

# Peter B. Denton, Ph.D.

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## *Research Experience*

Graduate Student Research Program in Theoretical Physics with Stephen Parke at Fermilab, August 2015-August 2016.

DOE funded research assistant with Thomas J. Weiler at Vanderbilt University, Spring 2011-Fall 2015.

Research assistant with Sokrates Pantelides at Vanderbilt University, Summer-Fall 2010.

Lee Teng Internship with Tanaji Sen at Fermilab, Summer 2009.

Bonner Labs with Bill Llope at Rice University, Summer 2008.

## *Education*

Ph.D. Physics, Vanderbilt University, August 2016.

B.S. Physics, Rice University, May 2010.

B.A. Mathematics, Rice University, May 2010.

## *Physics Schools*

Erice International School of Subnuclear Physics (ISSP), June 2016.

Theoretical Advanced Study Institute in Elementary Particle Physics (TASI), Boulder CO, June 2014.

## *Honors and Awards*

The Giorgio Salvini diploma from the Erice International School of Subnuclear Physics, awarded June 2016.

PITT PACC travel award of \$300 to attend Pheno '16, awarded April 2016.

Vanderbilt Dissertation Enhancement Grant of \$2,000 to attend the Theoretical Advanced Study Institute: Amplitudes For Colliders in June 2014, awarded April 2014.

Subsidy of \$1,600 to attend the Theoretical Advanced Study Institute: Amplitudes For Colliders in June 2014, awarded April 2014.

Division of Particles & Fields travel grant of \$120 to the APS April 2013 meeting, awarded March 2013.

The Robert T. Lagemann Award of \$1,000 for highest academic achievement by a first-year graduate student, awarded April 2011.

“Topping-up” McMinn Fellowship of \$5,000 a year of five years, awarded March 2010.

### *Selected Research Topics*

Neutrino oscillations in matter with perturbation theory.

High energy astroparticle physics.

Neutrino anisotropy at the highest energies as seen by IceCube.

Cosmic ray anisotropy at the highest energies as seen through Pierre Auger Observatory, Telescope Array, and JEM-EUSO.

Beyond the standard model contribution to integral dispersion integrals for  $pp$  scattering at LHC energies.

The possibility of cosmic rays producing black holes in the atmosphere.

Matching Weinberg's Higgs portal to  $N_{\text{eff}}$  measurements.

### *Language Skills*

L<sup>A</sup>T<sub>E</sub>X, beamer, python, matplotlib, C++, ROOT, MATHEMATICA, MATLAB, FORTRAN, gnuplot, java, html, and javascript.

### *Teaching*

Teaching assistant at Vanderbilt University, Fall 2010-Spring 2015.

Teaching assistant for the Physics Department at Rice University, Fall 2009.

Writing consultant at Rice University, 2007-2010.

Tutoring English, math, and physics at middle school, high school, undergraduate, and graduate school levels, 2005-2015.

### *Professional Societies*

Member, American Physical Society