Simulations of Shock Propagation in DT-Wetted CH Foams: Direct-drive target designs with "wetted-foam" ablators offer the potential of a substantial target gain on the NIF. Recently, scientists from LLE and the University of Rochester's Department of Physics and Astronomy have performed adaptive-mesh-refinement (AMR) simulations using the software package *BEARCLAW*[1] to determine the effects of inhomogeneities in CH foams "wetted" with DT on shock speed. Figure 1 shows the simulated density profile for a shock moving through a $CH(DT)_4$ wetted-foam layer. Note the perturbations on the shock front due to the CH fibers. The decay time for these perturbations after the shock has entered the DT layer is small enough that they do not contribute significantly to feedthrough. The shock speed is found to be 10% faster for a fiber-resolved simulation than for a homogeneous mixture with the same average density. Accurate determination of the shock speed is important because mistiming of shocks can lead to degradation of target performance.

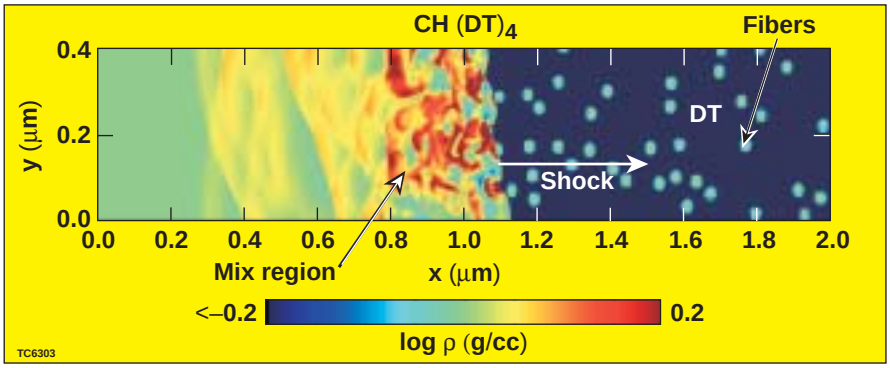

Figure 1. The density $\rho(x,y)$ from an adaptive-mesh-refinement simulation of a CH foam "wetted" with cryogenic DT. The CH fibers are seen in cross-section.

OMEGA EP Building Construction: Construction of the addition to the LLE building for the OMEGA EP project has begun. A contract was awarded by the University of Rochester for the construction of an 82,000-sq-ft facility adjacent to the OMEGA Target Bay. The contractor, LeChase, Inc., has finished clearing the site and laying out the staging areas for construction. An informal groundbreaking was held on August 22. Site work continued with the installation of the storm water management system. This system features a new pond that will provide detention and retention of storm water drainage to settle out contaminants prior to discharging the water into the Erie Canal, which is located several hundred yards north of the site. Work has also begun on the interfaces to the existing building with window removal, block-wall construction, and the cutting of an opening through the OMEGA shield wall to provide a beam path for the OMEGA EP beams into the existing OMEGA target chamber.

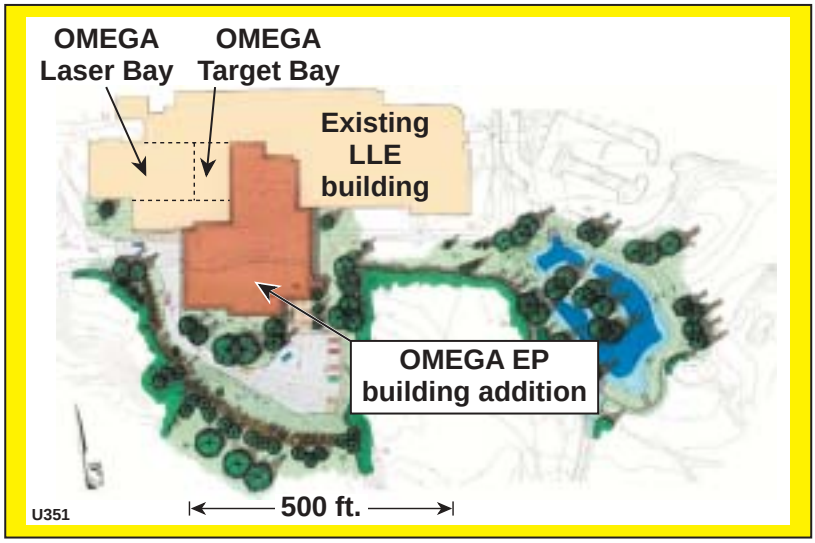

Figure 2. Drawing showing overall layout of the OMEGA EP building at its position relative to the existing LLE facility.

OMEGA Operations Summary: During August, OMEGA carried out a total of 134 target shots for NLUF, LLNL, LANL, and LLE experiments. Forty-one (41) shots were taken for five NLUF experiments for collaborations led by scientists from the University of Michigan; the University of California, Berkeley; the University of California, San Diego; and the MIT Plasma Science and Fusion Center. LLNL and LANL carried out seventeen (17) and eight (8) target shots, respectively. LLE's shots for the month totaled sixty-eight (68) for campaigns that included laser–plasma interaction, integrated spherical experiments, cryogenic target, Stockpile Stewardship Program, and laboratory astrophysics.

1. *BEARCLAW* is a general purpose software package for solving time-dependent partial differential equations (see http://www.amath.unc.edu/Faculty/mitran/bearclaw.html).

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