

**Tuesday**  
**Oct 16<sup>th</sup>**  
**At 3:45pm**



**The Quest for the New Standard  
Model: Searching for BSM Physics  
with Rare-Isotopes**

**Abstract:**

The development of the Standard Model (SM) has been one of the crowning achievements in modern physics, and is the cornerstone of current subatomic studies. Despite its success, the SM is known to be incomplete, and providing limits on possible physics beyond the Standard Model (BSM) is crucial to our understanding of the natural universe. Although they are generally complex, atomic nuclei can be exploited as a laboratory for these studies through the use of high-precision measurements of specific radioactive decay modes. The recent development of next-generation facilities focused on the production of these short-lived exotic isotopes has opened new avenues of research in our search for BSM physics in the era of the LHC. This work is at the precision and sensitivity frontiers, and helps to bridge the gap between atomic, nuclear, and particle physics using novel, state-of-the-art detection techniques. In this talk, I will use these topics to highlight the significant role of nuclear decay in our ongoing search for dark matter, additional generations of quarks, and new descriptions of the weak interaction. These studies play a critical role in providing the groundwork for our quest to develop the "New Standard Model".

**CYCLOTRON  
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Room 228

Refreshments will be  
served at 3:30pm



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