Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Correlating Structural and Spectral Fluctuations in a Lasing Colloidal Suspension JASON W. MERRILL, Yale University, Department of Physics, HUI CAO, Yale University, Departments of Physics and Applied Physics, ERIC R. DUFRESNE, Yale University, Departments of Mechanical Engineering, Physics, Chemical Engineering, and Cell Biology — When multiply scattering media with optical gain are optically pumped above a critical threshold, they emit coherent radiation in many spectral lines. This phenomenon is known as random lasing. The wavelengths of these spectral lines depend sensitively on the spatial distribution of scatterers, but this relationship has only just begun to be explored. We study the time and frequency domain statistics of random laser spectra emitted from dense colloidal suspensions doped with laser dye with an eye toward using this information as a probe of the underlying colloid dynamics.

Jason Merrill
Yale University, Department of Physics

Date submitted: 10 Dec 2010 Electronic form version 1.4