
Terrell R. Morton, Ph.D.
Asst. Professor, Identity and Justice in STEM Education
University of Missouri-Columbia
@DrTRMorton | mortontr@missouri.edu | https://linktr.ee/Mortontr

Slide 1. Dr. Morton’s Current Research Projects
a. Re-Envisioning Culture: Addressing Black Student Retention in Undergraduate Biology Education
   i. Twitter: https://twitter.com/REC_Network1
   ii. Website: https://qubeshub.org/community/groups/recnetwork

   1. Please consider joining the network!

b. Louis Stokes Regional Center of Excellence for the Study of STEM Interventions
   i. Project Description: https://www.nsf.gov/awardsearch/showAward?AWD_ID=2020709&HistoricalAwards=false

c. Transforming the Natural Sciences at Mizzou: Retain, Belong, Lead, THRIVE
   i. Twitter: https://twitter.com/MuThrive
   ii. Website: https://education.missouri.edu/learning-teaching-curriculum/thrive/

d. Critical Race Theory – Dialogic Learning Communities

e. Black and Brown in STEM

Slide 2. Dr. Morton’s Publications
a. https://linktr.ee/Mortontr

Slide 3. Existing Research Examining STEM Degree Completion – National Statistics
a. According to the National Science Foundation:
   i. Approximately 23% of Black students and 28% students entering into college express interests in studying STEM.
   ii. From 2000 – 2015, 9% of STEM degrees go to Black students and approximately 18% of the degrees go to Latinx student.
   iii. When looking at the difference between intention to major in STEM vs graduating with a STEM degree, we find that “something” is taking place within their college experience that leads to significant attrition.

b. Supporting Text:

Slide 4. “Fairy Godmother Approach”
a. When examining existing research as well as current university approaches to addressing the problem with retaining Black and Latinx students in STEM, we find that the majority of the solutions seem “fairy godmother” like where they attempt to “dress up” the individual so that they can meet the needs and expectations of society rather than address structural issues in need of change.

b. This perspective is often rooted in “deficit-mindsets” about Black and Brown students and their capabilities as most of the programs and opportunities are designed in ways to attempt to “give” these students “something they lack” because they are “minorities” or “lesser than” than the standard or norm.

Slide 5. **What is the Connection?**

Slide 6. **The Iceberg Model for Systemic Thinking**

a. The need to think deeply about what we are “seeing” when looking at the data and our responses to the circumstances.
   i. Going from addressing the observable “symptoms” to thinking about the “root causes” of the problems in efforts to generate “real” solutions.

b. Supporting Text:
   i. Iceberg Model: [https://ecochallenge.org/iceberg-model](https://ecochallenge.org/iceberg-model)

Slide 7. **What Do You See?**

a. In using the “Maleficent story” to discuss differences in how the character can be perceived as either villain (animated version) or activist (live-action version) based on the backstory provided, we have to ask ourselves, “what do we see” when looking at the students entering into our learning spaces and whether or not our perceptions of them (their abilities, capabilities, interests, desires, etc.) account for their full lived experience or solely our individual biases.

Slide 8. **Perception, Perspective, Positioning**

a. Given the way that perception works, connecting back to our philosophies and world views and lived experiences, how we **Perceive** individuals and the extent to which they are “less than” dictates the solutions we develop, how we implement those solutions, how we interact with other people, and how other people respond to us.

b. How we enter into our work (i.e., research, teaching, service, programming) is based on our perceptions and understandings of life and the overarching philosophical paradigms that ground our perspective of what is and what is not truth, reality, knowledge, etc.

Slide 9. **Who Am I?**

a. Educational Pedigree
   i. North Carolina A&T State University (B.S. Chemistry, 2011)
   ii. University of Miami (M.S. Neuroscience, 2013)

b. Identities
   i. Scientists, Advocate - Activist, Speaker, Civil Servant, Family
**Slide 10. Positionality**

a. Shaped by my identities, privileges exposures, commitments, and actions.
   i. Identities: Social identities (e.g., race, gender, religion) and socialization processes.
   ii. Privileges: Educational pedigree
   iii. Exposure: Experiences as a Black man, exposure to others, readings and conversations through graduate school and beyond.
   iv. Commitment: Goals related to racial justice, desire to enact transformative change,
   v. Action: Decision to research Black women in STEM, decision to conduct research that honors, empowers, and promulgates participants from strengths-based perspectives.

b. Supporting Texts:

**Slide 11. Critical Race Theory and PVEST**

a. Two overarching frameworks that guide my position and perspective, particularly when looking to examine Black and Brown students’ STEM experiences.

b. Critical Race Theory affords the opportunity to critique and examine the structure and the extent to which racism is present and operating within the different STEM environments.

c. PVEST helps examine the relationship between the external environment and the individual perceptions of and experiences with reality to note how external environments attempt to regulate student experiences and how students have the power (and where they have the power) to determine how to respond to those external cues.

d. Reference Texts:
Slide 12. Deep Dive into CRT

a. Tenets (Key Scholars)
   i. Interest Convergence – Derrick Bell, 1990
   ii. Racial Realism (Permanence of Racism) – Derrick Bell, 1992
   iii. Whiteness as Property – Cheryl Harris, 1993
   v. Intersectionality – Kimberlé Crenshaw, 1991

b. Contemporaries/Splinters (Key Scholars)
   i. AsianCrit (Robert Change; Mari Matsuda)
   ii. BlackCrit (Michel Dumas)
   iii. Critical Race Feminism (Adrienne Wing)
   iv. DisCrit (Subini Ancy Annamma)
   v. LatCrit (Fransisco Valdes)
   vi. QueerCrit (Fransisco Valdes)
   vii. TribalCrit (Bryan Brayboy)

c. Reference Text:

Slide 13. Whiteness as a Cultural Phenomenon

a. Whiteness as Property (Cheryl Harris)
i. Right to Disposition
ii. Right to Use and Enjoy
iii. Reputation and Status
iv. Absolute Right to Exclude

b. Phenomenology of Whiteness (Sara Ahmed, 2007)
i. How whiteness shapes our perceptions, standpoints/positions, and conceptions of normality and reality.

c. Emotionality of Whiteness (Cheryl Matias, 2016)
i. Constant (re)centering of whiteness through emotions that lead to stalling or quashing of race-related work and progress.

d. Hegemonic Whiteness (Nolan Cabrera, 2018)
i. Maintenance and reinforcement of white racial dominance through de facto social stratification.

Slide 14. Whiteness and Western Colonialism
a. Connection cultural imperialism and epistemic injustice through the rejection of Indigenous and Afrocentric ways of knowing, doing, and being.

Slide 15. Evidence in Education
a. Meritocracy – Standardize assessments for access, demarcations of learning/success.
b. Continued attacks against “progress” jurisprudence (i.e., cases against Affirmative Action and college admissions).
c. Essentializing of experience through the creation and reinforcement of umbrella categories and tokenized experiences.

Slide 16. Whiteness in STEM
a. Ideology: Western, Eurocentric, and “Objective”
b. Methodology: “Merit-Based,” “Colorblind,” “Experimental Design” to “prove”
d. Reference Text:
   i. PBS Timeline on Race


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**Slide 17.** Whiteness in/Through Social Justice

a. Conflating of DEI

b. Continued centering and re-centering of white interests

**Slide 18.** Now What?

**Slide 19.** Engaging in Dialogic Action

a. Embrace Racial Realism (realize that racism exists and is structural…naming the underlying power structures of oppression).

b. Explore your positionality (reflect on who you are, what you believe, why you believe it, and how it impacts the way you engage this work)

c. Raise your Critical Consciousness (expose yourself to materials, lived experiences, and information that help you “see” the world critically, structurally, and from the standpoint of those minoritized).

d. Engage in Dialogic action (work together in community with those you are looking to serve to make structural change).

e. Reference Text:


**Slide 20.** Critically Examine Yourself

a. Think about your power and privileges as it aligns with your social identities
Slide 21. Critically Examine Your Roles
   a. Think about the power and privileges you maintain given your institutional/community role
      i. Administrations
      ii. Faculty
      iii. Professional Staff
      iv. Students

Slide 22. Think about your Sphere of Influence
   a. What Can You Control?
   b. What Can You Directly Influence?
   c. What Can You Indirectly Influence?

Slide 23. Suggestions for ways to Optimize STEM Education
   a. Distrupt and remove all practices and policies that render Black and Brown as illegitimate, deficient, and unhuman.
   b. Establish classroom (lab) culture and norms that validate, appreciate, and integrate Black and Brown students’ identities, realities, and knowledge and experiences.
   c. Center the voices of Black and Brown people in the construction of policies and procedures related to access, engagement, and standards for success.

Slide 24. Reminder

Other Resources

feminism perspective. In P. Schutz & M. Zembylas (Eds.). *Advances in teacher emotions research* (pp. 323-342). Boston, MA: Springer.


