National Center
For Earth and Space Science Education

Biography: Jeff Goldstein, Ph.D.
Center Director, National Center for Earth and Space Science Education (NCESSE; http://ncesse.org)
Institute Director, Arthur C. Clarke Institute for Space Education (http://clarkeinstitute.org)

Dr. Jeff Goldstein is a nationally recognized science educator, and astrophysicist, who has dedicated his career to the public understanding of science and the joys of learning.

As Center Director for the National Center for Earth and Space Science Education, he is responsible for overseeing the creation and delivery of national science, technology, engineering, and math (STEM) education initiatives with a focus on earth and space. These include programs for schools, families, and the public; professional development for grade K-12 educators; and exhibitions for museums and science centers. Initiatives are meant to provide a window on the nature of science and the lives of modern-day explorers, with special emphasis on not just what is known about Earth and space but how it has come to be known. Programs embrace a Learning Community Model for science education. The vision is to help inspire and engage the next generation of scientists and engineers.

Jeff has received numerous awards for science education, including the Astronomical Society of the Pacific's 2005 Klumpke-Roberts Award for Outstanding Contributions to the Public Understanding and Appreciation of Astronomy, and the 1995 Barry M. Goldwater Educator of the Year Award from the National Capital Section of the American Institute of Aeronautics and Astronautics. He is a blogger at the Huffington Post, writes *Blog on the Universe* dedicated to science education, and is very active on Twitter.

Jeff oversaw the creation of the Center's national science education initiatives, including the Student Spaceflight Experiments Program (SSEP), which immerses hundreds of students across each participating community in every facet of real research. Since program inception in 2010, 36,300 grade 5-16 students have been fully immersed in microgravity experiment design, 6,400 formal proposals for experiments have been received from student teams, and 96 experiments have been selected to fly to low Earth orbit, with 81 already flown and 15 awaiting launch to the International Space Station in Fall 2014.

As Director of the *Voyage National Program*, he led the inter-organizational team that in 2001 permanently installed the *Voyage* model Solar System on the National Mall in Washington, DC, in front of the Smithsonian and is author of the storyboards. He just oversaw an extensive 2013 content update to all storyboards. The exhibition is dedicated to an understanding of Earth's place in space. The Center is now permanently installing replicas in communities across the nation, with *Voyages* thus far in Corpus Christi, Houston, and Kansas City.

Jeff is Director for the Center's activities supporting NASA's MESSENGER spacecraft mission to Mercury, which includes establishment and training of the *MESSENGER Educator Fellows*. This corps of master science teachers has provided training for 23,600 teachers on comparative planetology and Solar System exploration content since the program began in 2004, translating to likely over 1 million student experiences. He also oversees *Journey through the Universe*—a national science education initiative that has engaged entire communities—students, teachers, families, and the public through a National Team of visiting researchers. The program has reached over 200,000 students. He also created and directs the *Family Science Night* program at the Smithsonian's National Air and Space Museum, which has been in operation for 23

years, and has engaged 52,700 attendees to date.

Dr. Goldstein's planetary science research includes the development of techniques for the measurement of global winds on other planets using large telescopes on Earth. He developed computer models for the circulation of planetary atmospheres (models of global winds), and built ultra-stable CO_2 laser systems for infrared heterodyne spectrometers. The laser systems enabled these spectrometers to measure gentle breezes of 2 mph (1 meter/sec) on planets tens of millions of miles away. His research has produced the first direct measurement of the global winds above the clouds on Venus, the first measurement of the global winds on Mars, and allowed determination of the magnitude and direction of winds in the atmosphere of Saturn's largest moon Titan.

Prior to his current position, Dr. Goldstein served as Executive VP for Space Science Education and Research at Challenger Center for Space Science Education (1996-2005). From 1989 to 1996 he was an astrophysicist in the Laboratory for Astrophysics at the Smithsonian's National Air and Space Museum, departing as acting chairman. Dr. Goldstein received his M.S. and Ph.D. in astrophysics from the University of Pennsylvania, and was the recipient of the 1990 Outstanding Ph.D. Thesis Award, U. Pennsylvania Chapter, Sigma Xi. He received his B.A. in physics from the City University of New York. He is also proud to have attended the Bronx High School of Science.