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A Change Model for Doctoral to Faculty Diversity in STEM

Greetings from the AGEP-NC Social Science Research Team

Research Team Members: Dr. Niesha Douglas, Dr. Cathy Howell, Dr. Anna Sanczyk, Kristin Villanueva, Shaunelle Casey, Marah Lambert and Dr. Lisa Merriweather, Team Lead.



Thank you to the faculty and student participants for sharing your experiences.

Data Sources: Interviews and Surveys gathering perceptions and practices of STEM doctoral mentoring.

Interesting Findings:

Deficit mentoring and vacuum mentoring. Deficit mentoring describes the gap between what mentoring should be and how it manifested in the experiences of the faculty and students. Reported practices were akin to advising, focusing on the nuts and bolts of doctoral matriculation or as an employer-employee relationship. Mentoring in a vacuum speaks to dispositional vacuumness wherein considerations for cultural and racialized existence should be present in mentorships, but often are not. Overall emphasis by most faculty in STEM doctoral mentoring was acclimating students to the culture of science which filled the vacuum. The vacuum limits the understanding of why and how culture impacts STEM doctoral mentoring, contributing to a sense of not belonging, particularly among women and racially minoritized students. Survey analysis indicated faculty were less confident and felt less prepared to mentor racially minoritized domestic students. Faculty were more apt to attend to culture as related to International STEM doctoral students.

Beyond the Black/White binary. We analyzed perceptions of mentoring of 15 International faculty, primarily from Asian countries who represent the second highest population group of STEM faculty in higher education. Despite the marginalization often experienced by International faculty, they did not widely acknowledge and/or respond with intentionality to the marginalization experienced by racially minoritized STEM doctoral students, suggesting they may, like their White colleagues, not operate from a culturally liberative space when mentoring domestic racially minoritized doctoral students

Conspicuous absence, race [still] matters, and invisibilized hypervisibility. We analyzed perceptions of mentoring of nine domestic Black/African American STEM doctoral students at an HBCU. Similar to the few other studies located with this focus, our analysis suggests that in spite of being in a space that is more diverse, they manage to simultaneously be invisible and hypervisible, courting an unmerited sense of cultural belonging in their programs. In many ways the systemic and institutional structures in HBCU STEM doctoral programming mirrored the colonial structures more often associated with PWIS.

Webinar: Thursday, March 31, 2022, 12:30-1:30

Leslie Goodyear

Using evaluation for decision making and improvement.

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Leslie Goodyear, a member of the AGEP-NC External Advisory Board and past president of the AEA, is an internationally recognized expert in evaluation and EDC distinguished scholar. She has deep expertise in qualitative inquiry, evaluation ethics, culturally responsive evaluation, and evaluation storytelling and other methods of sharing findings, evaluating out-of-school and informal STEM education programs, and building communities of practice. She is deeply committed to deepening understanding of effective approaches to fostering equity and access in STEM education and is a co-principal investigator of the NSF INCLUDES Coordination Hub.

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