

# The Evolution of Laser Technology and Its Relevance to Our National Energy Security

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## With Guest Lecturer Dr. Edward Moses

Principal Associate Director,  
*National Ignition Facility & Photon Sciences Directorate*  
*Lawrence Livermore National Laboratory*

National Ignition Facility's (NIF) 192 giant lasers, housed in a ten-story building the size of three football fields, will deliver at least 60 times more energy than any previous laser system. NIF will focus more than one million joules of ultraviolet laser energy on a tiny target in the center of its target chamber. The resulting fusion reaction will release many times more energy than the laser energy required to initiate the reaction. Experiments conducted on NIF will make significant contributions to national and global security, could lead to practical fusion energy, and will help the nation maintain its leadership in basic science and technology.



Dr. Edward Moses

### Abridged Biography:

Dr. Edward Moses is the Principal Associate Director for the NIF & Photon Science Directorate and was responsible for completing construction and bringing into full operation the world's largest optical instrument for achieving ignition in the laboratory and for studying inertial fusion energy. Dr. Moses joined Lawrence Livermore Laboratory in 1980, becoming program leader for isotope separation and material processing and deputy AD for Lasers. He has won numerous awards, including the 2003 NNSA Award of Excellence for Significant Contribution to Stockpile Stewardship, the 2004 DOE Award of Excellence for the first joint LLNL/Los Alamos National Laboratory experiments on NIF, and the D.S. Rozhdestvensky Medal for Outstanding Contributions to Lasers and Optical Sciences. He holds seven patents in laser technology and computational physics. Dr. Moses received his B.S. and Ph.D. from Cornell University in New York.

