

# PARTICLE PHYSICS

THE UNIVERSITY OF CHICAGO  
ENRICO FERMI INSTITUTE

## SEMINAR

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UC SANTA BARBARA



### “A Stop To Natural SUSY?”

**Abstract:** In 2012, the European Organization for Nuclear Research announced the discovery of the Higgs boson at the Large Hadron Collider. This scientific milestone represents the culmination of a nearly half-century effort that has consistently confirmed, through precision experimental measurements, the correctness of the Standard Model (SM) of Particle Physics. Together with astronomical evidence for dark matter, the measured mass value of the Higgs boson suggests that there are new particles and interactions awaiting discovery. Data being collected with the LHC may help in their discovery and ultimately provide clues guiding us towards a theory that can give a full explanation of what we observe in nature. My talk will give an overview of the ongoing searches for a relatively light partner to the top quark ( $\sim 1\text{TeV}$ ) predicted by Supersymmetry. This light top partner could explain the observed value of the Higgs mass as well as have ties to dark matter. I will show the latest results from the LHC and discuss possible future directions in our search for physics beyond the SM.

**MONDAY, November 27, 2017**  
**4:15 in PRC 201**

**If any assistance is needed, please call  
Holly Jaffey in advance at (773) 702-8113**