

Robert Craig Group

EXPERIENCE IN TEACHING AND OUTREACH

Far too often the importance of teaching and public outreach is overlooked. I plan to make significant contributions to my research field over the course of my career; however, I hope that these will pale in comparison to the accomplishments of the students I influence and the people I introduce to our field through outreach efforts. As a researcher, I know that my direct contributions are limited by my lifespan, but if I can pass along my interest in the topic and my will to help a student discover the excitement of science, then I know my contributions to physics and to society will be far greater. In my experience, the most important thing a scientist can do as a role model is to donate some of their time to another interested mind. Often, this effort results in a greater understanding for both parties! In my short career, I have taken advantage of many opportunities to stimulate interest in our field through teaching and public outreach. Although it is not possible to quantify the long term impact that these efforts have, I am confident that they will be significant. I believe the triumphs of HEP are some of the most impressive in physics, and I always enjoy the experience of trying to share my excitement with others.

My father was an English professor at a small college campus in South Carolina. As a result, I have always valued teaching as one of the most noble professions. Through my teaching responsibilities over the last 10+ years at three different college campuses I have had the chance to lecture on multiple topics of physics and I have developed confidence in my classroom presence. In addition, I have further developed my teaching skills through many years of private tutoring. Below I summarize my most recent efforts at outreach and my teaching experience.

TEACHING EXPERIENCE

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| Assistant Professor
Department of Physics, University of Virginia
Lectured and managed course for approximately 200 pre-med students. The course covered the topics of electricity and magnetism, geometrical optics, and modern physics. | Spring 2011, 2012 |
| Teaching Workshop
College Park, MD
Attended three-day new physics and astronomy faculty teaching workshop held by American Association of Physics Teachers. | Summer 2011 |
| Substitute Lecturer
Department of Physics, University of Florida
Lectured for calculus based Electricity and Magnetism course in large lecture hall at the request of instructor. | Summer 2005 |
| Teaching Assistant
Department of Physics, University of Florida
Led discussion sections, held office hours, and graded exams for introductory physics II. | 08/2003 – 05/2004 |
| Private Tutor
Department of Physics, University of Florida | 08/2003 – 05/2005 |
| Teaching Assistant
Department of Physics, Florida State University
Taught lab sessions, held office hours, and graded lab reports for introductory Astronomy class. | 08/1999 – 05/2000 |
| Private Tutor
Department of Physics, Florida State University | 08/1999 – 05/2000 |

Teaching Assistant

Erskine College

Assisted students in setup and performance of modern physics lab.

08/1998 – 05/1999

GENERAL OUTREACH EXPERIENCE

Tours of the CDF Experiment:

- REU summer students, Aug. 5, 2009
- Fermilab Open House, Jan. 17, 2009
- Linear Collider Accelerator School students October 24, 2008
- Hadron Collider Summer School students Aug 16, 2008
- Tour of CDF for local high school students May 21, 2008
- Private tour of Fermilab for small group of college students from Texas, March 19 2007
- Tour for Congressman Kirk and group of 7th graders, Feb. 17, 2007
- Fermilab Open House, Feb. 11, 2007

Blogger for the Mu2e Experiment on Quantum Diaries (Jan. 2011 - current):

- Every 8 weeks I write a short article about some aspect of the Mu2e experiment.
- <http://www.quantumdiaries.org/author/fermilab/>

Poster Session Judge: Judge of student posters for the 2011 UVa graduate student poster competition.

Editor for “Result of the Week” in Fermi Today (Nov, 2008 - current) : For about two years I served as the editor for bi-weekly articles featuring exciting new results from the CDF experiment published in the online newsletter “Fermi Today”. I select the topic to be featured and then work closely with the analysis authors and the editors of Fermi Today to insure that the article is interesting and can be understood by the non-scientist community at Fermilab.

2008 Quadrennial Congress of Sigma Pi Sigma (Nov. 7,2008) :

- Volunteered for “breakfast with a scientist”
- Gave tour of the CDF experiment

Ask a Scientist: Available to answer questions from the public at Wilson Hall:

- Feb. 21, 2010 , Dec. 6, 2009 , March 6, 2009 , Nov. 2, 2008 , May 6, 2007

Saturday Morning Physics: Tours of Fermilab facilities for local high school students:

- MIPP experiment on Jan. 23, 2010
- SciDet on Nov. 21, 2009
- DØ experiment on Jan. 24, 2009
- SciDet on Nov. 12, 2007
- DØ experiment on April 14, 2007
- Linear accelerator facilities Jan. 13, 2007

Poster Session Judge: Judge of student posters for the 2008 Fermilab User’s meeting on June 4th, 2008.

Workshop for Illinois Math and Science Academy: Tour of FNAL Linac, 15th floor, and LHC@FNAL for 80 math teachers, June 16, 2007

Science Fair Judge: Judged science projects of local middle school students, Naqua Valley High School, January 27, 2007

POLITICAL OUTREACH EXPERIENCE

Young Scientist Luncheons:

- Lunch with Steve Koonin, DOE Under Secretary for Science
Fermilab User’s meeting 2010
- Lunch with Daniel Poneman, DOE Deputy Secretary and William Brinkman, DOE director
of the Office of Science