

# Physics Colloquium

## Ion traps and laser control of matter in the second quantum revolution

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**4:00 p.m.**

**114 Begeman Hall**

The *First Quantum Revolution* started over 100 years ago and led to the discovery of the rules that govern physics on an atomic scale. This understanding provided the necessary insight required to develop world changing technologies such as lasers and transistors (i.e. computers). We are currently in the early stages of the second quantum revolution which is characterized by unprecedented control over light and matter. Ion traps in particular have been a boon to progress because of their unique ability to store and isolate matter from its environment for weeks at a time. Once separated, lasers can manipulate trapped ions and even allow us to *observe single atomic ions with the naked eye!* In this talk I will introduce the field of ion trapping and the role of light in the manipulation of matter as well as their implications. Finally, I will discuss some of the very recent progress on controlling molecular ions in our lab.

*Everyone Welcome! Refreshments Provided.*