Matthew C. Feickert

Curriculum Vitae, March 2017

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Education

August 2014 to 2019 (expected): **Southern Methodist University**, Dallas, TX
Ph.D., Physics
Thesis Area: Experimental high energy physics

August 2014 to December 2016: **Southern Methodist University**, Dallas, TX
M.S., Physics

August 2012 to December 2013: **University of Virginia**, Charlottesville, VA
M.A., Physics

August 2007 to May 2012: **University of Illinois at Urbana-Champaign**, Urbana, IL
B.S., Engineering Physics; Mathematics Minor

January 2009 to May 2009: **University College Cork**, Cork, Ireland
Study Abroad Spring Semester 2009

Research Interests

My research interests are in experimental high energy physics. My current research focuses on Higgs self interactions and measurement techniques for Higgs decaying to bottom quark pairs. In general, I am interested in searches for physics beyond the standard model using the Higgs as a discovery tool, measurements of the properties of the Higgs, applications of machine learning to physics, and the advancement of open source data analysis tools for the physics community.

Research Experience

January 2015 to present: **Graduate Research Assistant**, *High Energy Physics Group*
Advising Professor: Stephen J. Sekula, Department of Physics
Southern Methodist University, Dallas, TX
Study of Higgs self interactions and of the $HH \to (b\bar{b})\,(b\bar{b})$ decay channel

August 2012 to December 2013: **Graduate Research Assistant**, *High Energy Physics Group*
Advising Professor: Bob Hirosky, Department of Physics
University of Virginia, Charlottesville, VA
Analysis software development for single photon detection with gallium indium arsenide detectors

June 2009 to August 2012: **Undergraduate Research Assistant**, *High Energy Physics Group*
Advising Professor: Mark S. Neubauer, Department of Physics
University of Illinois at Urbana-Champaign, Urbana, IL
ATLAS hardware tracker for trigger upgrade (FTK);
Search for Higgs Boson using the $H \to WW \to \ell\nu qq$ decay channel

May 2010 to August 2010: **URA Visiting Scholar at Fermilab**, *CDF Experiment; Higgs to WW Group*
Fermilab Sponsor: Eric James, Fermi National Accelerator Laboratory
A search for WZ and WW resonances (including Higgs) in the $\ell\nu qq$ final state

Professional Activities and Service

August 2015 to August 2016:	**Graduate Student Assembly** Southern Methodist University *Physics Department Representative*
2009 to 2012: May 2011 to May 2012:	**Society of Physics Students UIUC Chapter** University of Illinois at Urbana-Champaign *President*
August 2007 to May 2012:	**Engineers Without Borders UIUC Chapter** University of Illinois at Urbana-Champaign

Teaching Experience

August 2014 to present:	**Graduate Teaching Assistant** Southern Methodist University, Department of Physics
January 2016 to May 2016:	*PHYS 3305 - Introduction to Modern Physics* *PHYS 1307 - General Physics I*
August 2015 to December 2015:	*PHYS 1303 - Introductory Mechanics*
January 2015 to May 2015:	*PHYS 1304 - Introductory Electricity and Magnetism*
August 2014 to December 2014:	*PHYS 1303 - Introductory Mechanics* *PHYS 1304 - Introductory Electricity and Magnetism* *PHYS 1307 - General Physics I*
August 2012 to December 2013:	**Graduate Teaching Assistant** University of Virginia, Department of Physics
August 2013 to December 2013:	*PHYS 2630 - Elementary Laboratory I* *Rated 4.51/5.00 by students*
January 2013 to May 2013:	*PHYS 1620 - Introductory Physics II* *Rated 4.51/5.00 by students*
August 2012 to December 2012:	*PHYS 2030 - Basic Physics Laboratory I* *Rated 4.18/5.00 by students*
August 2011 to May 2012:	**Undergraduate Teaching Assistant** University of Illinois at Urbana-Champaign, Department of Physics
January 2012 to May 2012:	*Two lab sections of PHYS 211 - University Physics: Mechanics* *Teachers Ranked as Excellent By Their Students* list
August 2011 to December 2011:	*Two lab sections of PHYS 211 - University Physics: Mechanics* *Teachers Ranked as Excellent By Their Students* list

Publications and Letters

Study of c-jet Tagging in the $H \to WW \to \ell\nu qq$ Decay Channel at the ATLAS Detector, Matthew Feickert, Undergraduate Senior Thesis, Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL (2011). Unpublished.

Invited Talks and Presentations

Matthew Feickert, "Study of c-jet Tagging in the $H \to WW \to \ell\nu qq$ Decay Channel at the ATLAS Detector," 5th Annual Campus Undergraduate Research Symposium, University of Illinois at Urbana-Champaign, Urbana, IL, April 11, 2012.

Matthew Feickert, "Study of c-jet Tagging in the $H \to WW \to \ell\nu qq$ Decay Channel at the ATLAS Detector," 11th Annual Undergraduate Research Symposium, Department of Physics, University of Illinois at Urbana-Champaign, Urbana, IL, January 27, 2012.

Matthew Feickert, "Neutrino Physics & Phenomena," Physics Society Talk on Neutrino Physics, Undergraduate Physics Society, University of Illinois at Urbana-Champaign, Urbana, IL, February 23, 2011.

Matthew Feickert, "The Tevatron's and LHC's Higgs Search," Physics Society Talk on High Energy Physics, Undergraduate Physics Society, University of Illinois at Urbana-Champaign, Urbana, IL, October 13, 2010.

Awards & Scholarships

2015	Outstanding Graduate Physics Teaching Assistant Award
2013	National Science Foundation Graduate Research Fellowship Program Honorable Mention
2012	Robert E. Hetrick Outstanding Senior Thesis Award
2011	University of Illinois College of Engineering Dean's List for academic excellence
2011	UIUC Undergraduate Research Colloquy Best Poster Award, 2nd Place
2011	Illinois General Assembly Legislative Scholarship
2010	Universities Research Association Visiting Scholar at Fermilab
2009	International Programs in Engineering International Engineering Fellowship
2007 to 2012	University of Illinois College of Engineering Calvin Barnes Niccolls Memorial Scholarship

Technical Skills

Languages and Frameworks	C++, Python, Mathematica, MPI, OpenMP, ROOT
OS and Environments	Linux (Scientific Linux, Ubuntu), Unix, Mac OS X
Other	LaTeX 2_ε (including beamer class), Vim, SQL

Outreach

February 27th, 2016	Physics Judge at Dallas Regional Science and Engineering Fair
July, 2015	Co-created with Kate Kahle the "CERN Scientists" Twitter outreach group
March 12th, 2015	University of Texas at Austin Geophysical Society LaTeX workshop lecturer
February 21st, 2015	Physics Judge at Dallas Regional Science and Engineering Fair
November 6th, 2014	SMU Society of Physics Students guest lecturer for LaTeX workshop
July 17th, 2012	*iFEX Summer Scholars* guest lecturer
September 2011 to May 2012	Student mentor to undergraduate physics majors
July 27th, 2011	*Discover Engineering* demonstrator
June 28th, 2011	*Illini Summer Physics Academy* guest lecturer
June 14th & June 15th, 2011	EnLiST Physics Summer Institute teaching assistant

Languages

Native speaker of English, working knowledge of German

2015 Smarter Every Day 134, Destin Sandlin;
Typeset Laplace pressure equation and constants at 3:26
2015 Smarter Every Day 130, Destin Sandlin;
Typeset circle packing number equation and constants at 1:28
2012 Advanced Solid State Physics (Second Edition), Dr. P. Phillips;
Assistant typesetter to Cambridge University Press Publishing