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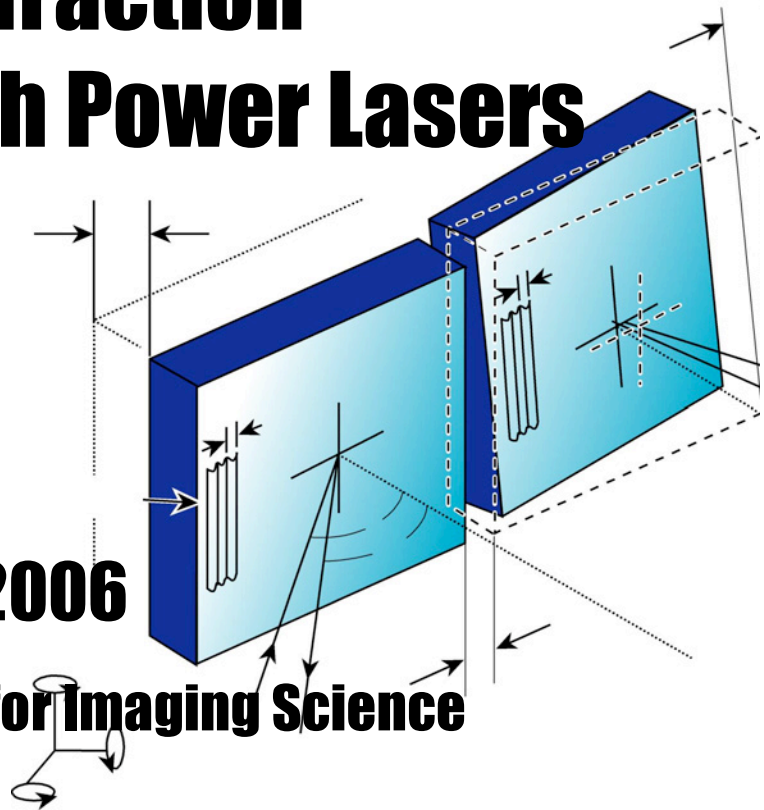
# The Optics and Imaging of Meter-Scale Diffraction Gratings for High Power Lasers

**Terrance Kessler**

*Senior Research Engineer  
Laboratory for Laser Energetics  
University of Rochester*

**4pm, Wed, April 26, 2006**

**Auditorium of the Center for Imaging Science**



An ultra-high intensity laser beam is being constructed at the University of Rochester's Laboratory for Laser Energetics (LLE) to image through high-density plasmas produced by the 60-beam OMEGA laser system. Meter-scale diffraction gratings are required to compress the laser bandwidth to between 1 and 10 ps pulsewidths with greater than a kilojoule of energy. The laser compressor contains four large gratings; each composed of three 1/2 meter-size holographic gratings. The optics and imaging techniques used to coherently assemble these gratings will be discussed.

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**Speaker Bio**

Terry Kessler is a senior research engineer at the University of Rochester's Laboratory for Laser Energetics (LLE). He has lead the Optics and Imaging Sciences group at LLE for over 20 years in support of laser fusion. His research activities have included the design and testing of high peak power lasers, laser coherence control, and technology development involving holography and imaging. In addition, Terry has taught the Holography course at RIT for 15 years and is currently constructing a new holography laboratory in the basement of the CIS building.