

2009-2010 Graduate Seminar Series

The Department of Mechanical Engineering – Engineering Mechanics

Proudly Presents

Dr. T. Alan Lovell

**Air Force Research Laboratory
Space Vehicles Directorate**

Dr. Thomas Alan Lovell is a Research Aerospace Engineer in the Spacecraft Component Technology



Branch within the Space Vehicles Directorate of the U.S. Air Force Research Laboratory located at Kirtland Air Force Base in New Mexico. He received his B.S. from Georgia Tech in 1991, his M.S. from Arizona State University in 1994, and his Ph.D. from Auburn University in 2001; all three degrees are in Aerospace Engineering. He has authored or co-authored 40 conference papers and a dozen journal articles on Astrodynamics and Spacecraft Guidance, Navigation, and Control. He recently contributed to the 3rd edition of

the book *Fundamentals of Astrodynamics* by David Vallado. He is a Senior Member of AIAA and AAS, and serves on the AAS Spaceflight Mechanics and AIAA Astrodynamics Technical Committees. His research interests include astrodynamics, orbit determination, trajectory optimization, and feedback control design. He has been involved in the Space Scholars Program as a mentor since 2002, and has served as Director since March of 2007.

Thursday, Nov. 12, 2009 3:00 – 4:00 p.m. Room 112, ME-EM Bldg.

AN OVERVIEW OF THE SPACE SCHOLARS PROGRAM: SUMMER RESEARCH OPPORTUNITIES IN THE AIR FORCE RESEARCH LABORATORY

This presentation summarizes the various research opportunities of the Space Scholars Program, a summer science and engineering internship for undergraduate and graduate students at the Air Force Research Laboratory (AFRL). The Program's mission is to train, nurture, and mentor the nation's future scientists and engineers while performing research of significance and value to the Air Force. The research opportunities exist in AFRL's Space Vehicles Directorate, which has facilities at Kirtland Air Force Base in Albuquerque, New Mexico; Hanscom Air Force Base in Bedford, Massachusetts; and the National Solar Observatory in Sunspot, New Mexico. The forte of the Space Scholars Program is the close interaction provided between the students and the Laboratory's highly regarded researchers. These researchers function as mentors to the students, offering them close support and guidance in carrying out their research. Among the many research areas available to students are space environment (including solar physics and space weather); space electronics; space-based infrared technology; guidance, navigation, and control; space power, thermal, and structures research; and orbital mechanics. In this presentation, Dr. Lovell will emphasize each of these areas and highlight specific projects by previous Space Scholars. Dr. Lovell will also be available throughout the day for individual discussions with interested students (schedule through Dr. Ryan Russell). **Only U.S. Citizens are eligible to participate in the Space Scholars Program.**