Tammy Jernigan was born in Chattanooga, Tennessee and raised in Southern California. She completed her B.S. degree in physics (with honors) and M.S. degree in Engineering Science at Stanford University in 1981 and 1983, respectively. She then joined the Astronomy Department at UC Berkeley to pursue a Ph.D. degree in theoretical and computational astrophysics. Her research focused on the modeling of high-velocity outflows in regions of star formation, gamma-ray bursters, and the study of radiation produced by astrophysical shock waves. In 1985, she was selected as a NASA astronaut and subsequently completed her Ph.D. in Space Physics at Rice University while training for the Space Shuttle program.

Dr. Jernigan is a veteran of five Space Shuttle missions where she supervised the pre-flight planning and in-flight execution of critical activities aboard STS-40, 52, 67, 80, and 96. On STS-67, Dr. Jernigan served as Payload commander where the crew conducted continuous ultraviolet observations of a variety of stars, planets, and distant galaxies. During Dr. Jernigan's last flight, STS-96, the crew performed the first docking to the International Space Station and Dr. Jernigan executed a spacewalk of nearly eight hours to attach equipment to the exterior of the station.

In addition to her space flight experience, Dr. Jernigan held numerous management positions as an astronaut. She has served as Deputy Chief of the Astronaut Office, assisting with the management of both military and civilian astronauts and support personnel and as Deputy for the Space Station program where she developed and advocated Astronaut Office positions on the design and operation of the International Space Station. She also represented NASA management on the US negotiating team in Moscow during technical interchange meetings designed to resolve crew training, crew rotation, and operational issues. She is the recipient of numerous awards including Outstanding Woman of the Year in Science for Alameda County (2004), the NASA Distinguished Service Medal (2000), the Lowell Thomas Award, Explorer's Club (2000), five NASA Space Flight Medals (2000, 1996, 1995, 1992, 1991), the NASA Distinguished Service Medal (1997), the NASA Group Achievement Award - EVA Developmental Test Team (1997), the Federation Aeronautique Internationale Vladimir Komorov Diploma (1997 and 1996), the NASA Outstanding Leadership Medal (1996), the NASA Outstanding Performance Award (1993), the NASA Exceptional Service Medal (1993), and the Laurels Award, Aviation Week (1991).

In October of 2001, Dr. Jernigan joined Lawrence Livermore National Laboratory where she has served as the Principle Deputy Associate Director for the Physics and Advanced Technologies Directorate and as the Associate Director for Strategic Human Capital Management. Dr. Jernigan currently serves as Deputy Principal Associate Director for Weapons and Complex Integration (WCI). WCI is responsible for ensuring the safety, reliability, and security of the Nation's nuclear deterrent in the absence of nuclear testing,

In addition, Dr. Jernigan has served on several National Academy Boards including the Space Studies Board and the NASA Technology Roadmap Steering Committee. She is currently a member of the Naval Studies Board, tasked with providing independent, long-range, scientific and technical planning advice for the Naval Forces.

Dr. Jernigan resides in Pleasanton, California with her husband and former astronaut, Dr. Jeff Wisoff, and their two children, Jeffrey and Michael.