Critical Perspectives of ‘Broadening Participation’ in STEM and Mentoring

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Land Acknowledgement

Lim lemt.sh to the Schitsu'umsh people (Coeur d’Alene Tribe) for hosting us all as visitors to their homelands. I wish to acknowledge their presence and their continuing connection to the land and ancestors Since Time Immemorial.
“Working Breakfast” Agenda

- Introductions
- Epistemological considerations
- Discuss Culturally Sustaining Pedagogy and it’s connections to mentoring and Higher Education
- Critically discuss "Broadening Participation" in STEM
Introduction
Your Introductions

- At your tables: provide a *Quick* Introduction of yourself without mentioning your academic title or what you do. Instead, focus on the following question:

- Why are you committed to diversifying STEM? What is your motivation for engaging in this work?
“Epistemology constitutes an overarching theory of knowledge. It investigates the standards used to assess knowledge and why we believe what we believe to be true”

Patricia Hill Collins (1990)
Epistemological Considerations

- Black Feminist Epistemology
- Experiential Knowledge
- Dialogue
- Ethic of Personal Accountability
- Ethic of caring
Epistemological Considerations

Indigenous/Communities of Color
- Holistic understanding of the whole/ Relationality and connectedness
- Many Truths; Experiential
- Time is non-linear and cyclical

Eurocentric/Western/Academia
- Compartmentalized knowledge
- Truth based in “scientific method”
- Rationality and objectivity valued
- Time is linear and future oriented
Oppressed groups are frequently placed in the situation of being listened to only if we frame our ideas in the language that is familiar to and comfortable for a dominant group. This requirement often changes the meaning of our ideas and works to elevate the ideas of dominant groups.

— Patricia Hill Collins —

“Alternative epistemologies challenge all certified knowledge and open up the questions of whether what has been taken to be true can stand the test of alternate ways of validating truth”
Discuss:

- How is your institution/program/alliance thinking about or talking about epistemology?

  OR

- How is your program/institution/department/field disrupting taken for granted epistemological assumptions in favor of multiple epistemologies?
Collectively, [underrepresented minorities and women] demographic groups represent the largest untapped STEM talent pool in the United States.

Because of the shifting demographic landscape, failing to cultivate these pools of potential STEM expertise is a waste of our domestic human resources and, therefore, imposes an opportunity cost on national security interests, the U.S. economy, and our quality of life. The term “Broadening Participation in STEM” refers to a national imperative to exploit these untapped STEM talent pools.
Broadening Participation

- Literature review on what’s working
  - “lack of interest in STEM careers and lack of motivation contribute to students’ abandonment of STEM disciplines
  - “Research indicate that underrepresented students often enter college lacking adequate STEM exposure and preparation to succeed in undergraduate STEM coursework”
  - "Research suggests that a feeling of isolation and a lack of social connections within their learning environments is one reason for lower STEM retention rates.....summer bridge programs increase social networks and support...help students become acclimated to the university and seminars on academic survival skills
Broadening Participation

- Indicators of success:
  - Degree completion—"production of graduates"
  - Persistence/retention/completion rates
  - Closing "performance gaps"

- DISCUSS:
  - What metrics might we use to gauge success if we shifted the gaze to looking at policies, norms, institutional culture, and the structures that perpetuate oppression (structural barriers) in our institutions?
Culturally Sustaining Pedagogy

- “Culturally sustaining pedagogy seeks to perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism as part of the democratic project of schooling”
  - Django Paris (2012)

- “The future of CSP must extend the previous visions of asset pedagogies by demanding explicitly pluralist outcomes that are not centered on white, middle-class, monolingual, and monocultural norms of educational achievement”
  - Paris and Alim (2014)
Mentoring

- “Whereas advising is a formal arrangement through which a student comes to know “how to do school,” mentoring is more about developing professional know-how and well-being. Mentoring promotes the very best of one’s profession through illuminating a process of knowledge production and productivity”

  - Figueroa & Rodriguez (2015)
Voices of Graduate Students in a PWI

Themes:
- Relationality/Authenticity is key
- Shared experience and understanding
- Love and Care
- Respect
Keeping it Real: Authenticity

- An important part of a faculty mentoring relationship is authenticity. The last thing I need is someone who “fakes the funk.” Maybe this has to do with the whole “ivory tower” and “talking heads” stereotypes of academia, but I have appreciated and learned most from mentors who are humble, who are authentic, and provide the space for me to be my authentic self. Although I am more comfortable with faculty of color who share similar childhood experiences, I have also had authentic relationships with white mentors who remain authentic to their childhood experiences, but are open to learning a bit more about my childhood experiences and how it shapes my current self, research. Keeping it real also means showing touch love at times. As a graduate student, I know that I have gaps in my knowledge, or that my writing sucks! I’ve appreciated mentors who don’t hide reality from me, especially as a first-generation, queer person of color, but instead push me to be a better writer, researcher, or person.
Trust and authenticity

One of the most important aspects of any relationship, but especially in a faculty mentoring relationship, is trust. If I don’t trust someone, then I can’t fully be my authentic self. In previous mentoring relationships, I’ve had to maintain those relationships with a filter. For example, I am hyper sensitive about my queer identity: will they judge me for being gay or will they welcome me? As an undergraduate studying Sociology at a predominantly white, private, Christian institution, the college environment was not safe for queer people. Every interaction I had, whether it was with faculty, staff, students, and even friends, I had to keep that part of my self hidden until I felt safe. In other words, I did not trust people. As a graduate student, studying in a rural, public PWI, my faculty mentoring relationship has been one of the best because I’ve developed a strong sense of trust between myself and my faculty mentor. I don’t have to worry about filtering my life and keeping parts of my experiences in graduate school hidden. Instead, I completely trust her and this has been a freeing experience! So much so, that it’s inspired me to incorporate my queer and mixed-race identities into my research and academic projects.
Being first in my family to college, I have no role models to guide me in what it looks like, sounds like, feels like to do this work as a Black scholar and mother. My mentor's unapologetic integration of her selves (scholar, mother, activist, wife, leader, etc.) has been an impactful part of her mentorship from the very first second I met her. She is unafraid to demonstrate what and whom she values, by stating it outright or by demonstrating it through how she chooses to spend her time. She values her family and she values finding joy in life. For the first time since having my daughter, that means through a bachelors degree, a masters degree, a professional life in teaching and leadership in education, I felt like it was ok to show that I valued my daughter, to show any joy. It was like a heavy secret that I had been carrying around for over a decade. What a relief. What a relief from having to maintain a stoic exterior in order to communicate my seriousness, my work ethic, my dedication and focus to the job. She showed me that I can be all characteristics that exemplify professional excellence while also being personally joyful...publicly.
Authenticity

- Someone who is willing to mentor me; someone I look up to (personally, relationally, career wise) and wants the best for me. At the same time, also sees me as a potential colleague where there is mutual respect for each other. It’s important for me to know when to let your hair down and when to buckle down, be professional and get stuff done! In order to create this, there must be some vulnerability involved and “walls” to be taken down. Faculty and students are human—with all sorts of history, maybe some brokenness & unique lived experiences. Authentic and meaningful mentorship relationships mean the most to me. (African American Mother of 3)
Experience

sharing some similarities in culture and background, my mentor knows me and what I am going through without me even telling her. I only need to share one small piece of information with her and a "you know how that goes," and the fact is that she does. She understands, not from reading it in a book or from her research, but from her own lived experiences how the context of oppressions impact our ability to flourish. She knows when and how to push me. She can tell me when I have failed without questioning my ability to succeed. Students coming from historically oppressed groups still deal with all of the intersecting systems of oppression that they always have. For many of my peers, folks that share my life experiences, it is not the PhD that is the most challenging part of the process. The PhD, school/learning/academic achievement, has always been the easy part. It is dealing with the additional challenges that systems of oppression put in place in order detour us, to maintain the status quo.
Care

- My faculty mentor has pushed me to grow as an educator, researcher, and leader. I enjoy being challenged and having the ability to work independently while knowing I can ask for guidance when I need it. I can count on my chair to give me helpful and critical feedback on my scholarly work. As a first-generation college student, I appreciate having a mentor who can break things down for me since every step in my graduate journey was entirely new. I also gained a great deal from having a chair who knows what it’s like to navigate academia and the job market as a young woman of color. Being able to relate to my chair on a personal level allowed me to ask questions I would not be able to ask other faculty in my program. Most importantly, I’ve benefited from having a chair who understands my commitments outside the academy and is supportive on all fronts.
My k-12 and undergrad experience was centered a Eurocentric culture that I was never able to fully find my full potential. My PhD experience was different because my mentor gave me room to find my potential which in turn has lead to self-efficacy in and outside of the classroom. I believe faculty do not have to be cultural experts in the field of their students; however, if they engage in the literature this will, at the very least, facilitate a relationship that shows the student the faculty care about not only the work you're interested but also your lived experiences.
Care

- The understanding that my life is more than what they see in the classroom. I am a human being with responsibilities that don’t always revolve around academia.

They see me. All of me and instead of trying to change my voice, they amplify it.

Sometimes it’s as simple as a smile or a quick email check-in. I just want to know that they care.

- (Hawaiian father of 4, 2nd year PhD)
Love and Care

- While I do appreciate tough love, there has to be some kind of love in a faculty mentor relationship. I think TLC is developed when there is trust, authenticity, and reciprocal respect in a faculty mentoring relationship. Without a shared sense of love: for each other, for our communities, for our selves, a faculty mentoring relationship becomes a robotic take and give relationship. If faculty mentors really want to build trusting and lasting relationships with graduate students of color, they need to also demonstrate this sense of TLC: in funding opportunities, in research opportunities, in writing articles opportunities, etc. The important mentoring relationships I’ve had have demonstrated this “love as a verb,” type of approach. Words can only do so much to facilitate trusting and authentic relationships. (Oceanic male, 4th year PhD)
Love and Respect

- There was a post going around Facebook a few weeks ago, "In academia we don't say 'I love you,' we say 'I found an article that made me think of you'." I think this more tacit and implicit style is indicative of much of the communication that happens in academia. Whenever my mentor invites me to collaborate on a manuscript, a proposal, asks me for my thoughts or participation on a project she is working on, this communicates to me that she values me and that I belong in this space doing this work. This helps me combat imposter syndrome and gives me the confidence to develop my scholarship and to finish my PhD. She has made me feel worthy when I did not even see the worth in myself. By the same token, it is important to consider what is communicated, then, when faculty don't seem to take an interest in a student or their work, implicitly or explicitly.
Discuss

- Given the voices of these graduate students of color, what does it mean to “Broaden Participation” in STEM?