PHYSICS AND ASTRONOMY COLLOQUIUM

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Future after Higgs Discovery: the LHC Project

Over the last century, particle physics evolved from an observational field enumerating the contents of micro-world into a precision science embarking on describing the fundamental properties of matter and energy and even the evolution of the Universe. This phase transition has become possible with the invention of particle accelerators and later colliders yielding a series of discoveries, which have reshaped the field. Recent discovery of the Higgs boson by the international team of scientists at the Large Hadron Collider (LHC) has been a crown jewel in this series and a landmark discovery providing at least a technical explanation for the mechanism of electroweak symmetry breaking. We will discuss the impact of the Higgs discovery on the field and the new directions in our quest for understanding the Universe at the most fundamental level. We will then focus on the future of the LHC project and its experiments and the role and contributions of the Texas A&M high energy physics program in shaping the future at the flagship facility in particle physics.

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