George H. Lewis

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Objective

An exciting job requiring a unique computational, analytic, statistical, and technologic skill set.

Education

Expected PhD in Experimental High Energy Particle Physics   *Spring 2013*
New York University, New York, NY

B.A. Physics and Mathematics   *Spring 2007*
Columbia University, New York, NY

Experience

Graduate Research   *Fall 2007 - Present*
New York University
The European Organization for Nuclear Research (CERN)

- Active member of the ATLAS collaboration.
- Contributor to the ROOT/RooStats Project

ATLAS is one of the multi-purpose experiments built to detect, analyze, and discover the products of 7-8 TeV proton-proton collisions at the Large Hadron Collider (LHC) at the European Organization for Nuclear Research (CERN) near Geneva, Switzerland. The High Energy Physics group at New York University has played a leading role in data aquisition, processing, analysis, and statistical modeling. The primary focus of our group since the startup on the LHC program has been precise measurements of the Top Quark and the discovery of the Higgs Boson. In particular, we have been extremely successful at developing statistical tools and techniques that have become the primary means of making precise measurements, claiming discovery, and setting limits on proposed physical models.

As an active member of both the ATLAS collaboration and the High Energy Physics group at NYU, I have worked in a wide variety of roles during my graduate carreer. Between taking graduate courses at NYU in 2008 and 2009, I pioneered a data-driven technique for measuring a primary source of systematic uncertainty in Higgs boson searches. In 2010, I became the primary developer for the Missing Transverse Energy trigger

Teaching Assistant   *Fall 2007 - Fall 2008*
New York University

- Graduate Quantum Mechanics I
- General Physics I

Undergraduate Research   *Summer 2006*
Los Alamos National Laboratory
Stanford Linear Accelerator (SLAC)

Selected Publications

The ATLAS Collaboration. "**Search for same-sign top-quark production and fourth-generation down-type quarks in pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector**," in *Journal of High Energy Physics (JHEP) 1204 (2012) 069*. 2012.

The ATLAS Collaboration. "**Search for exotic same-sign dilepton signatures (b' quark, $T5/3$ and four top quarks production) in 4.7 fb^{-1} of pp collisions at $\sqrt{s} = 7$ TeV with the ATLAS detector**," in *ATLAS-CONF-2012-130*. 2012.

The ATLAS Collaboration. "**Statistical combination of top quark pair production cross-section measurements using dilepton, single-lepton, and all-hadronic final states at $\sqrt{s} = 7$ TeV with the ATLAS detector**," in *ATLAS-CONF-2012-024*. 2012.

Kyle Cranmer, George Lewis, Lorenzo Moneta, Akira Shibata, Wouter Verkerke. "**HistFactory: A tool for creating statistical models for use with RooFit and RooStats**" in *CERN-OPEN-2012-016*. 2012.

The ATLAS Collaboration. "**Measurement of the top quark pair production cross-section based on a statistical combination of measurements of dilepton and single-lepton final states at $\sqrt{s} = 7$ TeV with the ATLAS detector**," in *ATLAS-CONF-2011-108*. 2011.

The ATLAS Collaboration. "**Measurement of the top quark pair production cross section in pp collisions at $\sqrt{s} = 7$ TeV in dilepton final states with ATLAS**," in *Phys Lett B707 (2012) 459-477*. 2010.

SELECTED TALKS AND POSTERS

Diego Casadei, George Lewis. "**Missing ET signicance (XS) triggers in ATLAS**" Level 1 Calorimeter Joint Meeting, Cambridge University, 2011.

George Lewis. "**New ATLAS Triggers Based on the Missing ET Significance**" Large Hadron Collider Conference (LHCC), CERN, 2011.

SKILLS

Programming: C++/C, Python, Numpy/Scipy, Javascript, HTML/CSS, LaTeX, PHP, git/svn, bash
High Energy Physics: ROOT, RooStats, Athena