**Idaho State University
Physics Colloquium**

***The Higgs Boson as a Tool for Discovery at the LHC***

Dr. Keith Ulmer
University of Colorado Boulder

The Large Hadron Collider (LHC) at CERN currently provides the highest energy particle collisions ever produced in a laboratory. These collisions were reconstructed and analyzed by the CMS and ATLAS experiments to claim the discovery of the Higgs Boson in 2012, thus completing the Standard Model of particle physics. While incredibly successful in describing observed phenomena in elementary particle interactions, the Standard Model is known to be an incomplete theory. This talk explores recent efforts to use the Higgs Boson itself as a tool for discovering new physics beyond the Standard Model with the aim of understanding dark matter and electroweak symmetry breaking. I will conclude with a discussion of the future discovery potential of the LHC and some of the technological advances that will drive the progress forward in the coming decade.

**Monday, March 29 2021**
**Via Zoom(**[**https://isu.zoom.us/j/81067472185**](https://isu.zoom.us/j/81067472185)**)
4:00 – 4:50 pm**