



CONVERSATIONS WITH

# BLACK WOMEN IN SCIENCE

March 14, 2024 | 12 p.m.  
Trenholm Campus Library

Featuring: Dr. Diann Jordan, Author  
Sisters in Science: Conversations with Black Women  
on Race, Gender and Their Passion for Science





Dr. Diann Jordan

Diann Jordan is currently a professor of biological sciences at Alabama State University and an educational consultant. She was the first woman faculty ever hired in Soil and Atmospheric Sciences Dept. and likely the first African American woman tenured in that department at the University of Missouri-Columbia (1996). Jordan's research spanned over last 18 years in the area of soil ecology and environmental microbiology and her specific areas focused on nitrogen transformations in soils and earthworm ecology studies in agricultural and forest soil ecosystem. She and her team conducted some of the first in-depth research on earthworm and microbial ecology in Missouri's claypan soils and forest ecosystems. For the last 20+ years, her research has focused on stem education and creating innovative teaching strategies and solutions for diverse and under-served populations.



**Alice Augusta Ball** (July 24, 1892 – December 31, 1916) was an American chemist who developed the "Ball Method", the most effective treatment for leprosy during the early 20th century. She was the first woman and first African American to receive a master's degree from the University of Hawai'i and was also the university's first female and African American chemistry professor. She died at age 24 and her contributions to science were not recognized until many years after her death.



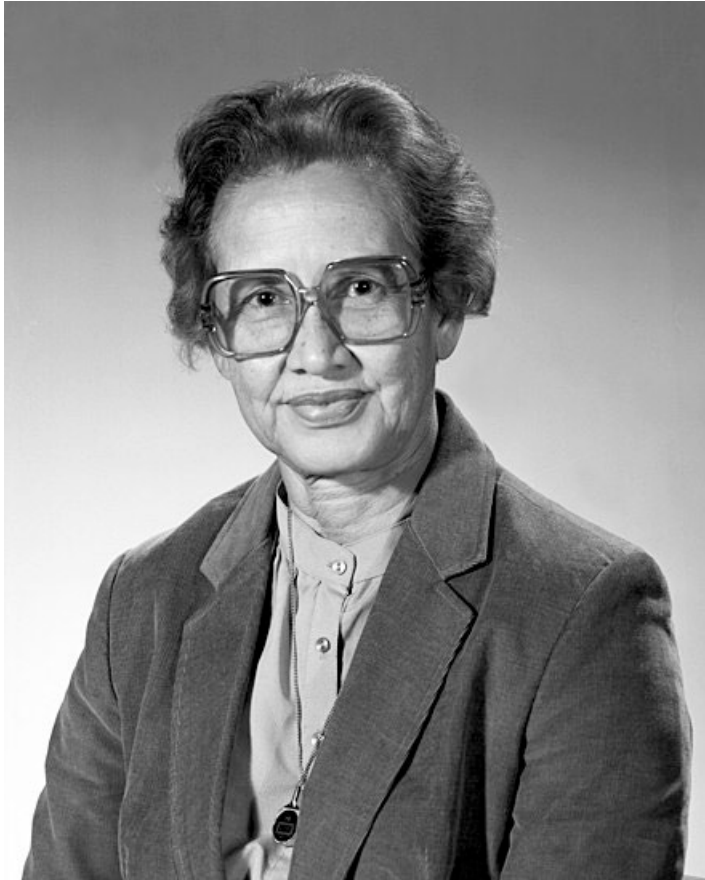
**Mae Carol Jemison**, born October 17, 1956, is an American engineer, physician, and former NASA astronaut. She became the first African-American woman to travel into space when she served as a mission specialist aboard the Space Shuttle *Endeavour* in 1992. Jemison joined NASA's astronaut corps in 1987 and was selected to serve for the STS-47 mission, during which the *Endeavour* orbited the Earth for nearly eight days on September 12–20, 1992. She holds several honorary doctorates and has been inducted into the National Women's Hall of Fame and the International Space Hall of Fame.





Alexa Irene Canady, born November 7, 1950, is a retired American medical doctor specializing in pediatric neurosurgery. She was born in Lansing, Michigan and earned both her bachelors and medical degree from the University of Michigan. After completing her residency at the University of Minnesota in 1981, she became the first black woman to become a neurosurgeon. This came after Ruth Kerr Jakoby became the first American woman to be board certified in neurosurgery in 1961.





Creola Katherine Johnson (August 26, 1918 – February 24, 2020) was an American mathematician whose calculations of orbital mechanics as a NASA employee were critical to the success of the first and subsequent U.S. crewed spaceflights. During her 33-year career at NASA and its predecessor, she earned a reputation for mastering complex manual calculations and helped pioneer the use of computers to perform the tasks. The space agency noted her "historical role as one of the first African-American women to work as a NASA scientist".

Dr. Shirley Ann Jackson, born August 5, 1946, is an American physicist, and was the 18th president of Rensselaer Polytechnic Institute. She is the first African American woman to have earned a doctorate at the Massachusetts Institute of Technology (MIT) in Theoretical Elementary Particle Physics, and the first African American woman to have earned a doctorate at MIT in any field. She is also the second African American woman in the United States to earn a doctorate in physics.





**Carolyn Beatrice Parker** (November 18, 1917 – March 17, 1966) was a physicist who worked from 1943 to 1947 on the Dayton Project, the polonium research and development arm of the Manhattan Project. She was one of a small number of African American scientists and technicians on the Manhattan Project. She then became an assistant professor in physics at Fisk University. Parker earned two master's degrees, one in mathematics from the University of Michigan in 1941 and one in physics from MIT in 1951. According to family, her completion of a doctorate in physics at MIT was prevented by the leukemia that would kill her at age 48. Leukemia was an occupational risk for workers on the Dayton Project. Parker is the first African-American woman known to have gained a postgraduate degree in physics.





Patricia Era Bath (November 4, 1942 – May 30, 2019) was an American ophthalmologist and humanitarian. She became the first female member of the Jules Stein Eye Institute, the first woman to lead a post-graduate training program in ophthalmology, and the first woman elected to the honorary staff of the UCLA Medical Center. Bath was the first African-American to serve as a resident in ophthalmology at New York University. She was also the first African-American woman to serve on staff as a surgeon at the UCLA Medical Center. Bath was the first African-American woman doctor to receive a patent for a medical purpose. A holder of five patents, she founded the non-profit American Institute for the Prevention of Blindness in Washington, D.C.

Annie Easley, from Birmingham, Alabama, was an African American computer scientist and accomplished mathematician who made critical contributions to NASA's rocket systems and energy technologies over her 34-year career. As a black female in America during the 1950s, she faced heavy adversity throughout her career and was often underrepresented and disregarded. Despite these barriers Easley demonstrated perseverance and determination to make a name for herself in a line of work dominated by males. She demonstrated exceptional skills in mathematics, data analysis, and code development across projects focused on alternative energy sources, improved power systems, and launch capabilities enabling space communication and exploration.

Easley's early work involved running simulations at NASA's Plum Brook Reactor Facility and studying the effects of rocket launches on earth's ozone layer. She taught herself assembly programming using languages like Formula Translating System (Fortran) and the Simple Object Access Protocol (SOAP) to help with these simulations. She would also work on developing code used in researching and analyzing alternative power technologies like batteries and fuel systems, which would be later used in hybrid vehicles and NASA's Centaur upper-stage rocket.



Dame Elizabeth Nneka Anionwu OM DBE FRCN (born Elizabeth Mary Furlong; July 1947) is a British nurse, health care administrator, lecturer, and Emeritus Professor of Nursing at the University of West London.

In 1979, Anionwu became the United Kingdom's first sickle-cell and thalassemia nurse specialist, helping establish the Brent Sickle Cell and Thalassaemia Counselling centre with consultant haematologist Milica Brozovic. In 1998, by then a Professor of Nursing, Anionwu created the Mary Seacole Centre for Nursing Practice at the University of West London. She holds the Order of Merit, was appointed a Dame Commander of the Order of the British Empire and is a Fellow of the Royal College of Nursing (RCN). She retired in 2007, and in 2016 she published her memoirs, *Mixed Blessings from a Cambridge Union*.





**Jewel Plummer Cobb** (January 17, 1924 – January 1, 2017) was an American biologist, cancer researcher, professor, dean, and academic administrator. She contributed to the field of cancer research by studying the cure for melanoma. Cobb was an advocate for increasing the representation of women and students of color in universities, and she created programs to support students interested in pursuing graduate school.



**Marian Rogers Croak** is a Vice President of Engineering at Google. She was previously the Senior Vice President of Research and Development at AT&T. She holds more than 200 patents. She was inducted into the Women in Technology International Hall of Fame in 2013. In 2022, Croak was inducted into the National Inventors Hall of Fame for her patent regarding VoIP (Voice over Internet Protocol) Technology. She is one of the first two Black women to receive that honor, along with Patricia Bath. Her invention allows users to make calls over the internet instead of a phone line. Today, the widespread use of VoIP technology is vital for remote work and conferencing.





Marie Van Brittan Brown (October 30, 1922 – February 2, 1999) was an American nurse and innovator. In 1966, she invented a video home security system along with her husband Albert Brown, an electronics technician. That same year they applied for a patent for their security system. It was granted three years later in 1969. Her innovation impacted the security system. Brown was born in Jamaica, Queens, New York. She died there on February 2, 1999, at the age of seventy-six.

Mary Jackson (April 9, 1921 – February 11, 2005) was an American mathematician and aerospace engineer at the National Advisory Committee for Aeronautics (NACA), which in 1958 was succeeded by the National Aeronautics and Space Administration (NASA). She worked at Langley Research Center in Hampton, Virginia, for most of her career. She started as a computer technician at the segregated West Area Computing division in 1951. In 1958, after taking engineering classes, she became NASA's first black female engineer.

After 34 years at NASA, Jackson had earned the most senior engineering title available. She accepted a demotion to become a manager of both the Federal Women's Program, in the NASA Office of Equal Opportunity Programs and of the Affirmative Action Program. In this role, she worked to influence the hiring and promotion of women in NASA's science, engineering, and mathematics careers.

Jackson's story features in the 2016 non-fiction book *Hidden Figures: The American Dream and the Untold Story of the Black Women Who Helped Win the Space Race*. She is one of the three protagonists in *Hidden Figures*, the film adaptation released the same year.

In 2019, Jackson was posthumously awarded the Congressional Gold Medal. In 2021, the Washington, D.C. headquarters of NASA was renamed the Mary W. Jackson NASA Headquarters.





Wangari Muta Maathai (/wæn'gɑ:ri mɑ:'ðɑɪ/; 1 April 1940 – 25 September 2011) was a Kenyan social, environmental, and political activist who founded the Green Belt Movement, an environmental non-governmental organization focused on the planting of trees, environmental conservation, and women's rights. In 2004 she became the first African woman to win the Nobel Peace Prize.

She went on to become the first woman in East and Central Africa to become a Doctor of Philosophy, receiving her Ph.D. from the University of Nairobi in Kenya. In 1984, she got the Right Livelihood Award for "converting the Kenyan ecological debate into mass action for reforestation." Maathai was an elected member of the Parliament of Kenya and, between January 2003 and November 2005, served as Assistant Minister for Environment and Natural Resources in the government of President Mwai Kibaki. She was an Honorary Councillor of the World Future Council. As an academic and the author of several books, Maathai was not only an activist but also an intellectual who has made significant contributions to thinking about ecology, development, gender, and African cultures and religions.





**Donna Auguste**, born in 1958, is an African-American businesswoman, entrepreneur, and philanthropist. She was the co-founder, along with colleague John Meier, and chief executive officer (CEO) of Freshwater Software from 1996 to 2000. Prior to founding Freshwater Software, Auguste was a senior engineering manager at Apple Computer who helped to coordinate the development of the Newton personal digital assistant (PDA). Additionally, she was the senior director for US West Advanced Technologies, whereabouts she met John Meier and began seriously thinking about the creation of Freshwater Software. In 2000, she sold Freshwater Software to Mercury Interactive Corp. for \$147 million. In the same year, she was recognized as one of the "25 Women Who Are Making It Big in Small Business" by Fortune Magazine. She also won the 2001 Golden Torch Award for Outstanding Woman in Technology. After returning to academia for a Ph.D. with the University of Colorado Boulder, Auguste was awarded the "eminent engineer" designation from the nation's oldest engineering honor society, Tau Beta Pi.



Evelyn Boyd Granville (May 1, 1924 – June 27, 2023) was the second African-American woman to receive a Ph.D. in mathematics from an American university; she earned it in 1949 from Yale University. She graduated from Smith College in 1945. She performed pioneering work in the field of computing.



Gladys Mae West, born October 27, 1930, is an American mathematician. She is known for her contributions to mathematical modeling of the shape of the Earth, and her work on the development of satellite geodesy models, that were later incorporated into the Global Positioning System (GPS). West was inducted into the United States Air Force Hall of Fame in 2018. West was awarded the Webby Lifetime Achievement Award for the development of satellite geodesy models.



Rediet Abebe is an Ethiopian computer scientist working in algorithms and artificial intelligence. She is an assistant professor of computer science at the University of California, Berkeley. Previously, she was a Junior Fellow at the Harvard Society of Fellows.

Abebe's research develops mathematical and computational frameworks for examining questions related to inequality and distributive justice. She co-founded the multi-institutional interdisciplinary research initiatives Mechanism Design for Social Good (MD4SG) and Black in AI





Timnit Gebru, born 13 May 1983, is an Eritrean Ethiopian-born computer scientist who works in the fields of artificial intelligence (AI), algorithmic bias and data mining. She is an advocate for diversity in technology and co-founder of Black in AI, a community of Black researchers working in AI. She is the founder of the Distributed Artificial Intelligence Research Institute (DAIR).

Gebru has been recognized widely for her expertise in the ethics of artificial intelligence. She was named one of the World's 50 Greatest Leaders by Fortune and one of Nature's ten people who shaped science in 2021, and in 2022, one of Time's most influential people.



**Henrietta Lacks**

Henrietta Lacks (born Loretta Pleasant; August 1, 1920 – October 4, 1951) was an African-American woman whose cancer cells are the source of the HeLa cell line, the first immortalized human cell line and one of the most important cell lines in medical research. An immortalized cell line reproduces indefinitely under specific conditions, and the HeLa cell line continues to be a source of invaluable medical data to the present day.

Lacks was the unwitting source of these cells from a tumor biopsied during treatment for cervical cancer at Johns Hopkins Hospital in Baltimore, Maryland, in 1951. These cells were then cultured by George Otto Gey, who created the cell line known as HeLa, which is still used for medical research. As was then the practice, no consent was required to culture the cells obtained from Lacks's treatment. Neither she nor her family were compensated for the extraction or use of the HeLa cells.

Even though some information about the origins of HeLa's immortalized cell lines was known to researchers after 1970, the Lacks family was not made aware of the line's existence until 1975. With knowledge of the cell line's genetic provenance becoming public, its use for medical research and for commercial purposes continues to raise concerns about privacy and patients' rights.

THE END

WOMEN'S HISTORY MONTH

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