

Notre Dame **Science**
Department of Physics

SEARCHING FOR THE GENETIC CODE OF OUR UNIVERSE: THE CMS EXPERIMENT AT THE LHC

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Currently based at CERN

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4:00 P.M. NSH 118

(Refreshments at 3:30 P.M. NSH 202)

The Higgs particle is the last remaining undiscovered fundamental particle in the Standard Model of particle physics where it plays a very special role in the origin of mass. Its discovery is one of the original motivations for the largest physics experiments ever built: the ATLAS and CMS experiments at the Large Hadron Collider (LHC) near Geneva Switzerland. Meanwhile, in the ~20 years since the inception of these experiments there has been a growing conviction that the Standard Model is not the end of the story and the Higgs may be just one of many new things that the LHC could discover. In this talk, the status of the LHC and CMS in early operation will be presented along with the expectations for data soon to be accumulated in 2011 and 2012. These data could reveal an array of new particles that have a revolutionary impact on our understanding of the underlying code that ultimately determines the character and evolution of our universe. Remarkably, at the other extreme, even if nothing new is seen the impact on physics will be profound.

Colloquium

All interested
persons are
cordially
invited to
attend.