

UNL Department of Physics and Astronomy presents:

# **Colliders for the Future of High Energy Physics**

PRESENTED BY  
**JULIA GONSKI**  
**SLAC**



**THURSDAY**  
**FEBRUARY 22**  
**4:00 PM**  
**IN JH 136**

## **ABSTRACT**

High energy particle colliders have been a cornerstone of fundamental physics research for decades. They have provided increasingly stringent evidence of the Standard Model, most recently with the observation of the Higgs boson at the Large Hadron Collider (LHC). Outstanding goals for the field, such as further characterizing the Higgs, probing the dark sector, and exploring the unknown, require a clear and firm plan to ensure that the success of collider physics doesn't end with the LHC in 2040.

This talk will cover the status of planning for the global future of high energy collider physics. Essential to this topic is the process and impact of the US Snowmass and P5 community strategic planning efforts. Examples of specific collider proposals will be provided, describing both electron-positron Higgs factories and multi-TeV discovery machines, along with some comparison of options. Finally, the immediate next steps will be discussed in the context of accelerator and detector R&D and cross-field collaboration, together ensuring a bright and exciting future for our understanding of the fundamental universe.