

Abstract Submitted  
for the DPP13 Meeting of  
The American Physical Society

**Investigating Turbulent Mix in HEDLP Experiments** KIRK FLIPPO, FORREST DOSS, ERIC LOOMIS, LESLIE WELSER SHERRILL, JOHN KLINE, BARBARA DEVOLDER, JIM FINCKE, Los Alamos National Laboratory — We report on initial experiments planned for and performed at the NIF and Omega to investigate turbulent mix on a platform initially developed for the Omega laser facility and scaled up for NIF. We are investigating turbulence-driven mix from two colliding shocks and sheared layers resulting from Richtmyre-Meshkov and Kelvin-Helmholtz instabilities, such as those expected in ICF ignition capsule. Two shocks were generated at either end of cylindrical, CH foams, and the evolution of a Ti or Al tracer layer in the center plane or at one end of the foam was measured using point-projection radiography as it is either shocked twice or sheared. Comparison of this data with simulations using the Besnard-Harlow-Rauenzahn (BHR) model is used. BHR is intended for turbulent transport in fluids with large density variations and has the ability to improve our predictive capability for ICF experiments. Los Alamos National Laboratory, an affirmative action/equal opportunity employer, is operated by the Los Alamos National Security, LLC for the National Nuclear Security Administration of the U.S. Department of Energy under contract DE-AC52-06NA25396.

Kirk Flippo  
Los Alamos National Laboratory

Date submitted: 09 Jul 2013

Electronic form version 1.4