**SPEAKER**:

Chris Marx, Oberlin College

**TITLE**:

Potential dependence of the density of states for Schrödinger operators

**ABSTRACT:**
In this talk we will explore the dependence of the density of states for Schrödinger operators on the potential. The density of states characterizes the averaged spectral properties of a quantum system. Formally, it can be obtained as an infinite volume limit of the spectral density associated with finite-volume restrictions of a quantum system. Such limit is known to exist for certain quantum mechanical models, most importantly for Schrödinger operators with periodic and random potentials.

Following ideas by J. Bourgain and A. Klein, we will consider the density of states outer measure (DOSoM) which is well defined for *all* Schrödinger operators. We will explicitly quantify the parameter dependence of the DOSoM by proving a modulus of continuity with respect to the potential (in $L^\infty$-norm and weak topology). This result is obtained for all discrete Schrödinger operators on infinite graphs and captures the geometry of the graph at infinity. Applications of this result to random and ergodic operators will be presented.

This talk is based on joint work with Peter Hislop (University of Kentucky).