

DEPARTMENT OF PHYSICS & ASTRONOMY

Physics & Astronomy Colloquium

Dr. Jeffrey Berryhill (Fermi Lab)

(Host: Prof. Yongbin Feng)



3:30 - 4:30 p.m. | Tuesday, Oct. 21

ESB I Building 120

**Title: A New Era in Electroweak Precision
Measurements at the Large Hadron Collider (LHC)**

Abstract: For the first five years of the LHC, it was demonstrated that experiments could measure a wide variety of electroweak phenomena, including the celebrated discovery of the Higgs boson. However, their precision was not yet sufficient to surpass the achievements of the LEP/SLD and Tevatron eras in other important ways. From 2015-2025, the accumulation of much larger data samples, new analysis techniques, and in-depth understanding of detectors have enabled the LHC experiments to provide competitive results, including the precision measurement of fundamental constants at the one-loop level and the observation of vector boson scattering and triple boson production in multiple channels.



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Biography:

Dr. Jeffrey Berryhill is a senior scientist at Fermi National Accelerator Laboratory, where he leads efforts within the U.S. Compact Muon Solenoid (CMS) program at the Large Hadron Collider. He has been a member of the CMS Collaboration since 2006, following earlier work on the BaBar (2001–2006) and CDF (1994–2001) experiments.

He earned his Ph.D. in Physics from the University of Chicago and previously held a postdoctoral appointment at the University of California, Santa Barbara. At Fermilab, Dr. Berryhill also contributes to institutional service, including membership on the URA Doctoral Thesis Award Committee.

