

**SPEAKER:**

Faith Hensley, University of Kentucky

**TITLE:**

An Inverse Problem for the Radiative Transport Equation

**ABSTRACT:**

The radiative transport equation (RTE) is a model for light propagation inside a scattering medium. One can consider the following inverse problem for the RTE: Given the ability to measure light intensity on the boundary, can we recover the light's absorption rate? In this talk, we set up a boundary value problem for the RTE to model the scenario of shooting a laser beam in a foggy medium. We then show this boundary value problem is uniquely solvable and construct a special solution before solving the inverse problem of recovering the absorption coefficient.