

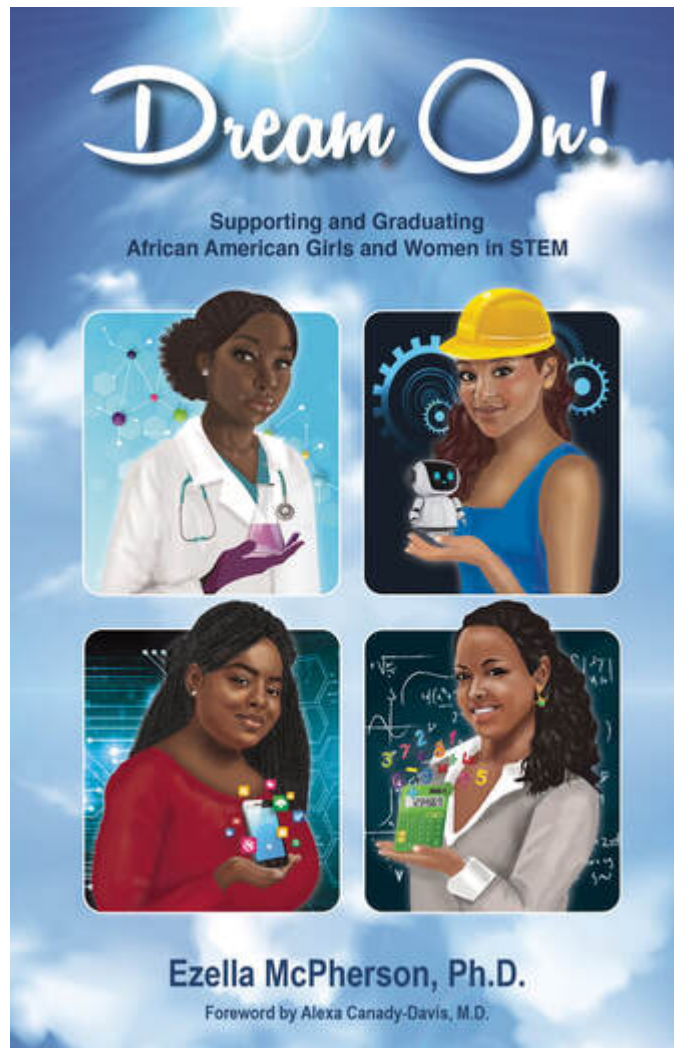
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“Dream On!” an Interview with Author Ezella McPherson, PhD

By Robbin Koenig

African American women face unique challenges in college because they are often first-generation university students and lack the guidance and support from family role models. Ezella McPherson’s book, *Dream On! Supporting and Graduating African American Girls and Women in STEM*, addresses these distinct problems and offers advice to these students tackling a major in STEM. Her recommendations are based on her research in sociological and educational theories. Ezella also discusses the “hidden curriculum,” the non-academic areas of engagement and protocols that are a necessary part of a successful college experience.

The following is excerpted from an interview with Ezella where she shared what inspired her work, how she turned her academic research into a book, and advice for STEM majors and aspiring writers.





The book cover of "Dream On!" (left) and a photo of the author, Dr. Ezella McPherson (right)

Scientista: What motivated you to write your newest book, "Dream On?"

Ezella McPherson: "I wrote the book because it actually goes back to my undergraduate experience at the University of Michigan. A lot of my friends who are African American women had high dreams of becoming doctors or majoring in a STEM field. I noticed that they put their dreams on hold – only a few became doctors or even majored in biology, math, or statistics. I saw that there was a limited number of African American women going into STEM fields at the University of Michigan overall. Even I put my dreams on hold because of the academic rigor at the University of Michigan. I too was a part of the group that left STEM and that's the reason why I wrote the book. It's my own personal story and the story of my friends.

"Later, when I was going to work at the University of Illinois, I noticed the same issue. I saw two of the women of color that I worked with in STEM and again, African American women having higher aspirations of majoring in STEM as a freshman. But when it came to actually doing the rigor of the work, they also left STEM. The same thing happened at Wayne State in Indiana University South Bend.

"That's why I wrote my book. It was just to provide a narrative for understanding the experiences of African American women in STEM, with the hope to create and facilitate African Americans being able to stay in STEM and

get their degrees.”

S: The cover of your book says “Supporting and Graduating African American Girls and Women in STEM.” What happens between earlier education and college, and even during college, that causes African American women to be pushed out at higher education levels in STEM fields?

EM: “So what happens in STEM is this: From our research, I found that African American girls actually have a love for science and math in K through 12. They don't have any challenges until they get to college. They are leaders in the classroom, they are participating, asking questions to their teachers. But then in college, something happens that changes the narrative. There is a hidden curriculum. The hidden curriculum has created a culture that causes African American women to leave STEM. The hidden curriculum consists of academic rigor and [not being aware of it] results in failing courses and a number of other things that I will discuss later. In order to survive and thrive, you have to be able to navigate that hidden curriculum in college.”

S: Your book covers some of the biggest challenges facing African American women pursuing careers in STEM, especially in college. Can you briefly describe some of these challenges?

EM: “Academic rigor and competitiveness – that feeling like you are competing for a grade, right? Oh, yeah. Only a certain amount of people can get an A or B in the class because classes are graded on the curve. In STEM there is course failure and information overload. The African American woman in my study talked about how they fail courses as a part of the process of becoming a STEM major. There was a lot of information thrown at them, and they weren't necessarily able to grasp all of it because you have to memorize all the information in terms of the STEM major courses.

“Attendance at office hours – African American women learned that in order to really grasp material it wasn't just about going to lectures. You also have to go to the office hours and meet with professors. I want to also make note that [in my book I talk about] a predominantly white institution, I call it Town University. Town University is a synonym for the institution where I attended where I learned that it is necessary to make use of campus resources, such as the tutoring center and consulting with your peers on campus. You have to learn about the departmental culture. What does that departmental culture look like in terms of making friends if you're doing good work with peers? Those are a couple of things that can present challenges for African American women in STEM.”

S: “There's so much information thrown at you in a STEM major right off the bat. And it can be really difficult especially with some of those auxiliary time-consuming tasks, such as attending office hours and tutoring.

EM: “Exactly. Relationship building was so important. African American women told me the professors tell you ‘come to my office,’ but then sometimes they went to office hours and the professors were not available. In my study, they really stressed going to office hours because that's where they built a relationship with their professors and/or their teaching assistants.”

S: How has your own research background in educational policy helped prepare you to do the research you describe in your book?

issues that have pushed African American women out of STEM majors. I would also say that my qualitative research methods really helped me think about how do I tell the narratives: how do I tell the story of African American women in STEM? I believe I was prepared because of the qualitative methods that I learned at the University of Illinois where I not only had to do my major, but also had to do a methodology specialization where I did qualitative methods. I did a multiple case study and from that case study, I was able to see the differences in terms of the lived experiences of African American women in STEM and those who left STEM. I think that this background allowed me to really get at their stories, because it's important to tell their stories and to do multiple case study research methods. You really have to drill down to the oral history of it too, in terms of learning their life histories.”

S: What was the most surprising thing you found while doing your research?

EM: “The most surprising thing that I found was that hidden curriculum that created racial and gender barriers to African American women being able to pursue degrees in STEM. You just don't know because it's hidden in plain sight. Without knowing that hidden curriculum, how do you navigate it as the first person, maybe in your family, pursuing this degree? That's why I would encourage people to get the book so that they're able to understand the hidden curriculum. I'm rebuilding it openly from the stories [shared by the women in the studies] so that you can navigate through STEM majors.”

S: What are some possible solutions for fixing the 'push out process' African American women face while completing their STEM majors? What can universities do? Is there anything students can do themselves?

EM: “I would say that there's a need for institutions to provide African American women support networks to facilitate their successes. A lot of students have to do it on their own. There's a national society for Black Engineers (NESBE). However, that's a student-led organization. It's not a faculty-led organization or a support system like the Office of Minority Student affairs. So, what I am proposing, or ‘my call to action,’ is for institutions to start to facilitate support networks.

“Students can also find a mentor and there should be a mentorship program. However, there may be some challenges for African American women who may be looking for other African American women. They may have to get folks outside of their race and gender to mentor them. But that's okay, as long as the person advocates for African American women in STEM to earn those degrees.

“The biggest thing to do is definitely pick up a copy of the book. Pick up a copy of the book because there's so much in there that is important for understanding the hidden curriculum. I have to piece together an education theory because we don't really have our own [separate African American women] educational theory. I had to put together these other theories from sociology and I think I did cultural capital and social capital, which focus on student support networks. Students can really be proactive and like I said, I suggest reading the book, as well as seeking out mentors, student organizations on campus, and getting involved. Even if your mentor isn't in STEM, they can still connect you to resources on or off campus. So, I think seeking out that support, especially for the first-generation STEM major, is going to be so important as you navigate through the process.”

S: Research has often shown that role models and mentors are really important for helping people achieve their goals. Do you have any favorite role models, or a favorite inspiring story of someone you met while doing the research for your book?

EM: "Absolutely. One of my mentors is my dissertation advisor, Dr. William Trent. He's the one that really encouraged and inspired me to do a dissertation on African American women in STEM from my specialized exam, qualifying exam, I think I wrote maybe one page on the topic of African American women in STEM and it ended up as my dissertation topic. Oh, that was really inspirational!

"And then my other mentor, Dr. Robin Jarrett, was very influential in teaching me ethnographic methods, as well as qualitative methods. Ethnography is a type of qualitative method. She taught me qualitative methods and introduced me to readings on qualitative methods and ethnic families. I learned a lot about how to study a specific culture.

"During the process [of writing my book], I was able to meet well-known STEM scholars that gave me my endorsements. Dr. Freeman Hrabowski III is the current president of the University of Maryland, Baltimore County, he gave me one of my endorsements. He's a well-known scholar that did my half program at UMBC and made it very successful for minority students. And then Dr. Sandra Hanson, who is also a well-known STEM scholar, she wrote a book called "Swimming against the Tide: African American Girls and Science Education." It's about African American women and girls in STEM. And then finally, Dr. Alexa Canady, who was the first African American woman neurosurgeon, wrote the foreword to my book. Everyone accepted my request to write the endorsements for the book, so that was pretty awesome in terms of meeting those new people."

S: Do you have any advice for readers of this article who may be experiencing the same challenges you talk about in your book?

EM: "Absolutely. Seek a mentor to guide you step-by-step through the process and provide tools and resources. There are different organizations, national organizations that you can go to: the American Association for University Women, the Society of Women Engineers, and NSBE, the National Society of Black Engineers. And just a host of other national organizations. Some of those organizations have chapters, undergraduate chapters, or graduate student chapters, that you can participate on your campus. That is very important to do. Even the Scientista Foundation will be a great resource for students to get through this process.

"So read the book to get an understanding of the experiences of African American women in STEM because it's very comprehensive. You'll learn about the challenges, but also resources and solutions. The book is very comprehensive and inspirational, designed to encourage not only us African American women, but all women of color and first-generation college students to continue to dream on and pursue that STEM degree.

"I think also that it is important to establish a community in STEM. You have your STEM family and also you have your own biological family. An important finding is that African American women in STEM, they have their own kin who that supported them: African American mothers and fathers who supported their daughters. It's important to emphasize that role of family as well in STEM communities."

S: Turning research into a book is hard work. Do you have any advice for our aspiring scientist writers looking to take on a similar project?

EM: "So what happened with this book is actually a little interesting. I already had two completed chapters and I had 40 pages already written because they were supposed to be in other books. But for one of the books, the [publishers] decided they didn't want [to focus on just] the undergraduate experience. It just turned out to be the academia experience. And that ended up being chapter six of this book. I reorganized the data and I turned it into a collection of

horror stories. It changed to chapter six in terms of looking at that leaky pipeline and the push out process. Eventually, I reorganized my material into different sections, with additional information added later. I'm a fast writer and I was able to write it pretty much over Memorial Day weekend 2020, during the pandemic.

"The advice that I give to people is to be persistent. If you want to write the book, write the book. Seek a mentor who has previously published a book. What I learned is a page a day, 365 days a year, is a book. It seems like that's not a lot, but it actually is a lot. If I had to do it all over again, I probably would have published my findings earlier than I did because now STEM is so very important.

S: Along that line, what was the most challenging part of writing this book?

EM: "I found myself having to delete certain sections and having to just sort of summarize what I had said so that I'm not in breach of a copyright issue [with my earlier work]. And then also, like I said, [the content of] Chapter Six is going to be in a different book as well. So really analyzing that data and really trying to say, let's go beyond just sharing horror stories."

S: What are your next steps and future plans in your professional life? What are some of the remaining unanswered questions in your field of research?

EM: "Well, some of the remaining questions in STEM is why are women and girls leaving STEM? I think that's important to do some research on. How do you prepare the next generation of women medical doctors? These are some important research questions that have been unanswered and I'd love to delve deep into.

"What are my current opportunities? Well, I'm currently doing speaking engagements. One that I did in March was called "Dream through STEAAM." STEAAM is science, technology, engineering, architecture, the arts and math. I also plan to continue to be an advocate for women and girls in STEM. I want to encourage them to stay in STEM and pursue their dream majors and careers. And just encouraging them for the team to dream on."

You can learn more about Dr. Ezella McPherson by following her on [Twitter](#) or [Instagram](#) at [@drloveswriting](#).

Rowan P. Marshall contributed reporting and conducted the interview for this article.



Robbin Koenig

Robbin Koenig, M.A., M.S. is an educator with an avid interest in technology and science education. She has taught students in prekindergarten through high school. Robbin enjoys volunteer work, exploring the N.Y.C. cultural arts scene, and anything pertaining to wildlife.