



Department of Physics Colloquium

August 28, 2023



3:00 PM

**Enabling New Discoveries: Designing and building
new detectors for the High-Luminosity LHC**

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In ten years of operation, the Large Hadron Collider (LHC) has made major strides in our understanding of Particle Physics: the Higgs boson was discovered, and its properties have been measured. So far, all measurements point toward yet another confirmation of the Standard Model of Particle Physics. However, we know that New Physics beyond the Standard Model must exist. The High-Energy Physics community is gearing up to upgrade both the LHC accelerator and detectors to boost our sensitivity to New Physics in what is known as the High-Luminosity LHC (HL-LHC) program. In this talk I will summarize what motivates this upgrade, how we are designing new detectors to meet the challenges presented by a high-luminosity collider, and what physics the HL-LHC will unlock.

**This colloquium will be held in-person, at SERC 116
unless announced otherwise.**