#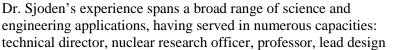 Research opportunities to support nuclear treaty monitoring and the need for technical experts in national and international roles

Dr. Glenn Sjoden
Chief Scientist
Air Force Technical Applications Center

November 15
4pm
Hill Hall 202

Biography. Dr. Glenn Sjoden is the Chief Scientist, Air Force Technical Applications Center, Patrick Air Force Base, Florida. The center operates and maintains the U.S. Atomic Energy Detection System, a suite of space-based and subsurface sensors, which monitors foreign compliance with the treaties limiting nuclear testing. A network of trace material analysis laboratories, 14 worldwide detachments and operating locations, and several unmanned equipment locations support the detection system. As Chief Scientist, he is the principal adviser to the commander on scientific and technical matters relating to the center's mission and to its relationships with national and international organizations.

Dr. Sjoden's experience spans a broad range of science and engineering applications, having served in numerous capacities: technical director, nuclear research officer, professor, lead design engineer, and licensed engineering consultant. During his military career, Dr. Sjoden served as an Air Force nuclear research officer from 1984 to 2004. He served in three separate assignments working on treaty monitoring missions with AFTAC, as an Air Force Education With Industry laboratory associate at Idaho National Laboratory for fuel reprocessing, and as a United States Air Force Academy faculty member as an associate professor, division chief of Applied Mathematics, and director of the Academy's Department of Defense High Performance Computing initiative.

In 2004, Dr. Sjoden retired as a lieutenant colonel after 20 years of active service. From 2004 to 2010, he served as a faculty member of the University of Florida in Nuclear and Radiological Engineering as the UF Florida Power & Light Endowed Term Professor for Nuclear Power Research. From 2010 to 2014, Dr. Sjoden served as a tenured professor of Nuclear and Radiological Engineering in the George W. Woodruff School at the Georgia Institute of Technology in Atlanta as a Joint Faculty with Oak Ridge National Laboratory, and also as the Director of Georgia Tech's Radiological Science and Engineering Laboratory. During his 10 years in academia, Dr. Sjoden also served as an international consultant, with activities that included services as a senior technical advisor to the Department of Energy, Department of Homeland Security, several U.S. national laboratories, and various agencies of the U.S. Government. He is an expert in high performance computing and deterministic and Monte Carlo radiation transport, and is the principal developer of the PENTRAN 3-D parallel deterministic radiation transport code. His research interests spanned reactor physics, SNM/materials detection, treaty monitoring technologies, nuclear power generation, non-destructive testing, nuclear medicine/medical physics simulations and algorithm development, computational fluids, flow induced vibration, and heat transfer.

Dr. Sjoden received his B.S. from Texas A&M University and his Ph.D. from The Pennsylvania State University, both in in Nuclear Engineering. He is a recipient of the American Nuclear Society Presidential Citation and a member of Tau Beta Pi.