

# Reimagining Equitable Computer Science Education: Culturally Relevant Computing in Practice

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## ABSTRACT

Now more than ever, computer science teaching needs to reflect the interests and passions of the young people it serves. This is particularly true for students in Black, Latinx, and Indigenous communities. This panel of thought leaders will offer perspectives and valuable information grounded in research and theoretical literature that cultivate more meaningful, culturally relevant practices in K-12 CS Education. Participants will walk away with insights about the importance of this issue, the literature base, and practical applications for creating equitable CS classrooms and being advocates for positive change in CS classrooms and school communities.

### Categories and Subject Descriptors

• **Computing Education** → **Computer Science Education**

**Keywords:** Equity; Race; K-12; Culturally Relevant Computing

## 1. SUMMARY

The underrepresentation of Black, Latinx, and Indigenous students in K-12 computer science education, specifically, and the computing workforce more broadly, is well-documented [2,5,6,7,8,9]. While much attention has focused on exposure and increasing access to computing courses, efforts to address racial inequities in computing, curriculum and pedagogy must also draw upon students' cultural knowledge, counteract stereotypes, build identity, and make meaningful connections to lived experiences and interests. Grounding the conversation in the research and theoretical literature on culturally relevant, responsive, and sustaining pedagogies [1,3,4,10,11], this panel of experts from different backgrounds will (a) examine definitions of culturally relevant CS, (b) move beyond buzzwords to describe culturally relevant computing education practices in K-12 classrooms and communities, and (c) describe strategies for integrating community needs, perspectives, and assets into CS education.

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By bringing together panelists with strong backgrounds in education research, CS teaching, and grassroots community programming, this panel will provide frameworks, strategies and examples of ways to reimagine inclusive CS classrooms.

## 2. PANEL STRUCTURE

- **Introductions:** The moderator will introduce each panelist (5m).
- **Background:** The moderator will provide an overview about the theoretical and empirical research base on underrepresentation in computing and culturally relevant and responsive pedagogy (10m).
- **Definitions:** Each panelist will provide a definition of what culturally relevant computing means to them, including links to relevant resources for audience members. Attendees will also be asked to reflect and share their definitions in the chat function of the virtual interface to contribute to dialogue and learning (15 m).
- **Practical Applications:** Each of the three panelists will present perspectives of culturally relevant computer science in practice, from the perspective of teachers and community leaders. The presentations will conclude with concrete recommendations for implementing rigorous and authentic culturally relevant CS education in K-12 classrooms (30m).
- **Q&A and Reflection:** Throughout the session, the moderator will monitor the Q&A/chat function for questions or insights, and will collect these responses for a 20 minute virtual discussion. This dialogue with panelists will aim to push participants toward understanding and action (20m).

## 3. KALISHA DAVIS, MPA

As the CS Equity Curriculum Project Director at Kapor Center, Kalisha provides leadership and project management for all aspects of the Equitable Computer Science Curriculum Initiative, a multi-year initiative funded by Google.org to build a community of practitioners and cultivate more culturally relevant and asset-based approaches, practices, and resources in CS education (K-12). This project aims to develop a shared framework, built upon student, teacher, community, and research perspectives, for advancing equity in CS education. Kalisha has a wealth of experience convening stakeholders and building community-centered initiatives. Kalisha is the former Director of Community Outreach and Engagement at the Detroit Historical Society where she co-created the now nationally

award-winning initiative, *Detroit 67 Project: Looking Back to Move Forward*. This initiative engaged the Detroit community in an effort to reflect and meaningfully commemorate the 1967 uprising in Detroit. Kalisha's leadership provides an important opportunity to make connections between racial injustice, historical events, policies, and practices, and community experiences, and a re-imagination of equitable CS education.

#### 4. SHANA WHITE, M.A., Ed.S.

Shana V. White is a passionate computer science educator, with over 15 years of experience, currently teaching middle school in Gwinnett County Public Schools in Georgia. She works as an advocate for marginalized groups in education and has an unwavering commitment to providing opportunities for all students to engage in unique and relevant learning experiences. Shana believes in purposeful disruption of the status quo and encourages teachers to exercise autonomy and utilize meaningful collaboration to better meet the needs of all students. She has written and presented numerous articles on equitable CS teaching and co-founded the Inclusive STEM & CS Summit. She has received various accolades for her efforts in Edtech, most recently being named 2019 Georgia Tech Diversity and Inclusion Fellow, 2019 CSTA Equity Fellow, and the 2017 Outstanding Ed.S Scholar. Shana is also an Advisory Board member on the Equitable CS Curriculum Initiative Project

#### 5. TIA C. MADKINS, Ph.D.

Tia C. Madkins is an assistant professor in the STEM Education Program and Department of Curriculum and Instruction in the College of Education and a faculty research affiliate with the Population Research Center and the Center for the Study of Race and Democracy at The University of Texas at Austin. Her research focuses on supporting teachers to engage humanizing and equity-focused pedagogies to transform STEAM learning environments for minoritized students, especially Black girls. Her research in CS education specifically focuses on supporting inservice teachers to understand and implement culturally relevant teaching practices in out-of-school settings. She taught PK-8 students in LAUSD and OUSD prior to earning her Ph.D. in education at the University of California, Berkeley.

#### 6. OLATUNDE SOBOMEHIN

Olatunde Sobomehin is the CEO and co-founder of StreetCode Academy, an East Palo Alto-based non-profit that offers free tech classes to communities of color. StreetCode Academy is one of the fastest growing organizations in the region, growing from 20 students in its inaugural class in 2014, to now serving over 2,000 students annually with over 40,000 hours of free instruction. StreetCode Academy works intentionally to provide meaningful exposure, engagement and training in computing-related areas to create a new generation of technologists of color. Their goal is to create a community-based ecosystem that is preparing the

next generation to powerfully impact the technology industry. His work in tech education and community building has earned recognition as a 2018 Aspen Institute Scholar, a 2019 Praxis Fellow, and a 2020 Social Entrepreneurship Fellow at Stanford University. Olatunde is a proud graduate of Stanford where he majored in Urban Studies. He is also an Advisory Board member on the Equitable CS Curriculum Initiative Project.

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