



**Wednesday**  
**November 30, 2016**  
**3:30 pm**  
**Room 1005 EECS**

# Dr. David D. Meyerhofer

## Los Alamos National Laboratory

# High Energy Density Physics at Los Alamos National Laboratory

High energy density (HED) conditions are typically characterized by pressures in excess of 1 million atmospheres. They can be found in planetary interiors and many astrophysical systems. An inertial confinement fusion (ICF) implosion spends most of its time in these conditions. HED conditions are often reached in the laboratory through the ablation of a “pusher” material by high fluence x-ray or laser beams.

This talk will summarize some of HED research at Los Alamos National Laboratory, including hydrodynamic instabilities, novel ICF approaches, and a unique platform to study mix. One surprising observation is that some hydrodynamic instabilities show structures at high energy densities that were observed with classical fluid dynamics experiments.

**About the Speaker:** David D. Meyerhofer is the Physics Division (PD) Leader at Los Alamos National Laboratory (LANL). His research includes high energy density and plasma physics, inertial confinement fusion, and nonlinear interaction of high intensity lasers with matter and the vacuum. He leads the PD with research spanning a large range of energy scales, from ultracold atoms and neutrinos to TeV gamma ray observations. Prior to moving to LANL in 2015, he was 28 years at the U. of Rochester as Prof. of Mech. Engr. and Physics. He held many positions at the Laboratory for Laser Energetics, including Director of the Experimental Division and Deputy Director. He received his PhD in Astrophysical Sciences/Plasma Physics from Princeton U. in 1987 and AB in Physics from Cornell U. in 1981. He currently Chairs the APS Division of Plasma Physics (DPP). He has served on many APS/DPP committees, including Committee on Scientific Publications, was APS/DPP Distinguished Lecturer (2013-15), Assoc. Editor for Plasma Physics of Reviews of Modern Physics (2004-10) and Assoc. Editor for Physical Review Letters (2004-07). He served on the Natl. Res. Council Board on Plasma Science (1999-2003) and Committee on High Energy Density Plasma Physics (2000-02). He was elected APS Fellow in 2002.