

Sekazi Kauze Mtingwa is an African-American theoretical physicist, who is very active in physics, likes to encourage kids about the importance of education, has written books, and enjoys encouraging people to go into science careers. Sadly, most little kids don't know about him, because African-American scientists aren't taught in school and aren't widely well known, but today I have the opportunity to teach someone about Dr. Mtingwa, an amazing theoretical physicist.

Michael Von Sawyer was born on October 20, 1949, in Atlanta, Georgia. He went to segregated schools up until his sophomore year in high school. In that year, his city held an integrated science fair where Michael was the first African American to win first place in biology.

At 22 years old, he earned his B.S degrees in physics and mathematics at MIT (Massachusetts Institute of Technology). He then continued his education at Princeton University, where he received a Ph.D. in theoretical high energy physics at age 27. It was then, in his years in graduate school that Michael Von Sawyer changed his name to Sekazi Kauze Mtingwa, a name of Tanzanian origin. He changed his name to get rid of his ties to slavery.

His decision to change his name is inspiring to me. It tells me that he felt he didn't need a white name to achieve great things or to be taken seriously as a physicist in a white dominated field. He wanted to be judged by his intellect rather than how much he assimilated into white culture at that time. He did not let racial discrimination hold him back from becoming an amazing physicist.

After graduate school, Dr. Mtingwa got postdoctoral positions at the University of Rochester and the University of Maryland College Park. As a result of his research, he received a Ford Foundation fellowship at age 31. With that, he traveled to Kane County, Illinois to become a research physicist at Fermilab at age 32. At Fermilab, Dr. Mtingwa's theory of "intrabeam scattering"¹ was developed in collaboration with another physicist named James Bjorken. This led to both of them receiving the Robert R. Wilson Prize for Achievement in the Physics of Particle Accelerators in 2016. Dr. Mtingwa was the first African American to receive this award. His work with intrabeam scattering helps scientists to understand the universe, and his discoveries are helping us to understand what our universe is made of and how it came to be.

Dr. Mtingwa made history when he won this award, and set a wonderful example for many other young African-American people, including me. It is important for me and others like me to see that African-Americans can achieve great things, no matter the color of their skin. When I was in second grade, another person in my class told me it would be great if I was a slave. Even today, racism and hatred of African-American people is still taught in many homes. However, Dr. Mtingwa, and many others like him, show me that no matter what people think, I can still achieve great things.

From ages 39-42, Dr. Mtingwa worked at the Argonne National Laboratory in DuPage County, Illinois where he made theories on advanced wakefields, plasma acceleration, and photon colliders. At age 43, Dr. Mtingwa joined the physics department at North Carolina A&T State University and served as the department's chair until 1994. He played a significant role in establishing the university's Interdisciplinary Research Center.

At age 44, Dr. Mtingwa co-founded the National Society of Black Physicists and was the organization's president until 1994. He was also on the board of Triangle Science, Education & Economic Development, a consulting group that supports minority students in STEM fields. In 2001 he returned to MIT as an MLK Visiting Professor, and he worked in the Laboratory for Nuclear Science until 2003. In 2008, he was elected as a fellow of the American Physical Society. When he retired in 2012, Dr. Mtingwa focused his efforts on bringing scientific innovation and education to Africa and mentoring. In 2015, he was awarded a fellowship by the American Association for the Advancement for Science (AAAS).

Dr. Sekazi Kauze Mtingwa is an amazing scientist, and he made so many contributions to the world. He is one of the people I look up to in science because he overcame many challenges thrown his way. From changing his name, to being the first African American to win the Achievement in the Physics of Particle Accelerators award, he shows me that even though I am African-American, and may face racial discrimination along the way, I can do many, many things. The color of my skin does not matter.

He also teaches me that when I am successful, I need to be sure to help others coming up behind me. Dr. Mtingwa could have enjoyed his success without thinking of others but his consulting group is a great example of how we as a society should not just think about ourselves but think of ways to help others. That is how successful communities and societies thrive.

Thank you for giving me this opportunity to write about Dr. Sekazi Kauze Mtingwa. I hope that you will share what you learned about this amazing African-American physicist with others so that he can become more well known.

¹Intrabeam scattering (IBS) is an effect in accelerator physics where collisions between particles couple the beam emittance in all three dimensions. This generally causes the beam size to grow. In proton accelerators, intrabeam scattering causes the beam to grow slowly over a period of several hours. This limits the luminosity lifetime. In circular lepton accelerators, intrabeam scattering is counteracted by radiation damping, resulting in a new equilibrium beam emittance with a relaxation time on the order of milliseconds. Intrabeam scattering creates an inverse relationship between the smallness of the beam and the number of particles it contains, therefore limiting luminosity.