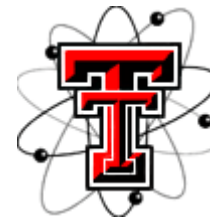


*Physics & Astronomy Colloquium -  
Fall 2020*



**Tuesday, Aug 25<sup>th</sup> at 3:30 pm**

(Zoom colloquia: Please find the meeting information below)

**Dr. Wade DeGottardi**

Physics & Astronomy, Texas Tech University

**Topological Materials, Strongly Correlated One-Dimensional Systems, and Quantum Information**

I will present a broad overview of current and proposed research activities here at Texas Tech. I am a condensed matter theorist focused on topological materials, strongly correlated quantum liquids, and engineered quantum systems such as photonic materials and superconducting circuits. The goal of this work is to predict new physics, propose new ways of probing predicted physics, and to apply these findings to problems in quantum information. Topological systems of interest include superconducting wires hosting Majorana fermions, fractional quantum Hall liquids, and topological insulators. The physics of these systems is often studied through the lens of the exotic quasiparticles they exhibit. Work on strongly correlated one-dimensional systems has focused on a diverse array of physical systems, including carbon nanotubes, quantum wires, cold atomic gases, and the molecular chains believed to be present in the atmospheres of certain neutron stars. Aspects of these systems studied include the emergence of hydrodynamics, Luttinger liquid phenomenology, and non-linear Luttinger liquid effects.

**Zoom meeting ID: 995 291 7599 Passcode: PHAS**

(Find more information at Department Colloquia Webpage)