

UNL Department of Physics and Astronomy presents:

# First Results from the Fermilab Muon g-2 Experiment

PRESENTED BY  
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**THURSDAY**  
**APRIL 28**  
**4:00 PM**  
**VIA ZOOM**

Refreshments will be served in the JH 1st Floor Vending Area at 3:30

## ABSTRACT

The goal of particle physics is to understand the world around us through the study of fundamental particles and their interactions. One of these fundamental particles is the muon, a heavy cousin of the electron. The experimental measurement of the anomalous magnetic moment of the muon has shown a long-standing discrepancy with the value predicted by the standard model of particle physics. The first results of the next generation measurement by the Muon g-2 experiment (with an uncertainty of 0.46ppm) were released in 2021 and confirmed the discrepancy. Averaging with previous experimental results reduces the uncertainty to 0.35ppm and increases the discrepancy with the predicted value to greater than four standard deviations. This provides a tantalizing hint that all is not well with the standard model of particle physics.