About the Cover:

The photograph on the cover features Ryan Nora, Department of Physics doctoral student, and his advisor Professor Riccardo Betti, LLE Scientist and Professor of Mechanical Engineering and Physics, sitting in the OMEGA viewing gallery with the target chamber visible behind the windows. Nora is the lead author of the featured article in this volume, which proposes a theory of hydrodynamic similarity that will guide LLE’s design of direct-drive–implosion experiments on OMEGA. According to the theory presented, these experiments are hydrodynamically equivalent to implosions that would result in ignition if carried out on the National Ignition Facility (NIF).

The figure below illustrates the size difference between hydrodynamically equivalent implosion targets on OMEGA and the NIF. The size increase for the NIF target is based on the scaling relations shown in the figure. The particular extrapolation between the facilities shown in this figure applies to the case of a symmetric direct-drive–ignition implosion on the NIF. $E_L$ is the total laser energy delivered to the target.

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For questions or comments, contact Matthew Barczyk, Editor, Laboratory for Laser Energetics, 250 East River Road, Rochester, NY 14623-1299, (585) 273-3732.

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