

# CU Physics Department Colloquium

Monday, October 3, 2011 4:10 PM 428 Pupin Hall

## Precision Metrology with Ultracold Atoms and Molecules

We will discuss ongoing and planned measurements with laser-cooled atoms in magneto-optical traps and in optical lattices of various dimensionalities. Progress toward ultracold bi-alkaline-earth molecules and a molecular lattice clock will be presented. We will describe the applications of this research to fundamental physics questions such as dark matter detection and stability of the electron-proton mass ratio.



**Tanya Zelevinsky, Columbia University**