Humberto B. Gilmer

CONTACT INFORMATION

191 West Woodruff Avenue
Columbus, OH, 43210

mobile: (281)-796-4317
website: hbgilmer.github.io
e-mail: gilmer.30@osu.edu

RESEARCH INTERESTS

Particle physics, Physics beyond the Standard Model, Supersymmetry

EDUCATION

The Ohio State University, Columbus, OH, USA

Doctor of Philosophy, Physics **May 2017 – present**

- Advisor: Linda M. Carpenter

Master of Science, Physics **August 2014 – May 2017**

- APS Bridge Program Fellow
- Advisor: Linda M. Carpenter

Rice University, Houston, TX, USA

Bachelor of Science, Physics **August 2010 – May 2014**

- Advisor: M.D. Corcoran

HONORS AND AWARDS

The Ohio State University, Columbus, OH, USA

Graduate Student Award for Mentoring Excellence **April 2020**

College of Arts and Sciences

SELECTED PUBLICATIONS

Linda M. Carpenter, Humberto B. Gilmer, Junichiro Kawamura "New Bounds on Light Sneutrino Masses", arXiv:2007.10360

RESEARCH EXPERIENCE

The Ohio State University, Columbus, OH

Research assistant **May 2016 – present**

- Doctoral research in high energy particle physics, concentrating on model building for physics beyond the Standard Model
- Supervisor: Linda M. Carpenter

University of Chicago, Chicago, IL

Research assistant **June – August 2013**

- Physics/MRSEC REU, sponsored by the National Science Foundation
- Wrote program capable of extracting a gravitationally-lensed galaxy from a field; performed numerical analysis to determine illumination variances across different frequency filters.
- Supervisor: Michael D. Gladders

MD Anderson Cancer Center, Houston, TX

Research assistant, Department of Radiation Oncology **June – August 2012**

- Assisted in image analysis of irradiated films. Gained experience and knowledge regarding radiation processes and experimental procedure, as well as practice in use of MATLAB.
- Wrote MATLAB code to process data from Monte Carlo data simulation, involving data filtering and analysis, as well as understanding radiation of charged particles.
- Supervisors: Uwe Titt, Luis A. Perles

PROGRAMMING

Python, Mathematica, LaTeX, METAPOST, C/C++, MATLAB

Teaching

The Ohio State University, Columbus, OH

Tutor, Physics 7701,7401 **AU17–present**

Lead weekly 1.5 hour tutorial sessions for Bridge students and other graduate students for graduate-level introductory electrodynamics course; duties included developing and writing tutorial questions, fielding student questions and leading review sessions before exams.

Teaching assistant, Physics 1250, 1251 **AU15 – SP17, AU19**

Lead weekly 50 minute recitation and 2 hour lab sessions for two classes of 25 undergraduates; duties ranged from providing instruction of concepts and problem solving skills, to classroom management and grading. Concepts covered included Newtonian mechanics, energy conservation, fluid dynamics, thermodynamics, special relativity, lectrostatics, waves & optics, and basic quantum mechanics.

Conferences & Summer Schools

ICHEP **August 2020**

Virtual conference

CTEQ Summer School **July 2019**

University of Pittsburgh

Towards the Next Quantum Field Theory of Nature Summer School **July–August 2018**

Mainz Institute for Theoretical Physics

Phenomenology Symposium **May 2018, May 2019**

University of Pittsburgh

Prospects in Theoretical Physics – Particle Physics at the LHC and Beyond **July 2017**

IAS

TeVPA **August 2017**

The Ohio State University

Service & Other Activities

The Ohio State University, Columbus, OH

Polaris **May 2017 – present**

- Founding member of graduate-undergraduate student collaborative in Departments of Physics and Astronomy dedicated to improving retention of historically-underrepresented minorities in STEM
- Drafted extensive proposals for mentorship programming, including a year-long course and summer program

Graduate Studies Committee **August 2017 – August 2020**

- Served as one of three elected graduate student representatives.
- Provided student input on affairs pertaining to graduate education, including external review, curriculum review and the qualifying process.
- Involved with extensive restructuring of graduate education

Bridge Program Representative **Spring 2015 – present**

- Assisted in selection of incoming Bridge Fellows for the 2015-2016 and 2016-2017 academic years, involving attendance at regular meetings
- Provided guidance and housing for new incoming students to ease transition to graduate school life

Young Scholars' Program **August 2016, 2017, 2018**

- Provided intensive introductory physics instruction with 25 incoming freshmen from disadvantaged backgrounds in order to acclimate them to a college environment
- Developed brief lectures to demonstrate basic concepts in mechanics