



# WOMEN OF COLOR

PIONEERS & INNOVATORS



1. Elizabeth "Bessie" Coleman—Born to Texan sharecroppers in 1892 as the 10th of 13 children, Ms. Coleman became the first woman of African-American descent to become a pilot and to hold an international pilot license. After hearing stories from pilots returning from World War I, Ms. Coleman determined to learn to fly. She finally went to France for lessons because no one in the United States was willing to teach her.
2. Sunita L. Williams (Captain, U.S. Navy)—As an astronaut, Ms. Williams has been a flight engineer and an International Space Station Commander. She holds the female records for the longest cumulative spacewalk time (50 hours 40 minutes), longest single spaceflight (195 days), and second longest time in space (322 days). As a pilot and test pilot for the U.S. Navy, she logged more than 3000 flight hours in over 30 different aircraft.
3. Anita D. Liang—Ms. Liang serves as NASA Glenn Research Center's Director of Safety and Mission Assurance. Her Government career has spanned 18 years, with previous positions at Glenn including Deputy Director of the Facilities and Test Directorate, Associate Director for Aeronautics, and Chief of the Aeropropulsion Project Office.
4. Yvonne D. Cagle, M.D. (Colonel, U.S. Air Force, retired)—Dr. Cagle, an astronaut and flight surgeon, is qualified as a mission specialist. She is assigned to NASA Johnson Space Center's Space and Life Sciences Directorate and is currently on detail as a visiting university professor. Her groundbreaking work is preserving historic space data as well as NASA's lead in global mapping, sustainable energies, green initiatives, and disaster preparedness.
5. Felicia Jones, Ph.D.—Dr. Jones serves as the Director of Engineering at the NASA Goddard Space Flight Center. She leads one of the largest engineering organizations at NASA responsible for the technical implementation of NASA and other Government agencies spaceflight programs. She provides executive leadership to a multidisciplinary, technical organization charged with advancing the Nation's science, human exploration, and space technology programs through all phases of the system life cycle in support of NASA's Earth Science, space science, and exploration missions.
6. Ellen Ochoa, Ph.D.—Dr. Ochoa, a former astronaut, has been Director of the NASA Johnson Space Center since 2012. She is Johnson's first Hispanic director and its second female director. In 1993, she became the first Hispanic woman to go to space. She has flown in space four times, logging 978 hours in orbit. Prior to her astronaut career, she was a research engineer and co-inventor on three patents for optical systems.
7. Hortense Blackwell Diggs—Ms. Diggs is the Deputy Director of Kennedy Space Center's Office of Communication and Public Engagement. Ms. Diggs joined NASA in 2000 as a flight assurance manager in the Expendable Launch Vehicles Safety and Flight Assurance Office where she was responsible for developing and implementing flight assurance activities. She was the Mission

Assurance Manager for launches of both Mars Exploration Rovers (Spirit and Opportunity) and the Deep Impact missions.

8. Christyl C. Johnson, Ph.D.—Dr. Johnson is the Deputy Director for Technology and Research Investments at the NASA Goddard Space Flight Center. She manages the scope of the Center's research and development and is responsible for formulating the Center's technology goals. Previously, she served at the White House as the Executive Director of the National Science and Technology Council.
9. Marla E. Pérez-Davis, Ph.D.—Dr. Pérez-Davis serves as the deputy director of the NASA John H. Glenn Research Center in Cleveland. In this capacity she shares with the center director responsibility for planning, organizing, and managing the Agency-level programs and projects assigned to the Center. Immediately prior to her current assignment, Dr. Pérez-Davis served as deputy director of the Research and Engineering Directorate, a post she held since 2014. In this position, Dr. Pérez-Davis was responsible for leading, planning, coordinating, and managing all phases of Glenn's research and engineering activities to accomplish NASA missions.
10. Jeanette J. Epps, Ph.D.—A NASA astronaut since 2009, Dr. Epps served on a 9-day NASA Extreme Environment Mission Operations (NEEMO) expedition in 2014. As she and her team lived 62 feet underwater off the coast of Key Largo, Florida, they investigated tools, techniques, and technologies for future space missions. Previously, she was a technical intelligence officer for the Central Intelligence Agency. She is set to become the first African-American crew member aboard the ISS on Expedition 56 in 2018.
11. Joan E. Higginbotham—Before she retired as an astronaut in 2007, Ms. Higginbotham logged over 308 hours on Space Shuttle Discovery, where her primary task was to operate the Space Station Remote Manipulator System as the International Space Station was constructed. Previously, she was the lead for experiments on Space Shuttle Columbia and actively participated in 53 shuttle launches.
12. Mae C. Jemison, M.D.—Dr. Jemison, the first African-American woman to travel in space, logged over 190 hours on Space Shuttle Endeavour as she conducted experiments in life sciences, material sciences, and bone cell research. Prior to being an astronaut, she was an Area Peace Corps Medical Officer and a medical doctor. Today, she owns and runs a company that researches and develops science technology for daily life.
13. Robyn N. Gordon—Ms. Gordon has been the Director of Center Operations at the NASA Glenn Research Center since 2009 and was the first African-American woman named into the Senior Executive Service at NASA Glenn. Previous positions she has held include Deputy Director of Glenn's Center Operations Directorate and Chief of the Diversity Management Office.
14. Digna Carballosa—Ms. Carballosa is the director of Human Resources (HR) at NASA's John F. Kennedy Space Center in Florida. She leads the organization that oversees training and development, recognition, workforce strategy and planning, Federal labor relations, employee services, and operations. With more than two decades of proven leadership experience and subject matter expertise, Carballosa develops innovative human capital management strategies and implements customer-focused and compliant HR operations. Highlights include sustained standards of excellence, reputable and diverse experience developing and implementing Government-wide and Center-specific HR policy, and alignment of human capital strategy to organizational goals. She consistently delivers results by aligning human capital strategy with mission priorities and helping organizations and employees improve performance.
15. Stephanie D. Wilson—Ms. Wilson logged more than 42 days in space during three space shuttle missions for which she was the robotic arm operator for inspecting the shuttle, supporting spacewalks, and maneuvering "Leonardo," the Multi-Purpose Logistics Module. Before flying as an astronaut, Ms. Wilson

worked in the Mission Control Center communicating with several space shuttle and space station crews.

16. Annie Easley—Ms. Easley began her career as a "human computer," at the Glenn Research Center doing computations for researchers. This involved analyzing problems and doing calculations by hand. Her earliest work involved running simulations for the newly planned Plum Brook Reactor Facility. Using languages like the Formula Translating System (Fortran) and the Simple Object Access Protocol (SOAP) to support a number of NASA's programs, she developed and implemented code used in researching energy-conversion systems, analyzing alternative power technology—including the battery technology that was used for early hybrid vehicles, as well as for the Centaur upper-stage rocket. Later in her career, she took on the additional role of equal employment opportunity (EEO) counselor. In this role she helped supervisors address issues of gender, race, and age in discrimination complaints at the lowest level and in the most cooperative way possible.
17. Dovie E. Lacy—Ms. Lacy is the chief of the Office of Communications and External Relations where she oversees a staff of civil servants and contractors who develop and implement programs, outreach activities, and communication strategies. Specifically, she ensures that all engagement activities foster interactions with learners of all ages to spark an interest in STEM using NASA materials and resources. Ms. Lacy develops partnerships to share NASA Glenn's expertise and achievements with diverse audiences. She also leads a staff that communicates Glenn's achievements via electronic, print, and Web-based media.
18. Christine Mann Darden, D.Sc.—Dr. Darden served as NASA Langley Research Center's Director of the Office of Strategic Communications and Education before retiring in 2007. An internationally known researcher in aerodynamics for nearly 30 years, she authored over 57 technical publications about sonic booms, supersonic wing design, and other topics.
19. Mary Jackson—Ms. Jackson began her career as a research mathematician, or "computer," at the Langley Research Center in her hometown of Hampton, Virginia. In 1953 she moved to the Compressibility Research Division. After 5 years at NASA and after taking several additional courses, she joined a special training program and was promoted to aerospace engineer. She then worked to analyze data from wind tunnel experiments and real-world aircraft flight experiments at the Theoretical Aerodynamics Branch of the Subsonic-Transonic Aerodynamics Division at Langley. Her goal was to understand air flow, including thrust and drag forces. Many years later, she was assigned to work with the flight engineers at NASA. Ms. Jackson worked to help women and other minorities to advance their careers, including advising them how to study so that they could change their titles from "mathematician" to "engineer" to increase their chances of promotion, which she did herself.
20. Dorothy Vaughan—In 1949, Ms. Vaughan became the acting head of the West Area Computers, a work group composed entirely of African-American female mathematicians. It would take 2 more years until she would be officially appointed the title of section head in January 1951. Mathematician Katherine Johnson was assigned to Ms. Vaughan's group before being transferred to Langley's Flight Research Division. Ms. Vaughan continued at Langley after NACA became NASA, specializing for the rest of her career in electronic computing and FORTRAN programming. She worked in the Langley Research Center's Analysis and Computation Division and also participated in Scout Project (Solid Controlled Orbital Utility Test system) tests at Wallops Flight Facility.
21. Katherine Johnson—Ms. Johnson helped track NASA's orbital missions from 1953 to 1986. She calculated the flight trajectory for Alan Shepard as he became the first American to go into space in 1959, verified the orbital mathematics for John Glenn as he became the first American to orbit the Earth in 1962, and calculated the flight trajectory for Apollo 11 in 1969, when the first human set foot on the Moon. President Barack Obama presented her with the Presidential Medal of Freedom in 2015.