Curriculum Vitae

Zachary Glassman

EDUCATION

Ph.D, Chemical Physics
University of Maryland, College Park, MD

Bachelor of Arts, Physics
Pomona College, Claremont, CA May 2014
Thesis - High Resolution Spectroscopy and Isotope Invariant Analysis of Diatomic Molecules
Department Distinction in Thesis

Bachelor of Arts, Mathematics
Pomona College, Claremont, CA May 2014
Thesis - Universal Metric Spaces and Applications to General Relativity

GPA: 3.72

Honors
Richard P Edumnds Physics Prize
Steven Chu Award for Best Undergraduate Research at California-Nevada APS 2013- runner up
Tileston Junior Physics Award
Pomona Scholar (3x)
Tileston Freshman Physics Award
National Merit Finalist

PUBLICATIONS

- "The hyperfine interaction in the odd isotope of ytterbium fluoride, ^{171}YbF"- *Journal of Molecular Spectroscopy*, Volume 300, Pages 7-11.
- Aksoy AG, Glassman Z., Kosheleva O., Kreinovich V. ,"From Urysohn's Universal Metric Space to a Universal Space-Time," *Mathematical Structures and Modeling*, Vol.2. No.28, 2013, pages 28-34.
- "The rotational spectra, isotope invariant spectral analysis, and Born-Oppenheimer breakdown of KF"- manuscript in preparation

PRESENTATIONS AND PROJECTS

- *YbF, BOB, and the eEDM-probing zero with diatomic molecules*-Talk given at 2013 Annual Meeting of the American Physical Society, California-Nevada Section in Sonoma,CA, October 2013.
- *An Introduction to LaTeX* - workshop given to Pomona College students regarding the basics of the LaTeX typesetting language, October 2013.
- *Universal Spaces of Metrics and General Relativity*-Talk given as part of Senior Seminar in Mathematics, November 2013.
- *Spectroscopy and Isotope Invariant Analysis of Diatomic Molecules*- 1 of 4 talks at colloquium on student research given at Pomona Department of Physics and Astronomy, September 2013.
- *Isotopic Invariant Analysis of YbF and KF*- Poster given at 2013 Summer Undergraduate Research Program poster session, September 2013.
- *Dunham invariant analysis of YbF*- poster given at the Fifteenth European Symposium on Gas Phase Electron Diffraction Conference in Frauenchiemsee, Germany, June 2013.
- *High Resolution Rotational Spectroscopy of Hyperfine Effects in YbF and RbF*- contributed as co-author to poster at the Atomic, Molecular, and Optical division of the German Physical Society in Hannover, Germany, March 2013.

- *High Resolution Rotational Spectroscopy of Zeeman & Hyperfine Effects in PbF & YbF* - Poster given at 2012 Division of Atomic, Molecular and Optical Physics conference in Anaheim, CA, June 2012.
- *Garduino Automated Gardening System*- Featured article on instructables.com for design and implementation of automated gardening system using arduino micro-controller. http://www.instructables.com/id/Garduino-Automated-Gardening-System/

RESEARCH EXPERIENCE

Research Intern June – Aug 2011
Department of Physics, Yale University, New Haven , CT
- Supervised by Dr. Sidney Cahn and Dr. Simon Mochrie
- Created physics lab module for Yale physics class on Brownian motion
- Used Matlab to interface equipment and perform statistical analysis

Research Assistant Jan 2012 – May 2014
Department of Physics and Astronomy, Pomona College, Claremont CA
- Research in High Resolution Spectroscopy of Diatomic Molecules
- Worked with advisor Prof. Richard Mawhorter at Pomona College
- Worked in lab of Prof. Timothy Steimle at Arizona State University
- Worked in lab of Dr. Jens-Uwe Grabow at Leibniz Universität Hannover

Research Assistant Sept 2013 – May 2014
Department of Mathematics, Pomona College, Claremont CA
- Research in functional analysis on Urysohn Universal Metric Space, including applications to concepts from General Relativity
- Worked with advisor Prof. Asuman Aksoy at Claremont McKenna College

Graduate Research Assistant June 2014 –
National Institutes of Standards and Technology (NIST), Gaithersburg MD

PROFESSIONAL EXPERIENCE

TA- Introductory Physics Sept 2011 – May 2013
Department of Physics and Astronomy, Pomona College, Claremont , CA
- In class TA for introductory Mechanics and E&M
- Taught proper lab technique and analysis skills
- Evaluated students on lab skills and results
- Graded lab reports

Physics Grader Sept 2012 – Dec 2013
Department of Physics and Astronomy, Pomona College, Claremont , CA
- Graded upper level Quantum Mechanics
- Graded and gave feedback on a two pass system for freshman potential physics majors

LaTeX Specialist and Quantitative Skills Center (QSC) Fellow Sept 2013 – May 2014
- As QSC fellow, mentored in both large and small group sessions
- LaTeXspecialist for Pomona Mathematics department

Tutor/Mentor 2008 –
- Tutored students in Knot Theory, Analysis, Algebra, Geometry, Calculus, Basic Math, Introductory Mechanics and Electricity and Magnetism
- Mentored mentally disabled student

COMPUTER SKILLS

Experienced in Python,C, CUDA, Matlab, Mathematica, LaTeX, HTML, CSS, Arduino, Word, Excel, Powerpoint, SPFIT/SPCAT(Molecular spectroscopy fitting/prediction programs)

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