

#BlackGirlMagic: Black women in STEM are driving forward—educators need to catch up

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The need for more scientists and engineers is a persistent issue plaguing industries throughout the United States. Several initiatives created to prioritize science, technology, engineering and mathematics in schools

are helping educators prepare more diverse students and workers for STEM fields. However, these efforts might be falling short when it comes to representation of people of color, according to a University of Missouri researcher.

The National Science Foundation reports that women of color constitute fewer than 1 in 10 employed scientists and engineers. And the women of color who are in STEM aren't necessarily seeing their identities reflected and incorporated in STEM fields.

"Imagine walking into a lab or a classroom and seeing pictures of people on the walls that are nothing like you," said Terrell Morton, the Preparing Future Faculty postdoctoral fellow at the University of Missouri. "People have a very narrow view of what science looks like, and right now, its older white men wearing goggles and holding beakers. When a young woman of color sees those images in a [learning environment](#), it can make her feel unwelcome because there is nothing in that image that represents her."

Morton believes that educators can help support women of color pursuing STEM degrees by creating inclusive classroom environments and prioritizing activities that intentionally and meaningfully incorporate students' personal identities and experiences. A few examples include:

- Being mindful of the images on the walls of classrooms and labs and the identities they represent.
- Being mindful of the readings used, problems investigated, solutions generated in courses and whose voice(s) and communities are and are not represented.
- Asking students to share their stories, backgrounds and goals with the class. This encourages community support and helps all students succeed.
- Provide diverse historical and contemporary role models (their

background and their work) in STEM classes through [case studies](#), stories, films, guest speakers and class instruction.

Morton interviewed 10 [black women](#) in STEM programs at two southeastern universities to hear their experiences of pursuing a degree in a field that is overwhelmingly white and male. Morton found that despite many alienating and isolating classroom experiences in pursuit of their degrees, all of the black women in the study firmly wanted to continue in the field.

"The women understand their identity to be both socially regulated and self-determined," Morton said. "This means that they recognize that society feels a certain way about black women and pictures them in certain roles. However, the women also saw themselves as successful and resilient because they are thriving in a field that society tells them they shouldn't be in."

Morton said many of the women felt their career goals were challenged outside of the classroom as well, often by members of their immediate community. For example, one of the women Morton spoke with said a person in her church pulled her aside and told her that she was being too ambitious by pursuing a doctoral degree in a STEM [field](#). The woman encouraged the student to think seriously about a plan B, in case things "went south" for her. Morton says these micro-aggressive behaviors are reflective of the implicit biases that people develop and can hinder society's progress over time. However, educators can use the tips above to create an inclusive and supportive environment for black women.

"People buy into these notions that only certain people can access certain spaces and do certain things," Morton said. "When somebody tells a black woman that her STEM studies are too ambitious, they are inferring that STEM careers are reserved for people who don't look like her. However, the [women](#) I spoke to were very strong-willed despite these

challenges and asserted that they would write their own stories and not buy into other people's narratives."

More information: Terrell R. Morton et al, #BlackGirlMagic: The identity conceptualization of Black women in undergraduate STEM education, *Science Education* (2018). [DOI: 10.1002/sce.21477](https://doi.org/10.1002/sce.21477)

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