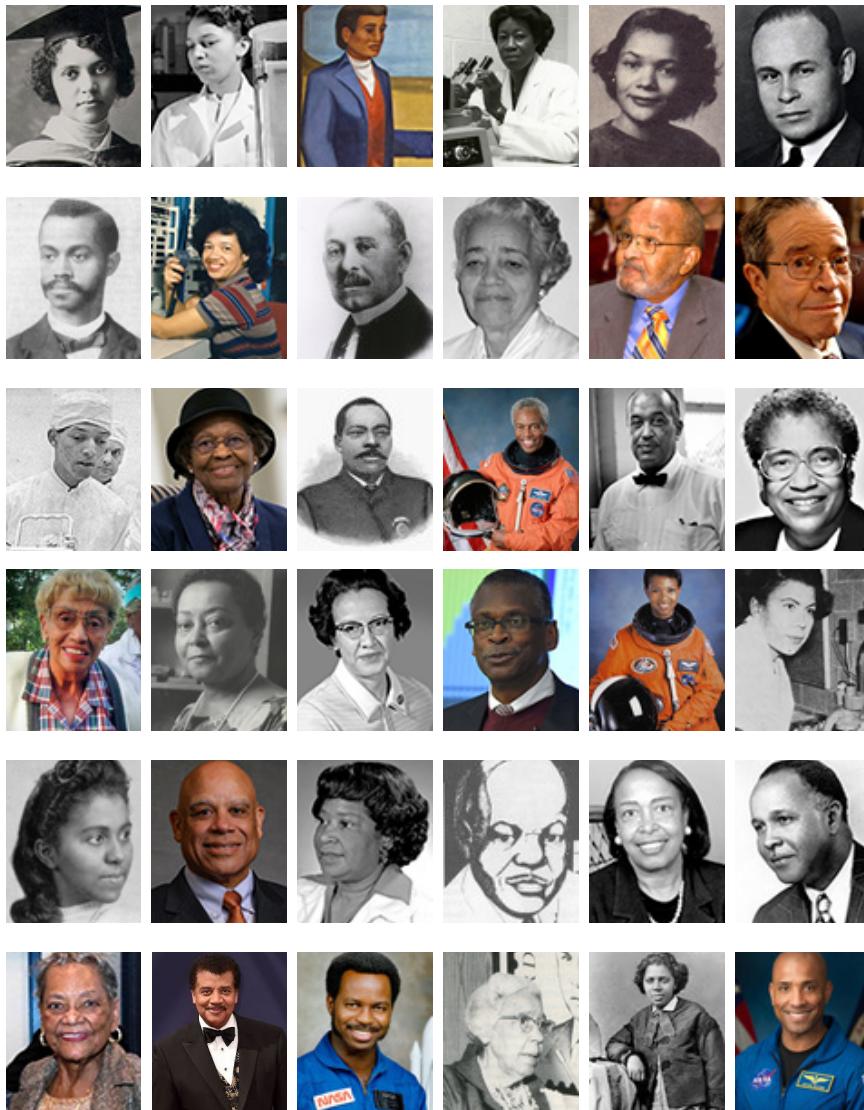


BLACK HISTORY MONTH

• MAJOR BLACK SCIENTISTS •



SHARE AND EDUCATE IN SCHOOL AND AT WORK

MAJOR BLACK SCIENTISTS IN AMERICA



1. Alice Ball, chemist (1892-1916)

Alice Ball was a chemist who developed an injectable treatment for leprosy.



2. Benjamin Banneker, mathematician and astronomer (1731-1806)

Benjamin Banneker was a mathematician and astronomer. Stories about Banneker include a range of science details, including a clock he carved from wood (possibly the first clock in the U.S.), his successful prediction of the 1789 solar eclipse, and his role as a surveyor when the territory for Washington D.C. was being mapped. Banneker also wrote and published an almanac, yearly, between 1792 and 1797.



3. Patricia Bath, ophthalmologist (1942-2019)

Patricia Bath was an ophthalmologist who developed laser technology used in treating cataracts.



4. Guion Bluford, astronaut and aerospace engineer (1942-)

Guion Bluford was the first African American in space on the Challenger's eighth (STS-8) space shuttle mission (1983).



5. Otis Boykin, inventor and electrical engineer (1920-1982)

Otis Boykin invented the first electrical resistor, a part now used in many common devices, including computers and televisions. Boykin received his first patent in 1959 for a wire precision resistor. In 1964, he developed a resistor that made the first implantable pacemaker possible.



6. Herman Branson, physicist (1914-1995)

Herman Branson co-discovered the alpha helix protein structure and conducted research on sickle cell anemia.



7. William Warrick Cardozo, physician (1905-1962)

William Warrick Cardozo pioneered research on sickle cell anemia and its appearance predominantly in people of African descent.



8. George Carruthers, astrophysicist (1939-2020)

George Carruthers developed the ultraviolet camera/spectrograph used during the Apollo 16 mission in 1972.



9. Emmett Chappelle, biochemist (1925-2019)

Emmett Chappelle used bioluminescence as a way to quantify the presence of bacteria in water and showed how fluorescence can be used to monitor plant health. At NASA, he researched an ATP-fluorescence assay as a way to detect life on other planets.



10. Jewel Plummer Cobb, biologist (1924-2017)

Jewel Plummer Cobb was a biologist whose research explored the relationship between melanin, skin pigmentation, and skin cancer. Her research included investigating the use of chemotherapy drugs like methotrexate to treat certain types of cancer. Dr. Cobb served as president of California State University at Fullerton from 1981-1990.



11. Margaret Collins, entomologist and zoologist (1922-1996)

Margaret Collins was an entomologist and zoologist. Known as the “Termite Lady” for her extensive research on termites, she co-discovered the *Neotermes luykxi* species of termites.



12. Rebecca Lee Crumpler, physician (1831-1895)

Rebecca Lee Crumpler was the first African American doctor in the U.S., receiving a “Doctress of Medicine” degree from New England Female Medical College in 1864. Dr. Crumpler worked with the Freedmen’s Bureau and other groups to provide medical care for freed slaves and others in need. She later wrote *A Book of Medical Discourses*



13. Marie Daly, chemist (1921-2003)

Marie Daly was a chemist who studied the relationship between cholesterol and heart health.



14. Christine Darden, mathematician and aerospace engineer (1942-)

Christine Darden was a mathematician and aerospace engineer at NASA. Once she moved from data analysis to Darden does not appear in the Hidden Figures movie, but her story is part of the Hidden Figures book.



15. Mark Dean, computer engineer (1957-)

Mark Dean is a computer engineer who co-developed the first personal computer. Additional contributions at IBM led to color monitors, the Industry Standard Architecture bus (which allows you to connect devices like printers to computers), and the first gigahertz chip.



16. Charles Richard Drew, physician (1904-1950)

Charles Richard Drew developed ways to use and preserve blood plasma that helped save lives during World War II and later became the model used for blood banks. Known as the “Father of the Blood Bank,” Drew is also credited with the first bloodmobile.



17. Victor J. Glover, Jr., mechanical engineer and astronaut (1976-)

Victor J. Glover, Jr. has a background in mechanical engineering and is a Commander in the U.S. Navy. In 2020, Glover headed to the International Space Station (ISS) as pilot and second-in-command on the Crew-1 mission aboard SpaceX Crew Dragon Resilience.



18. Sarah Goode, inventor (1855-1905)

Sarah Goode invented a bed that folded up so it could be stored out of the way when not in use. Goode's "folding cabinet bed" was an early version of the Murphy Bed. Goode was one of the first African American women to receive a patent.



19. Bettye Washington Greene, chemist (1935-1995)

Bettye Washington Greene, a chemist, was the first female African American chemist to work at the Dow Chemical Company. Her research at Dow focused on latex and polymers.



20. Walter Lincoln Hawkins, chemist (1911-1992)

Walter Lincoln Hawkins was a chemist whose work at AT&T's Bell Laboratories focused on polymers that could increase the lifespan of telephone cables. He developed (with Victor Lanza) a new polymer, used as a cable sheath, that was put into use in the 1960s.



21. Alma Levant Hayden, chemist (1927-1967)

Alma Levant Hayden was a chemist. While working at the National Institute of Arthritis and Metabolic Diseases (now the National Institutes of Health (NIH)),



22. Mary Jackson, engineer and mathematician (1921-2005)

Mary Jackson was NASA's first female African American engineer. Jackson was one of the women at NASA whose story was depicted in the *Hidden Figures* movie. At NASA, she worked on research related to the Supersonic Pressure Tunnel.



23. Mae Jemison, astronaut and aerospace engineer (1956-)

Mae Jemison (also a physician) was the first African American woman in space on the Endeavour space shuttle (1992).



24. Katherine Johnson, mathematician (1918-2020)

Katherine Johnson was a mathematician whose work at NASA was depicted in the Hidden Figures movie. Johnson calculated the flight path for Alan Shepard (the first American in space) and later checked critical flight path calculations for Apollo 13.



25. Lonnie G. Johnson, nuclear engineer and inventor (1949-)

Lonnie G. Johnson is a nuclear engineer and inventor who developed the popular Super Soaker water gun. Johnson worked on stealth technology for the U.S. Air Force and was a senior systems engineer on NASA's Galileo Project.



26. Percy Lavon Julian, chemist (1899-1975)

Percy Lavon Julian was known as the "Soybean chemist" because he synthesized steroids and hormones from soybeans. His research also led to the development of Aer-O-Foam, also called "bean soup," used to put out oil and gasoline fires in World War II.



27. Ronald E. McNair, physicist (1950-1986)

Ronald E. McNair was a laser physicist and a mission specialist for NASA on the STS 51-L Challenger mission that exploded shortly after takeoff in 1986.

28. Raye Montague, naval engineer (1935-2018)



Raye Montague was inspired by a childhood experience with a submarine. She was an engineer in the U.S. Navy and is credited as being the first person to design a naval ship, the USS Oliver Hazard Perry, using computer design tools.



29. Ruth Ella Moore, bacteriologist and microbiologist (1903-1994)

Ruth Ella Moore was a bacteriologist whose research included tuberculosis, blood types and race, bacteria and cavities, and how gut microorganisms react to antibiotics.



30. Willie Hobbs Moore, physicist (1934-1994)

Willie Hobbs Moore was a physicist whose research focused on infrared spectroscopy. She was the first African American woman to earn a doctorate in Physics.



31. Joan Murrell Owens, marine biologist (1933-2011)

Joan Murrell Owens studied button coral at the Smithsonian's National Museum of Natural History, where she discovered a new genus (the *Rhombopsammia*) and three new species. She was later a professor at Howard University.



32. Carolyn Parker, physicist (1917-1966)

Carolyn Parker worked on the Dayton Project, part of the Manhattan Project, a U.S. government atomic weapons research project during World War II.



33. Charles Henry Turner, entomologist and zoologist (1867-1923)

Charles Henry Turner was an entomologist and zoologist. Turner's research proved that insects can hear and led to the phrase "Turner's circling" to describe the way ants return to a nest.



34. Dorothy Vaughan, computer scientist and mathematician (1910-2008)

Dorothy Vaughan was a computer scientist and mathematician. She was part of the group of "human computers" depicted in the Hidden Figures movie.

As NASA adopted the use of computers, Vaughan taught herself FORTRAN and became part of NASA's Analysis and Computation Division (ACD). She also worked on the Scout Launch Vehicle Program.



35. Gladys West, mathematician (1930-)

Gladys West is a mathematician who worked on the processing and analysis of satellite data that helped lead to the development of the Global Positioning System (GPS).



36. J. Ernest Wilkins, Jr., mathematician and nuclear scientist (1923-2011)

J. Ernest Wilkins Jr. was a mathematician and nuclear scientist who was involved in the Manhattan Project. His work on nuclear reactor physics led to the discovery or co-discovery of phenomena like the Wilkins effect and the Wigner-Wilkins spectrum.



37. Daniel Hale Williams, surgeon (1856-1931)

Daniel Hale Williams performed the first open-heart surgery on a human in 1893. Dr. Williams also founded Provident Hospital and Training School for Nurses in Chicago, IL in 1891. Provident was the first hospital owned and operated by African Americans.



38. Granville Woods, inventor (1856-1910)

Granville Woods received more than 50 patents for his inventions. Sometimes called the “Black Edison,” Woods’ inventions included the “Synchronous

Multiplex Railway Telegraph,” a device that used static electricity to send messages between trains, and the “telephony,” a combination telephone and telegraph that could send messages by voice or Morse code.



39. Neil deGrasse Tyson, Astrophysicist, author, and science communicator (1958-)

Neil deGrasse Tyson studied at Harvard, Columbia and performed postdoctoral research at Princeton.

He is the director of The Hayden Planetarium at the Rose Center for Earth and Space, where he founded the Department of Astrophysics. He has written several books including, Astrophysics for People in a Hurry, Death by Black Hole and Other Cosmic Quandaries. He has received awards and honors from Harvard, NASA Space Foundation etc. An asteroid was named after him by the International Astronomical Union in recognition for his contributions to public appreciation of science. The asteroid, which is officially designated as (13123) Tyson, was discovered in 1994.

IMPORTANT WEBSITES

These sites list the major contributions of African American Inventors to America and the world before and after America's civil rights movement:

The Schomburg Center for Research in Black Culture-
<https://nypl.na2.iiivega.com/search?query=Black%20Inventors&search-Type=everything&pageSize=10>

African American & Global African Inventors & Inventions-
<https://www.blackpast.org/?s=Black+Inventors>

40 Black Inventors Who Changed the World-
<https://edgy.app/black-history-month-special>

List of African American inventors and Scientists –
https://en.m.wikipedia.org/wiki/List_of_African-American_inventors_and_scientists

Ten Black Scientists That Science Teachers Should Know About – PBS.org Teacher Lounge-
<https://www.pbs.org/education/blog/ten-black-scientists-that-science-teachers-should-know-about-and-free-resources>

Letter From a Birmingham Jail, by Dr. Martin Luther King.
This is the most important written document of the Civil Rights era. It helps to understand the Jim Crow Laws and the impact they had on all Americans then and now.
<https://www.blackpast.org/african-american-history/1963-martin-luther-king-jr-letter-birmingham-jail/>

Jim Crow Laws -
The Laws Dr. King Fought Against
This site lists the Jim Crow Laws that served to suppress African Americans educationally, economically, politically, socially, and psychologically by reducing them to 4th class citizenship.
https://www.nps.gov/malu/learn/education/jim_crow_laws.htm

The Black National Anthem-
“Lift Every Voice and Sing”- James Weldon Johnson (1871-1938)
<https://naacp.org/find-resources/history-explained/lift-every-voice-and-sing>

**AFRICAN AMERICAN WOMEN OF LAKE OSWEGO
AND SURROUNDING AREAS**