In the 1980s, tabletop laser systems capable of producing terawatts of peak power in picosecond pulses of light were developed. Since that time, the push to higher intensities and shorter pulses has been relentless. Today, compact laser systems can yield electromagnetic fields that tear atoms apart with pulses only a few optical cycles in duration. We will examine how these ultrashort and ultrastrong pulses are made and measured, and how the most fundamental of light-matter interactions has led to an altogether new regime of ultrafast science, where flashes of light one-billionth of one-billionth of a second are possible.

Friday, November 7th 2008, McCook Auditorium, 3:00 pm, Refreshments 2:45 pm