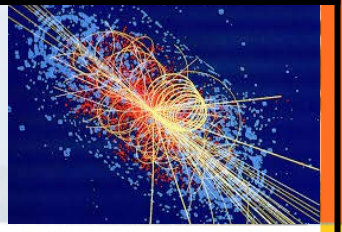
Lakehead UNIVERSITY | Department of Physics



Proudly Presents The

# Canadian Association of Physicists (CAP) Lecture Series

**Speaker:**

## Dr. Daniel Stolarski

Assistant Professor, Theoretical Physics

Carleton UNIVERSITY

# *"The Nature of the Higgs Boson"*

With the recent discovery of the Higgs boson at the Large Hadron Collider, we have begun to uncover the nature of electroweak symmetry breaking: how elementary particles acquire mass. I will describe the underlying theory of particle physics, the Standard Model, and how it is now completed by the Higgs. I will also explain the theoretical framework used to go from seeing a bump in certain experimental distributions to being sure this discovery is in fact a Higgs boson. Finally, I will describe the shortcomings of the Standard Model, focusing on the hierarchy problem, and show how future measurements of the Higgs can shed light on some of the mysteries of our universe.

Short Bio:

*Daniel Stolarski is a theoretical particle physicist who will be joining the faculty at Carleton University beginning in January 2016. He is currently a fellow at CERN where he works on the interplay of experimental and theoretical results, developing new techniques for the experiments at the Large Hadrons Colliders. Previously, he was a joint postdoctoral researcher at Johns Hopkins and the University of Maryland, where he worked on the phenomenology of supersymmetry and extra dimensions. Daniel received his Ph.D. in 2010 at the University of California, Berkeley, where he worked with Yasunori Nomura on the interaction between flavour physics and supersymmetry, and also on indirect searches for dark matter using gamma ray telescopes. He received his B.Sc. at Caltech where he worked with Prof. Alan Weinstein on the CMS detector. Daniel and his wife and young daughter are excited about moving to Canada, and also looking for tips on how to deal with the cold.*

**DATE:** FRIDAY, MARCH 4, 2016

**TIME:** 3:00 pm

**Room:** RC 1002

*Event and Refreshments Generously Sponsored by :* NSERC CRSNG