



[NASA Marshall Space Flight Center to Host Physics Conference April 5-7, 2005 for Noted Researchers, Future Scientists](#)

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NASA will gather some of the world’s most brilliant and articulate scientific thinkers — and many students of science — next month to grapple with physics problems that vexed even the late, lauded physicist Albert Einstein.

Organized and hosted by the Science and Technology Directorate at NASA’s Marshall Space Flight Center in Huntsville, Ala., the conference, “Physics for the Third Millennium: II,” will be held April 5-7 at the Von Braun Center in downtown Huntsville. Science students are expected to join well-known physicists, including two Nobel Prize winners, for open discussion of the challenges of physics.

Topics of discussion will range from “dark matter” — invisible particles that may exist throughout the cosmos that could explain the puzzling gravitational drag on stars and galaxies — to string theory, the concept that all matter exists not as three-dimensional particles, but as flowing “strings” inhabiting up to 26 dimensions.

More than 300 are expected to attend the conference, including students from across the country. “There are student scientists with career interests who may never have met a working scientist,” said NASA scientist Mitzi Adams, conference outreach coordinator and researcher at the National Space Science and Technology Center in Huntsville. “We want to keep the meeting productive and useful, but informal enough to encourage students to interact with the professionals, discussing problems and gaining new scientific insight.

“Most importantly, we want the event to showcase the joy and personal fulfillment offered by careers in science,” Adams added.

The conference is part of a series of science-themed “Year of Physics” events scheduled around the globe in 2005. This year marks the 100th anniversary of the “annus mirabilis,” or “miracle year” of 1905, when Einstein delivered what physicists consider his most important

contributions — on the nature of matter and energy, the speed of light, and the startling likelihood that space and time can bend and stretch like cosmic taffy.

“Joining physicists around the world to celebrate and advance this area of scientific endeavor is of vital importance to NASA,” said Dr. Ann Whitaker, director of the Science and Technology Directorate at the Marshall Center.

“To meet the spaceflight and space science challenges that lie ahead of us, we seek breakthrough technologies that are dependent on a comprehensive understanding of the physical laws of the universe.”

Whitaker said pursuit of the unresolved mysteries of physics — among them dark matter, string theory and the study of quantum mechanics, which analyzes forces of motion and stability at the atomic and subatomic level — will help NASA meet the goals of the Vision for Space Exploration. The Vision is NASA’s ambitious effort to return humans to the Moon and send robotic and crewed missions to Mars and beyond in coming decades.

Conference speakers include Dr. Leon Lederman, director emeritus of Fermi National Accelerator Laboratory in Batavia, Ill.; Dr. Riccardo Giacconi, a physicist at Johns Hopkins University in Baltimore; and Dr. Francis Everitt, a professor of experimental physics at Stanford University in Stanford, Calif.

Lederman won a 1988 Nobel Prize in Physics for developing the neutrino beam method, a technique that uses a particle accelerator to identify and study neutrinos, wraith-like particles flying by the billions each second — at nearly the speed of light — through every square inch of matter in the universe. Giacconi, a 2002 Nobel Prize in Physics winner for his work in astrophysics, co-developed NASA’s Chandra X-ray Observatory, the world’s most powerful X-ray telescope, launched in 1999. Everitt is principal investigator of NASA’s Gravity Probe-B mission, launched in 2004 to test some of Einstein’s predictions. Both Chandra and Gravity Probe-B are managed for NASA by the Marshall Center.

The conference is the second gathering of its kind in Huntsville. Leading physicists and mathematicians convened here in 1998 to debate the challenge of developing futuristic propulsion concepts such as warp drives and “zero-point energy,” a potentially bottomless sea of invisible, ultra-powerful energy suspected to exist in the vacuum of space.

The event is co-sponsored by the University of Alabama in Huntsville; the Education Office of NASA’s Exploration Systems Mission Directorate in Washington; the American Physical Society headquartered in College Park, Md.; and the U.S. Army Space and Missile Defense Command and U.S. Army Aviation and Missile Research, Development and Engineering Command — both at Redstone Arsenal in Huntsville. Corporate sponsorship is provided by the Huntsville Times, Sverdrup Corporation and the SAIC Engineering, Science and Technical Services contract, all of Huntsville.

Members of the public are invited to attend the conference. For more information, visit:

<http://www.wyp-ptm.org/>

For more information about the National Space Science and Technology Center, visit:

<http://www.nsstc.nasa.gov/>