

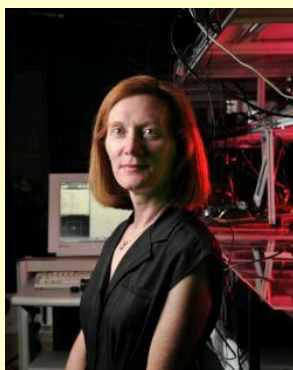
# Yale University Department of Physics

## THE 38th ANNUAL HANAN ROSENTHAL MEMORIAL LECTURE

The Department of Physics at Yale University Announces the  
Hanan Rosenthal Memorial Lecturer

### Professor Margaret Murnane JILA,

Departments of Physics and Electrical and Computer Engineering,  
University of Colorado



### “Science at the Timescale of the Electron – Capturing the Fastest Motions in our Physical World”

Ever since the invention of the laser 50 years ago, scientists have been striving to extend coherent laser-like beams into the x-ray region of the spectrum. Very recently, the prospects for tabletop laser-like (coherent) x-ray sources have brightened considerably. This advance is the direct result of a new ability to manipulate electrons on their natural, attosecond ( $10^{-18}$  sec), time-scales using ultrafast lasers. This talk will also highlight how fast x-ray bursts can capture the motions of charges, spins, phonons and photons in molecules and materials for a host of applications in science and technology.

**Monday, April 23, 2012**

*Tea will be served at 3:30 p.m. in the 3rd Floor Lounge, SPL*

The lecture will be held at 4:00 P.M.  
in the Sloane Physics Laboratory (SPL), Room 59  
at 217 Prospect Street, New Haven, CT.  
All interested persons are invited to attend the lecture