SPEAKER:

Jonathan Benoit, University of Kentucky

TITLE:

Dynamical Localization of the Anderson Model on $\mathbb{Z}^d$

ABSTRACT:

The Anderson Model on $\ell^2(\mathbb{Z}^d)$ describes the behavior of an electron moving through a solid-state crystalline structure. In this talk, we will show how the family of random operators $H_\omega = -\Delta + V_\omega$ has finite positional moments over all time with probability 1. The key estimate in this result is the Semi-Uniformly Localized Eigenfunction (SULE) estimate. We also leverage the fact that H_ω has pure point spectrum almost surely, and the set of eigenfunctions $\{\phi_n\}$ decay exponentially with centers of localization that move away from the origin sufficiently fast. We will conclude the talk by giving a brief overview of how SULE is shown to hold in this setting.