

Physics & Astronomy Colloquium -
Spring 2020

Tuesday, Feb 11th at 3:30 pm in SC 234

Dr. Andrew Whitbeck
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**What particle accelerators can teach us about
dark matter**

The nature of dark matter is one of the biggest open questions in the field of particle physics. Astrophysical evidence strongly points to a non-baryonic form of matter, historically referred to as dark matter, that makes up more than 80% of the matter in the universe. These observations, however, only inform us about the gravitational interactions between dark matter and the luminous matter in the universe, leaving much to be learned about the particle nature of dark matter. One of the most promising methods for expanding our knowledge about the nature of dark matter is to produce and study it in a laboratory using particle accelerators. This talk will briefly review the motivations for accelerator-based dark matter research, how the Texas Tech University high energy physics group is trying to tackle this problem using data from the Large Hadron Collider (LHC) and the Compact Muon Solenoid experiment, and what future developments are on the horizon to go beyond the capabilities of the LHC.

Refreshments at 3:00 pm in SC 103