

Keynote Panel Discussion

Expanding Horizons and Fostering Diversity

With Felicia Simpson (Winston-Salem State University), Jacqueline Hughes-Oliver (North Carolina State University), Janylle Carter (Diablo Valley College), Prince Afriyie (University of Virginia), Samuel Echevarria-Cruz (Austin Community College)



Outline

- *Introductions (5 mins)*
- *Topic 1: Barriers (30 mins)*
 - *Felicia, Jackie, Jamylle, Prince, Samuel (3 mins each)*
 - *Discussion (15 mins)*
- *Topic 2: Potential solutions (30 mins)*
 - *Samuel, Prince, Jamylle, Jackie, Felicia (3 mins each)*
 - *Discussion (15 mins)*
- *Audience questions for panelists (25 mins)*
 - *Type questions under Q&A throughout session*

Topic 1: Barriers

What are some barriers that discourage or prevent students in under-represented groups from pursuing or succeeding in statistics courses and careers?

Topic 1: Barriers

F. Simpson

- **Unaware of the career opportunities in statistics**

- Students may have the appropriate quantitative skills but are unaware of opportunities in statistics and biostatistics.

- **Lack of quantitative background**

- When applying for statistics program, students may not yet have the appropriate quantitative background, but are intellectually capable and willing to advance those skills once they learn about statistics

- **Lack of mentorship**

- Many students do not have the mentoring and advising they need to be successful in their undergraduate and graduate programs in statistics as well as with their preparation for professional careers in academics

Jackie's thoughts ...

- *Lack of awareness*
- *Isolation*
- *Divergence of career options determined by middle-school math*
- *Students believe they are more prepared than they actually are*
- *Culture of competition and not cooperation*
- *Students afraid to use their resources*



Lift Ev'ry Voice: Supporting DVC Umoja Students in Math

Carter, Jamyllé. "Lift Ev'ry Voice: Supporting DVC Umoja Students in Math." *MATH VALUES*, MATH VALUES, 27 July 2020, www.mathvalues.org/masterblog/lift-evry-voice-supporting-dvc-umoja-students-in-math.



Classmates

- Isolation
- Disconnection
- Stereotype Threat



Instructors

- Unwilling To Repeat Material
- Underestimation
- Targeting Students

BLACK, BROWN, BRUISED

How Racialized STEM Education
Stifles Innovation

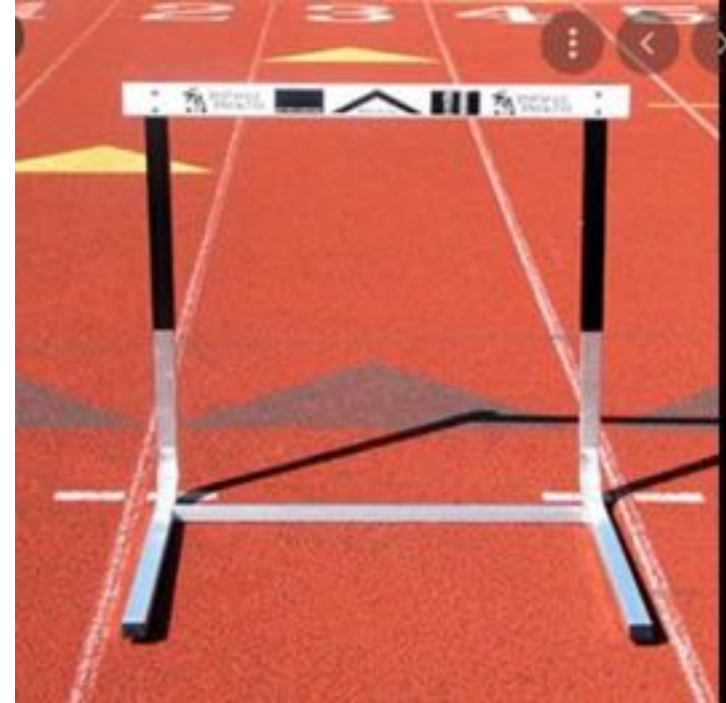
EBONY OMOTOLA MCGEE

Foreword by David Omotoso Stovall



Barriers ~ Prince Afriyie

1. Lack of exposure to statistics and data science
2. Lack of belonging due to deficiency of similarity
3. Limitation by geographic area and the consequent vicious cycle



Statistics, Identity and Inequity

- Traditional uses of statistics to promote and support...
 - Discriminatory narratives
 - Discriminatory policies
 - Discriminatory outcomes

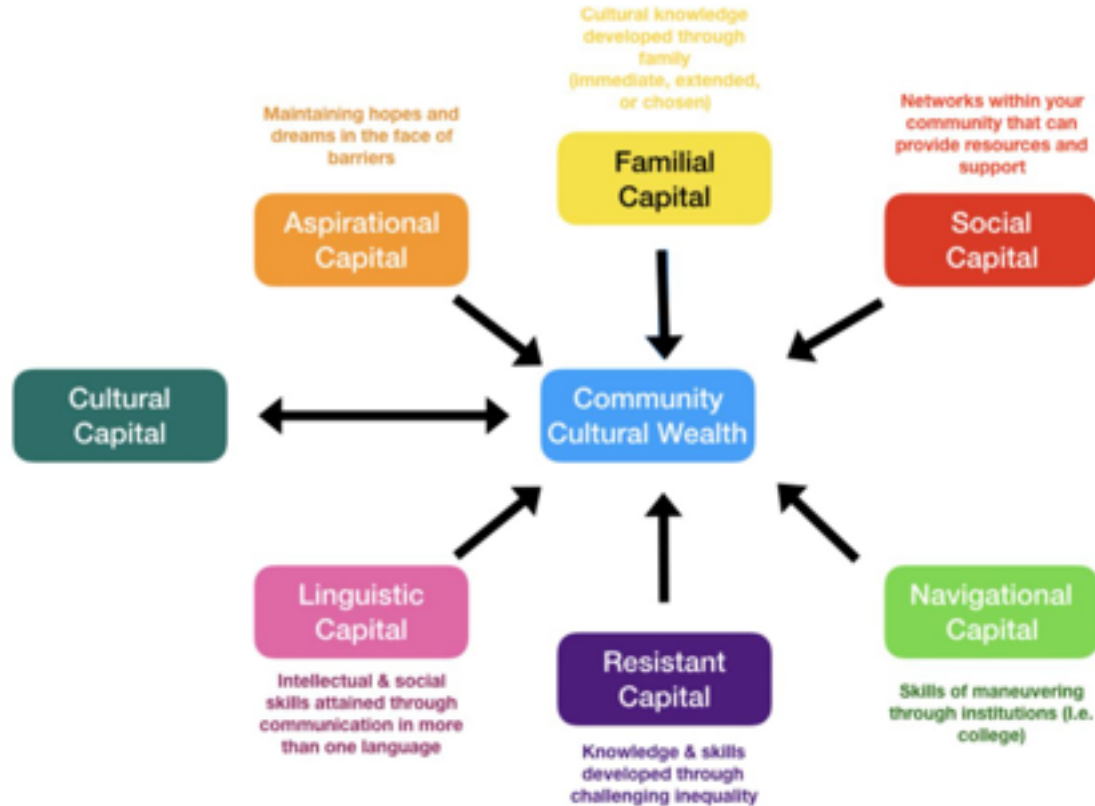
Topic 2: Potential Solutions

What are some potential solutions (in recruitment, curriculum, courses, culture, ...) for encouraging such students to pursue and succeed in statistics courses and careers?

Potential Solutions...Community Cultural Wealth

- Tara J. Yosso (2005) Whose culture has capital? A critical race theory discussion of community cultural wealth, *Race Ethnicity and Education*, 8:1, 69-91
- “...community cultural wealth is an array of knowledge, skills, abilities and contacts possessed and utilized by Communities of Color to survive and resist macro and micro-forms of oppression.” (10)
- Communities of Color nurture cultural wealth through at least six forms of capital such as aspirational, navigational, social, linguistic, familial, and resistant capital

A Model of Community Cultural Wealth



Jackie's thoughts ...

- *Tricky question: who are we targeting?*
- *Marketing campaign to create/fix our “brand”!*
- *Mentoring program to create connections at many levels*
 - *With students - middle & high school*
 - *With teachers & counselors - middle & high school*
 - *With parents*
 - *With two-year college students*
 - *With undergraduate statistics majors*
- *Incorporate more “hands-on” learning opportunities in the curriculum*



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Solutions! ~Prince Afriyie

1. Expanding opportunities
2. Mentorship
3. Inspiring our students to transcend beyond
 - Dissimilarities
 - Vicious cycle



Topic 2: Potential Solutions

F. Simpson 1

- **Increasing Mentoring Program for Underrepresented Minority (URM)**
 - Developing and implementing more conference-based mentoring program as a means to foster a long-term sustainable mentor/mentee relationships that can be crucial to students success in their undergraduate and graduate programs in statistics as well as with their preparation for professional careers in academics
- **Providing MORE support and exposure to existing Underrepresented Minority (URM) Pipeline Initiatives in Statistics and Biostatistics**
 - **Fostering Diversity in Biostatistics Workshop (FDBW):** The goal of the Fostering Diversity in Biostatistics Workshop is to introduce underrepresented minority students to biostatistics as well as connect students with professional statisticians in academia, government, and industry
 - **StatFest Conference: StatFest** is a one-day conference aimed at encouraging students from under-represented groups to consider careers and graduate studies in the statistical sciences (*Registration is open now*)
 - **JSM Diversity Mentor Program:** Brings together historically underrepresented minority statisticians and data scientists at early- to mid-career levels with senior-level statisticians and data scientists from academia, government, and the private sector.

Topic 2: Potential Solutions

F. Simpson 2

- **Introduce students earlier to statistics and biostatistics (middle school, high school)**
 - More universities mathematics and statistics department should form partnerships with middle and high schools that serve underrepresented students
 - Summer research opportunities in statistics and biostatistics for high school students
- **More universities/organizations need to develop a diversity/inclusion plan**

Questions?

