

Mitchell P. Soderberg

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Education

Ph. D. September, 2006. Physics, University of Michigan, Ann Arbor, MI
M.S. August, 2004. Physics, University of Michigan, Ann Arbor, MI
B.S. May, 2000. Physics, Truman State University, Kirksville, MO. *Cum Laude.*

Experience

2010-present Assistant Professor at Syracuse University,
 Associate Scientist at Fermi National Accelerator Laboratory
2006-2010 Postdoctoral Research Associate at Yale University
2001-2006 Graduate Research Assistant at the University of Michigan Department of Physics
2000-2001 High school physics teacher at St. Louis Priory School in St. Louis, MO
1996-2000 Undergraduate at Truman State University

Collaboration/Experiment Participation

Long Baseline to DUSEL member, 2008-present
MicroBooNE (E974) member, 2007-present
ArgoNeuT (T962) member, 2006-present
 Spokesperson, Oct. 2009 - present
CDF member, 2002-2006

Talks

7th International Design Study for Neutrino Factory - Plenary Meeting
Liquid Argon Technology for Neutrinos
October 17, 2011 Arlington, VA

DOE Institutional Review of Fermilab
Future Neutrino Physics
June 7, 2011 Batavia, IL

Fermilab Short Baseline Neutrino Workshop
The ArgoNeuT Project
May 12, 2011 Batavia, IL

DOE Office of Science Review of Options for Underground Science
Reconstruction and Simulation for LArTPCs
April 14, 2011 Palo Alto, CA

Recontres de Moriond Electroweak 2011
Neutrino Data Analysis with the ArgoNeuT Project
March 19, 2011 La Thuile, Italy

11th International Workshop on Next Generation Nucleon Decay and Neutrino Detectors (NNN10)
Liquid Argon Projects in the U.S.
December 15, 2010 Toyama, Japan

University of Rochester Seminar
Frozen in Time: Neutrino Physics with Liquid Argon Detectors
October 12, 2010 Rochester, NY

Fermilab Workshop on Detector R&D
ArgoNeuT: University/Lab R&D Experience
October 7, 2010 Batavia, IL

XXIV International Conference on Neutrino Physics and Astrophysics (Neutrino 2010)
Status of ArgoNeuT and MicroBooNE Experiments
Proton Decay Searches with a Liquid Argon Detector at DUSEL (Poster)
June, 2010 Athens, Greece

University of Houston Colloquium
Frozen in Time: Neutrino Physics with Liquid Argon Detectors
April 6, 2010 Syracuse, NY

Syracuse University Colloquium
Frozen in Time: Neutrino Physics with Liquid Argon Detectors
March 29, 2010 Syracuse, NY

University of Virginia Colloquium
Entering an Era of Precision Neutrino Physics
February 23, 2010 Charlottesville, VA

Indiana University Seminar
Development of Liquid Argon Time Projection Chambers in the U.S.
January 25, 2010 Bloomington, IN

Rutgers University Seminar
Development of Liquid Argon Time Projection Chambers in the U.S.
November 17, 2009 Piscataway, NJ

California Institute of Technology Seminar
Development of Liquid Argon Time Projection Chambers in the U.S.
October 5, 2009 Pasadena, CA

University of Michigan Seminar
Development of Liquid Argon Time Projection Chambers in the U.S.
September 28, 2009 Ann Arbor, MI

SLAC National Accelerator Laboratory Seminar
Development of Liquid Argon Time Projection Chambers in the U.S.
September 22, 2009 Palo Alto, CA

22nd International Workshop on Weak Interactions and Neutrinos (WIN'09)
Future Long Baseline Experiments: Options for U.S.
September 16, 2009 Perugia, Italy

2009 Meeting of the Division of Particles and Fields of the
American Physical Society (DPF 2009)
ArgoNeuT: A Liquid Argon Time Projection Chamber Test in the NuMI Beamline
July 30, 2009 Detroit, MI

Sixth International Workshop on Neutrino-Nucleus Interactions in the
Few-GeV Region (NUINT 2009)
MicroBooNE: A New Liquid Argon Time Projection Chamber Experiment
May 20, 2009 Sitges, Spain

45th Karpacz Winter School in Theoretical Physics
Liquid Argon Time Projection Chambers: U.S. R&D and Physics Program
February 11, 2009 Łądek-Zdrój, Poland

Institut de Physique Nucléaire Seminar
Liquid Argon Time Projection Chambers: U.S. R&D and Physics Program
September 15, 2008 Orsay, France

2008 International Workshop on Next Nucleon Decay and Neutrino Detectors (NNN08)
Liquid Argon Time Projection Chambers: U.S. R&D
September 12, 2008 Paris, France

DUSEL - Progress Toward the Initial Suite of Experiments
April 23-26, 2008 Lead, South Dakota

2008 April Meeting of the American Physical Society
Liquid Argon Time Projection Chambers: R&D Towards Kiloton Class Detectors
April 14, 2008 St. Louis, MO

Project X: 1st Workshop on Physics
Liquid Argon Time Projection Chambers and Project X
November 17, 2007 Batavia, IL

CRYODET2: A Large Liquid Argon Detector for Future Particle Physics
June 14-15, 2007 Gran Sasso, Italy

Workshop on Physics and Applications of the GLoBES Software
January 24-26, 2007 Heidelberg, Germany

2006 April Meeting of the American Physical Society
Measurement of the Cross-Section of $W^\pm + b\bar{b}$ at CDF
April, 2006 Dallas, TX

2005 April Meeting of the American Physical Society
Measurement of the Ratio of $\frac{\sigma_{W^\pm+b\bar{b}}}{\sigma_{W^\pm+jets}}$ in $W^\pm+1,2$ Jet Events at CDF
April 18, 2005 Tampa, FL

2004 Coordinated Theoretical-Experimental Project Summer School on QCD (CTEQ 2004)
June 2004, Madison, WI

Publications and Proceedings

“The ArgoNeuT Detector in the NuMI Low-Energy Beam Line at Fermilab”
C. Anderson *et al.*, In preparation for submission to Journal of Instrumentation (JINST). 2012.

“Analysis of a Large Sample of Neutrino-induced Muons with the ArgoNeuT Detector.”
C. Anderson *et al.*, In preparation for submission to Journal of Instrumentation (JINST). 2012.

“First Measurements of Inclusive Muon Neutrino Charged Current Differential Cross Sections on Argon”, C. Anderson *et al.*, Accepted by PRL (2012), e-Print Archive: arXiv:1111.0103

“Liquid Argon Neutrino Detector Development at Fermilab”
Proceedings to the XXIV International Conference on Neutrino Physics and Astrophysics
M. Soderberg, To be published in Nuclear Physics B - Proceedings Supplements (NUPHBP)

“Liquid-Argon Time Projection Chambers in the U.S.”
Proceedings to the 45th Winter School in Theoretical Physics in Łądek-Zdrój, Poland
M. Soderberg, e-Print Archive: arXiv:0910.3553

“MicroBooNE: A New Liquid Argon Time Projection Chamber Experiment”
Proceedings to the 6th International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region (NuINT09)
M. Soderberg, e-Print Archive: arXiv:0910.3497

“ArgoNeuT: A Liquid Argon Time Projection Chamber Test in the NuMI Beamline”
Proceedings for DPF-2009, Detroit, MI
M. Soderberg, e-Print Archive: arXiv:0910.3433

“Measurement of the b-jet Cross Section in Events with a W Boson in p-pbar Collisions at $\sqrt{s}=1.96\text{TeV}$ ”
T. Aaltonen, *et al.*, Phys. Rev. Lett. 104.131801 (2010), e-Print Archive: arXiv:0909.1505

“A Regenerable Filter for Liquid Argon Purification”

A. Curioni *et al.*, *Nucl.Instrum.Meth.* **A605:306-311** 2009. e-Print Archive: arXiv:0903.2066

“The Yale liquid argon time projection chamber”

Alessandro Curioni, Bonnie T. Fleming, Mitchell Soderberg, e-Print Archive: arXiv:0804.0415

“The Yale Lar TPC”

Proceedings to the 5th International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region (NuINT07), AIPConf.Proc.967:76-79,2007

Alessandro Curioni, Bonnie T. Fleming, Mitchell Soderberg, e-Print Archive: arXiv:0708.0875

“Measurement of $t\bar{t}$ production cross section in $p\bar{p}$ collisions at $\sqrt{s}=1.96$ TeV using lepton + jet events with secondary vertex b -tagging”, D. Acosta *et al.*, *Phys. Rev. D* **71**, 052003 (2005)

Funding

P.I. on 3-year NSF grant entitled, “Neutrino Physics with Liquid Argon Detectors”. Spring 2012.

Other Activities

Served as co-convener of the Neutrino Detectors track at the 2011 Technology and Instrumentation in Particle Physics (TIPP) conference, held June 9-14, 2011 in Chicago, IL. Helped recruit and organize ~45 talks, and have subsequently been in charge of the editing of the proceedings for this part of the conference.

Co-PI of the Syracuse HEP group activity in the QuarkNet program, which aims to expose local high-school physics teachers to modern research in the field of particle physics.

Awards

Regents Fellowship, University of Michigan, 2001-2003

Departmental Honors in Physics, Truman State University, May 2000

Outstanding Senior in Physics, Truman State University, May 2000

Elected to Sigma Pi Sigma, the National Physics Honor Society, 1999

Membership

Fermilab Users’ Executive Committee, 2007-2009

Fermilab Users’ Executive Committee Secretary, 2008-2009

American Physical Society, 1999-Present

Society of Physics Student President, Truman State University, 1999-2000

Society of Physics Student Treasurer, Truman State University, 1998-1999