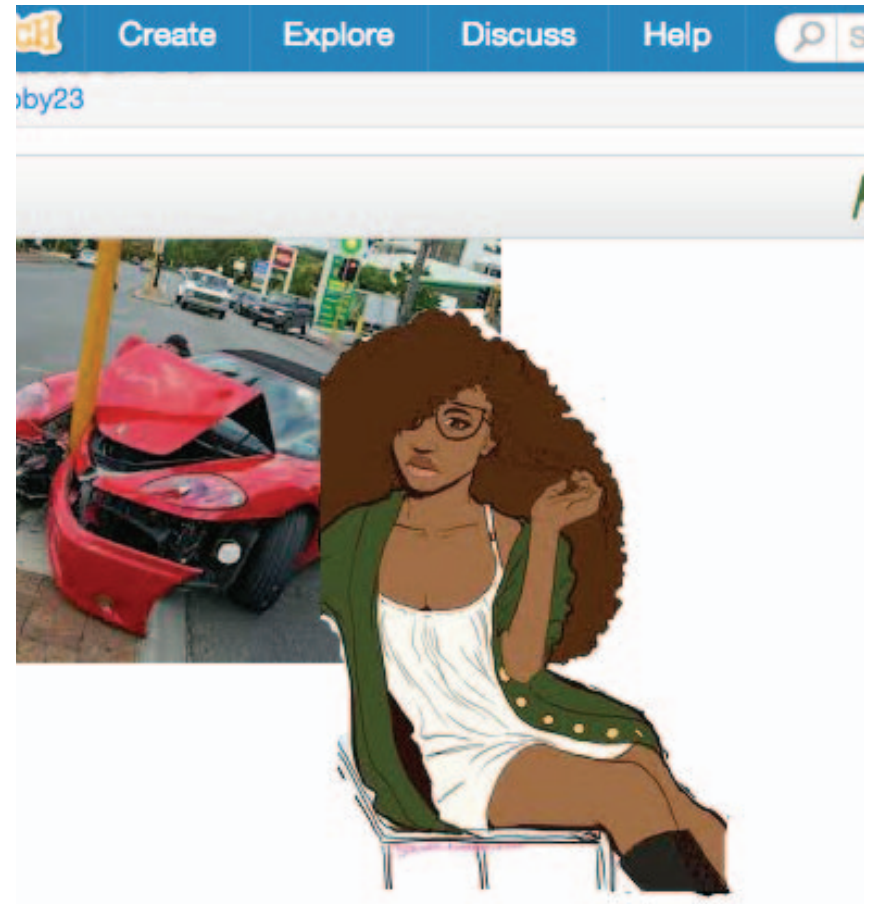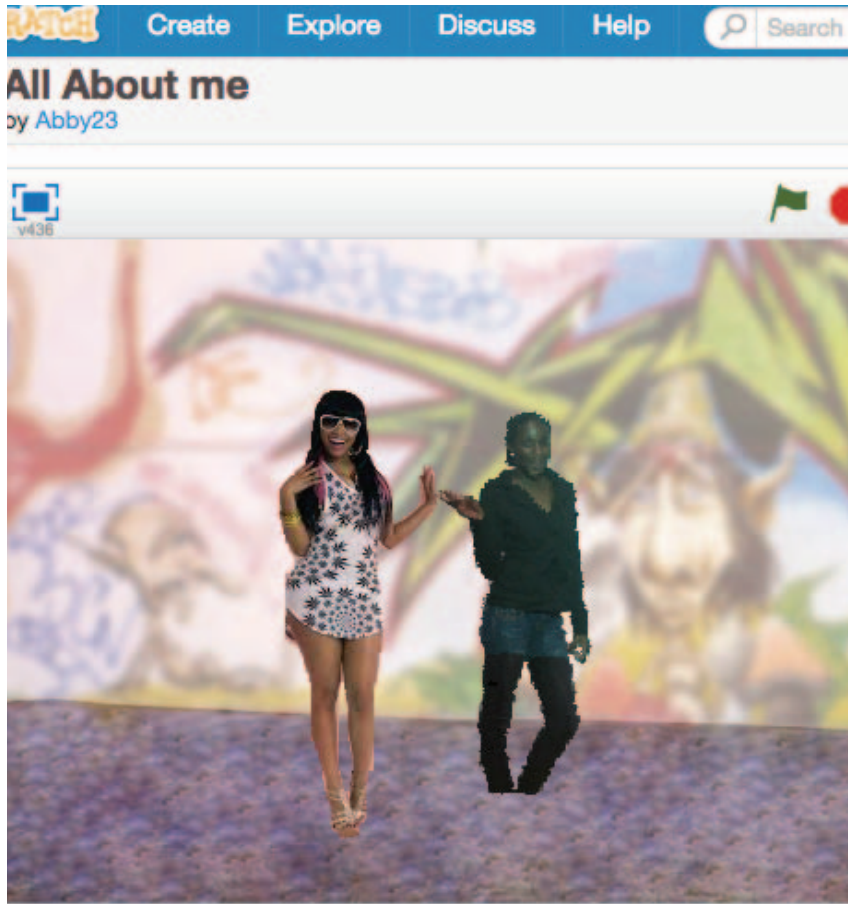2. Using Google, search for images using term found in envelope e.g. woman +image
3. Discuss images

COMPUGIRLS

Take-Aways

- ❑ Serving the needs of Black girls (all girls!) is a complex process.
- ❑ Interdisciplinarity is key
- ❑ More than technical skill acquisition
- ❑ Know themselves

"It is not our differences that divide us. It is our inability to recognize, accept, and celebrate those differences." Audre Lorde