

**TUFTS UNIVERSITY**  
**Physics and Astronomy Colloquium**

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**“Design and understanding of  
new functional materials using  
quantum mechanics  
simulations”**

In this colloquium I will introduce the subject of researching the properties of novel materials by numerically solving the quantum mechanical equations that govern the behavior of their electrons. I will then show application of this kind of studies to the field of multiferroic materials, which show coexistence of both ferroelectric and (anti) ferromagnetic ordering. This property lends itself to potential applications in technological devices such as computer memories, since it would be then possible to use an electric field to change the magnetization of a material, or a magnetic field to change its polarization.

*3:00 pm*  
*Friday, February 24, 2012*  
*Robinson 253*  
*Medford Campus*

*Refreshments served at 2:30 in The Knipp Library, Room 251*