

Valerie Plaus

Franciscan University of Steubenville
Steubenville, OH 43952
Work: (740) 284-7032
plausv@franciscan.edu

EDUCATION

- Ph.D. Physics: Theoretical Particle Physics** **January 2013**
University of Wisconsin-Madison, Madison, WI
Dissertation: *Doublet and Singlet Extensions of the Minimally Supersymmetric Standard Model and Charged Higgs Discoveries*
Advisor: Associate Professor Lisa Everett
- Masters of Science, Physics** **August 2010**
University of Wisconsin-Madison, Madison, WI
- Bachelor of Science: Physics** **January 2007**
University of Guelph, Ontario, Canada
Co-operative Education Option, With Distinction in Physics.

TEACHING EXPERIENCE

- Assistant Professor, Physics** Franciscan University of Steubenville **2018-present**
(University Physics I: Lecture and Lab) Taught lectures, laboratory sessions and recitation sessions using a calculus-based approach to kinematics, forces, energy, torque, oscillations, and waves for physical science majors.
(University Physics II: Lecture and Lab) Taught lectures, laboratory sessions and recitation sessions using a calculus-based approach to thermodynamics, optics, and introductory quantum mechanics for physical science majors.
(University Physics III: Lecture and Lab) Taught lectures, laboratory sessions and recitation sessions using a calculus-based approach to electricity and magnetism for physical science majors.
- Visiting Professor, Physics** Wittenberg University **2015-2018**
(Mechanics and Waves) Taught lectures and laboratory sessions for algebra based introductory undergraduate physics courses for majors and non-majors. Supplemented algebraic material with calculus based explanations.
(Topics in Classical and Modern Physics) Taught lectures and laboratory sessions for an algebra based undergraduate physics course for majors in other sciences.
(Advanced Mechanics) Taught lectures covering a wide variety of physical phenomena including air resistance, central forces, rigid body motion, and normal modes.
(Computational Physics) Taught lectures and computational methods addressing mechanical and electromagnetic situations, including chaos and many body problems.
(Topics: Fluid Mechanics) Taught a half-semester class addressing static and moving fluids under ideal and viscous conditions.
(Topics: Particle Physics) Taught an overview of nuclear and elementary particle interactions, including Feynman diagrams and Higgs theory.
(Astronomy) Taught lectures and supplementary observing sessions covering the properties and formation of constellations, planets, stars, and galaxies.

<p>Department Chair, Physical Sciences and Mathematics St. Gregory's University Supervised and completed HLC reports for faculty and department. Coordinated course offerings for the implementation of nursing degrees.</p>	<p>2013-2015</p>
<p>Assistant Professor, Physical Sciences and Mathematics St. Gregory's University (College and University Physics I and II) Taught lectures and laboratory sessions for algebra and calculus based introductory undergraduate physics courses for non-majors. Purchased equipment for and implemented laboratory exercises to suit course material. (Physics in the Arts) Taught lectures for a specialized algebra based introductory undergraduate physics course for non-majors. (Calculus I and II) Taught lectures and laboratory sessions for introductory undergraduate calculus courses for majors and non-majors. Implemented flipped classroom techniques for a concurrent class by providing pre-recorded lectures. (History and Philosophy of Mathematics) Guided independent study class discussing the development of thought surrounding mathematics throughout history. (Mathematics for Elementary Educators I-III) Provided a deeper understanding of numbers, basic operations, geometry, and an introduction to simple statistics. (College Algebra) Taught continuing-education students in an accelerated format using traditional lecture and homework formats as well as online systems. (First Year Experience I and II) Facilitated discussion of the purpose of university and advised students about academic resources, selecting a major, and career planning. (Great Books II: The Christian and Medieval Era) Facilitated discussion of selected works and guided students' writing process.</p>	<p>2012-2015</p>
<p>Laboratory and Discussion Instructor, A Modern Introduction to Physics: UW-Madison (Phys 247 and 248) Taught laboratory and discussion sessions for calculus based, advanced introductory undergraduate physics course for approximately 65 physics majors. Implemented and tailored laboratory exercises to suit course material.</p>	<p>2010-2011</p>
<p>Laboratory and Discussion Instructor, General Physics II: UW-Madison (Phys 208) Taught discussion and laboratory sessions for second-semester calculus-based introductory physics for 2 sections of 24 students per section of science majors. Used "<i>context rich</i>" group problem solving.</p>	<p>2010</p>
<p>Laboratory and Discussion Instructor, General Physics I: UW-Madison (Phys 207) Taught discussion and laboratory sessions for first-semester calculus-based introductory physics for 2 sections of 24 students per section of science majors. Used "<i>context rich</i>" group problem solving.</p>	<p>2009</p>
<p>Laboratory Instructor, Physics in the Arts: UW-Madison (Phys 109) Taught laboratory sessions for algebra based introductory physics for 4 sections of approximately 16 non-science majors.</p>	<p>2008</p>
<p>Laboratory and Discussion Instructor, General Physics II: UW-Madison (Phys 202) Taught discussion and laboratory sessions for first-semester calculus-based introductory physics for 2 sections of 24 students per section of engineering majors</p>	<p>2008</p>
<p>Laboratory and Discussion Instructor, General Physics I: UW-Madison (Phys 207) Taught discussion and laboratory sessions for first-semester calculus-based introductory physics for 2 sections of 24 students per section of science majors. Used "<i>context rich</i>" group problem solving.</p>	<p>2007</p>

ACADEMIC HONORS, FELLOWSHIPS, AND AWARDS

Joseph R Dillinger Award for Teaching Excellence	Spring 2011
2011 Elizabeth Hirschfelder Graduate Women Award	Spring 2011
Innovation in Teaching Award	Fall 2010
Best Teaching Assistant Award	Spring 2009
<i>Excellent</i> TA ratings (highest possible) for all seven semesters of teaching	2007-2011
Van Vleck Fellowship	2007
National Science and Engineering Research Council - Undergraduate Student Research Award	Fall 2004

RESEARCH EXPERIENCE AND SERVICE

Research Assistant: UW-Madison Actively involved in phenomenology and high energy physics research for fulfillment of Ph. D.	2008-2012
Undergraduate Research Assistant: Sudbury Neutrino Observatory Developed and implemented methods for extracting ^{222}Rn from the atmosphere for collection and injection into the detector for background calibration.	2006
Undergraduate Research Assistant: Sudbury Neutrino Observatory Developed and installed a cover gas cooling apparatus to reduce introduction of atmospheric gases to the detector by convection. Implemented data collection from previously dormant temperature detectors within the SNO cavity.	2005
Undergraduate Research Assistant: Gemite Concrete Company Developed both additive and surfactant water sealants for industrial purposes. Implemented new methods of testing the effectiveness of new sealants.	2004

International Conferences Attended:

Phenomenology Symposium 2017, Pittsburgh, PA. May 2017.
Phenomenology Symposium 2016, Pittsburgh, PA. May 2016.
Supersymmetry 2011, Chicago, IL. August 2011.
Pre-SUSY 2011, University of Chicago, Chicago, IL. August 2011.
String Phenomenology 2011, University of Wisconsin-Madison, Madison, WI. August 2011.
Women in Physics Canada, Perimeter Institute for Theoretical Physics, Waterloo, ON. July 2011.
Phenomenology Symposium 2011, University of Wisconsin-Madison, Madison, WI. May 2011.
Phenomenology Symposium 2010, University of Wisconsin-Madison, Madison, WI. May 2010.
Phenomenology Symposium 2009, University of Wisconsin-Madison, Madison, WI. May 2009.
Cosmo 2008, University of Wisconsin-Madison, Madison, WI. August 2008.
Sudbury Neutrino Observatory Collaboration Meeting, SNO, Lively, ON. August 2006.

PRESENTATIONS AND TALKS

“Higgs Discovery and Supersymmetry,” Colloquium Talk St. Gregory’s University, Shawnee, OK.	November 2014
“A Viable Four Higgs Doublet Model,” Phenomenology Symposium 2011 University of Wisconsin-Madison, Madison, Wi.	May 2011
“Multi-Higgs Doublet Extensions to the MSSM,” Phenomenology Symposium 2010, University of Wisconsin-Madison, Madison, Wi.	May 2010
“Radon Extraction and Injection for the ^{222}Rn Spike,” Sudbury Neutrino Observatory Collaboration Meeting 2006, Sudbury Neutrino Observatory, Lively, Ontario	May 2009

PUBLICATIONS

Note: It is common in Theoretical High Energy Physics research papers to list authors alphabetically, so the order of authorship does not correspond to the level of involvement in research.

- D. Gerwinsky and V. Plaus “*Monte Carlo Methods for Analyzing Supersymmetric Extended Higgs Models*”
[in progress]