



## Profile

### From Baltimore to Oxford: Rhodes Scholar Pushes Boundaries

**N**aomi Mburu is the first student at the Univ. of Maryland, Baltimore County (UMBC) to earn the prestigious Rhodes scholarship, which awards its recipients a post-graduate education at Univ. of Oxford in the U.K. Mburu, who recently graduated with an undergraduate degree in chemical engineering, is one of 32 U.S. students to receive the award in 2018.

According to the Rhodes Trust, scholars are chosen for their outstanding academic achievements, as well as their character and their commitment to the common good. A remarkably involved and beloved student, Mburu quickly became something of a celebrity at UMBC after becoming a Rhodes scholar.

In the moments before her selection, she insisted on taking a group picture with her fellow nominees.

"I mean, you never know who these kids are going to end up being," she says.

Mburu was born in Baltimore, MD, and spent most of her life in the city and its surrounding suburbs. Baltimore is dotted with institutions of higher education, including UMBC and Johns Hopkins Univ. As a child, Mburu, who did not have the word engineer in her vocabulary yet, wanted to be an inventor. Then she wanted to be a doctor, and for a few years, a spy. A shy youth, Mburu spent her time reading mystery novels and biking through suburban streets.

By the time she was in elementary school, she had completely fallen in love with science. She took science classes for kids and, by the end of middle school, began seriously considering it as a career, with her parents' support.

Mburu's parents had both immigrated to the U.S. from Kenya to pursue their education, before meeting in Baltimore and marrying. Her father had studied engineering, but because of his immigration status, was unable to find a job in his field. Today, Mburu's parents are both accountants, and have always encouraged Mburu to do what she loves. In high school, she became interested in engineering and physics.

"I'd always kind of wondered about electricity and how things work that I couldn't necessarily see," Mburu says. "A lot of what you learn in physics and engineering you don't immediately perceive, like an atom moving. I thought it was fascinating that there was this whole world I'd never seen."

Mburu chose to study chemical engineering as an undergraduate, and found that she also enjoyed coding and robotics. She has conducted research at Johns Hopkins Applied Physics Laboratory and at Vanderbilt Univ. She also spent a summer working with a particle accelerator in Geneva at the European Organization for Nuclear Research.

Mburu spent most of her time working with Gymama

Slaughter, an engineering professor at UMBC, to develop a bioreactor that extends the viability of donated organs. Slaughter served as an inspiration for Mburu throughout her four years at UMBC.

"I was honestly very scared of her throughout undergrad," Mburu says. "But at the same time, I admired how far she'd come. She is the only black professor in our engineering department, and one of very few women, but she's so confident in herself. It doesn't even phase her. She's very hard on her students, but only because she wants us to do well — she pushed me to do things I didn't think I could, like publishing as an undergraduate."

Currently, Mburu is working on nuclear fusion reactors in conjunction with a British energy company that wants to commercialize nuclear fusion by 2030.

At UMBC, Mburu was a mentor and leader for younger students, and is extremely passionate about increasing diversity in engineering. She was the president of the school's chapter of the National Society of Black Engineers (NSBE), where she helped organize events and conferences with the intention of providing resources for black engineers.

At Oxford, she hasn't joined any such groups — in her words, there simply aren't enough black engineers at the university. Mburu volunteers for disability inclusion groups, and she continues to strive to address the inequalities that exist in science and engineering.

"There are more black internationals than black Britishers at Oxford," she says. "And beyond that, many people here have grown up in the Oxford lifestyle — so many of them received their undergraduate, master's, graduate, and even post-graduate education at Oxford. It's the kind of insular society that's more discouraged in the U.S. If you're an outsider coming into this society, it can be intimidating because you don't identify, you haven't had the same life experiences — it's a feeling that kind of transcends race and gender."

In the future, Mburu sees herself entering academia and serving as a mentor to students. She hopes to have an impact as a black female leader in the same way Slaughter has inspired her. She feels that chemical engineering has opened the door to a plethora of possibilities.

"I have combined so many types of engineering in my time doing research," she says. "I've worked with biofuel cells, 3D printing, and particle accelerators. Even on the other side of the world, in Switzerland, I was still able to apply my engineering skills. It's opened my eyes to the fact that I can do so much with my degree, regardless of the boxes society has put forth. You can do whatever you want, for real."

CEP