



# PHYSICS AND ASTRONOMY SEMINAR

## Dr. Abi Soffer

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### “Long-lived Particles and their Search at Colliders”

#### Abstract

Many new-physics scenarios allow for collider production of particles with decays that are suppressed, due to small couplings or large intermediate mass scales. Examples include supersymmetry with R-parity violation or different mass scales, as well as models with hidden sectors that may or may not be related to dark matter. Experimentally, the decay of a particle with a lifetime of order picoseconds to nanoseconds would be seen as a displaced vertex of tracks removed from the beam collision point. Searches for such signatures are becoming increasingly popular. The talk will cover the physics of long-lived particles and the experimental challenges of studying them in current detectors, focusing on recent displaced-vertex searches performed at ATLAS and BABAR.

Monday, February 15, 2016

1:30 p.m.

David Strong Building

Room C124