

## **EXCITED STATE LIFETIMES TO REVEAL NUCLEAR PROPERTIES**

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**4:00 P.M. NSH 124**

The knowledge of transition probabilities between nuclear states is key to understanding properties of nuclei and their excitation modes. For example electric quadrupole transitions between the lowest excited states define the deformation of nuclei, and tell us whether they are rotating footballs or vibrating spheres. Other examples are magnetic dipole transitions, which are fingerprints for changes in the proton-neutron structure of nuclear excitations, and electric dipole transitions are an experimental probe into neutron skins developing around a proton-neutron core. The challenge is that measuring absolute transition probabilities means measuring lifetimes, either directly or through cross sections, over tens of orders of magnitude, that is from femto- to giga-scales. A selection of nuclear phenomena, and techniques and devices to study them through the measurement of lifetimes will be discussed.

**Nuclear  
Seminar**

**All interested  
persons are  
cordially  
invited to  
attend.**