

Adam Harvey

aharvey1@umbc.edu

July 28, 2017

EDUCATION

University of Maryland, Baltimore County (UMBC)

PhD in Applied Physics

Expected: May 2020

MS in Applied Physics

Conferred: May 2017

Lewis & Clark College (LC)

BA in Physics

Conferred: May 2013

BA in Mathematics

Conferred: May 2013

PROFESSIONAL AFFILIATIONS:

- American Physical Society (sub-affiliations: Division of Astrophysics, Forum on Education, Forum on Graduate Student Affairs, Topical Group in Plasma Astrophysics, Mid-Atlantic Section)

Special Positions Held:

- Vice President of the UMBC Graduate Student Association
- Chair of the UMBC Physics Graduate Student Association Student Seminar Series

SKILLS: C/C++, R, Fortran, Python, Perl, Git, Visual Basic Script, Visual Basic .NET, Mathematica, SQL, Bash, CMD, Power Shell, Android Studio and SDK, Windows Management Instrumentation, Dexter, Fermi Science Tools, HTML, CSS

OS: Windows, Mac OS, Linux, Android, iOS

Publishing and Design: LaTeX, Microsoft Office (Word, Excel, PowerPoint), Adobe Creative Cloud (Photoshop, Illustrator, InDesign)

Languages: Japanese

RESEARCH EXPERIENCE:

Researcher under PhD Advisor (February 2016-Present)

UMBC

Physics Dept.

- Worked on fitting of blazar spectral energy distributions using various methods, currently using a simulated annealing code in Fortran
- Wrote multiple programs (using Fortran, R, Perl, and Bash) to enable good visualization of likelihood function to assist in fitting

- Edited previously written statistical error analysis code to account for multiple common outlying cases
- Read and discussed with my advisor multiple literature reviews
- Independently read dozens of published papers in detail to better understand current ideas and models

Curved Motion Model Sole Researcher (August 2011-December 2011) **LC**
Physics Dept.

- Wrote a one-page proposal of the project for consideration by a physics faculty member
- Modeled a body moving around a curve as a function of curvature, implementing fluid dynamics and friction
- Analyzed results using Wolfram Mathematica to understand dependence of time-efficiency on radius of curvature, assuming no slipping of the body
- Reported methods and findings in a six-page paper and presented findings to Lewis & Clark College Physics Department in a half-hour long presentation

Spectrometer Independent Project (April 2011) **LC**
Physics Dept.

- Built a basic spectrometer on an optics table using a series of lenses and diffraction gratings feeding into a CCD
- Use spectrometer to create an image of the spectrum of unionized hydrogen
- Presented completed project using PowerPoint to a class of about twelve students and a professor and showed them the spectrometer and demonstrated its use
- Wrote a one-page paper describing my methods and results

Error in Taylor Series Researcher Under Professor (November 2010-December 2010) **LC**
Math Dept.

- Using Wolfram Mathematica, approximated the evolution of the error of a Taylor series as it changes with increasing order at which the series is truncated
- Implemented graphs of error as a function of order of truncation to aid in visualization of error evolution
- Reported methods and findings in a three-page paper

INDUSTRY PROJECTS:

Inventory Management System Co-Developer (August 2014-January 2015) **Vancouver Bolt & Supply**

- Developed a script written in VBScript meant to run on a dedicated machine to track inventory vended to customers by Vancouver Bolt & Supply, Inc.
- Worked with potential users of system to tailor development to their needs
- Integrated script to work with proprietary software used on an Android based tablet
- Developed a method to populate a database with information from the proprietary software
- Developed a method of security in use of software to ensure proper use of software and to reliably identify users

TEACHING EXPERIENCE:

Teaching Assistant (August 2015-Present)

UMBC
Physics Dept.

- Designed lab curriculum and policies for 1 introductory algebra-based physics lab
- Taught 2 introductory calculus-based physics discussion sections of 30 students each for 1 semester
- Taught 3 introductory algebra-based physics lab sections of 20 students each for 3 semesters and two summer section of 15 students
- Proctored and graded exams approximately monthly
- Ensured students followed principles of academic integrity
- Held office hours weekly, answering questions pertaining to my sections work and students work on Mastering Physics
- Graded homework weekly and maintained grades on Black Board

Physics Tutor (September 2011-May 2012)

LC
Student Support Services

- Tutored a physics student with a learning disability on an as requested basis
- Provided guidance to the student in academic matters as a peer mentor as asked of me by the student
- Flexibly scheduled tutoring sessions around the students athletics and academic schedule

Physics Help Desk Tutor (August 2010-December 2010)

LC
Physics Dept

- Assisted physics students with their homework and general physics questions on a weekly basis
- Led informal exam study sessions for introductory level students

- Conferred with faculty to determine how to best assist students in their learning

INDUSTRY EXPERIENCE:

Information Technology Help Desk Technician (May 2015-July 2015)

Pavelcomm

- Diagnosed and corrected technical issues for client organizations
- Processed repairs of client machines
- Supervised proper backup of client resources
- Worked with team members to diagnose and correct network issues

Information Technology Assistant (July 2014-January 2015)

Vancouver Bolt & Supply

- Planned and wrote multiple programs
- Searched for and identified flaws in network security
- Recovered data from failed storage
- Planned and implemented a new outside sales system (see industry projects)
- Worked with multiple databases
- Expanded physical network

Claims Analyst (June 2013-August 2013)

Epiq Systems

- Proficiently analyzed claims for class action lawsuits
- Verified validity of data provided
- Rectified errors in data
- Determined claimants' eligibility as class members
- Conducted research for large-scale projects

ADMINISTRATIVE EXPERIENCE:

Vice President (July 2017-Present)

UMBC
Graduate Student Association
(GSA)

- Advocated on behalf of graduate and professional students at UMBC.
- Collaborated to formulate a new system for GSA grants, analyzing historical data to inform this process.
- Budgeted for external collaborations with other institutions.

Committee Member (July 2017-Present)

UMBC Graduate School
Assistant Dean
Search Committee

- Reviewed about 25 applications to narrow down the candidate pool for interviews.
- Communicated concerns and desires of the UMBC GSA in regards to a new Assistant Dean.
- Collaborated with various deans and other administrative personnel in selecting a new Assistant Dean.

Chair of the PGSA Student Seminar Series (July 2017-Present)

UMBC
Physics Graduate Student Assoc.
(PGSA)

- Proposed and leaded creation of the Student Seminar Series, which is a seminar series designed to give graduate students the opportunity to both teach and learn new subjects outside of a formal course.
- Surveyed UMBC physics graduate students on what subjects they were interested in learning about.
- Recruited students to lead seminars on subjects in which they have expertise.

VOLUNTEER EXPERIENCE:

Treasury Committee Chair (February 2017-May 2017)

UMBC
Graduate Student Association

- Formed and chaired committee working on GSA budgetary and financial concerns
- Co-wrote new governing documents (constitution, bylaws, policies) for the GSA which were adopted by the GSA Senate
- Documented the goals and responsibilities of the Treasury Committee
- Proposed, collaboratively wrote, and presented various resolutions to the GSA Senate

Treasury Committee Member (November 2016-February 2017)

UMBC
Graduate Student Association

- Chaired committee advising the GSA Senate and GSA Executive Board on GSA research and travel grants
- Analyzed historical data on grants using R to gather to inform decisions
- Created visualizations of data on grants using R to communicate via a report written in LaTeX to the Senate and Executive Board positions held by the Grants Committee

Physics Department Senator (September 2016-July 2017)

UMBC
Graduate Student Association

- Represented the physics department and its interests in the GSA
- Attended GSA senate meetings on a monthly basis
- Served on the Grants Committee working on projects such as investigating the possibility of an emergency loan fund for international students whose stipend cannot be immediately disbursed due to visa processing

Advocate (August 2016-July 2017)

UMBC
*Relationship Violence
Prevention Advocates*

- Participated in training on outreach and advocacy on the subject of relationship violence prevention
- Assisted in the organization of an outreach event on campus
- Discussed issues related to power based relationships with other advocates

Management Team Leader (August 2010, August 2011)

LC
New Student Orientation

- Organized events for new college students to help facilitate transition to college life
- Oversaw delivery of new students possessions to their dorm rooms
- Cooperated with staff and other volunteers to run events

Student Director (July 2007-May 2009)

**Oregon Health and
Science University**
Science Ambassadors

- Created curricula and lesson plans for educating elementary school students
- Organized high school volunteers in mentoring and teaching elementary school students

- Organized presentations from university scientists to for both volunteers and students

Ambassador (October 2006-May 2007)

**Oregon Health and
Science University**
Science Ambassadors

- Mentored a fifth-grade student to communicate concepts in science and to enable them to learn about careers in science
- Participated in preparation for educational activities for elementary school students
- Helped with students absorption of information from various scientific presentations

Volunteer (September 2005-June 2007)

**Oregon Museum of
Science and Industry**
Physics Lab

- Demonstrated various physics experiments to patrons of the museum of all ages
- Supervised various independent hands-on activities available for all patrons
- Educated patrons on physical principles responsible for effects displayed in demonstration

CONFERENCES, MEETINGS, AND SEMINARS:

Attendee (May 21-31, 2017)

**São Paulo School of
Advanced Science on
High Energy and
Plasma Astrophysics
in the CTA Era**
São Paulo, Brazil

- Applied to attend the aforementioned school hosted at the Instituto de Astronomia, Geofísica e Ciências Atmosféricas (IAG), and was selected as one of 50 international students to attend, with all costs of attendance paid by the São Paulo Research Foundation (FAPESP).
- Attended lectures, hands-on activities, and visits to both the National Institute for Space Research (INPE) and the Laboratório Nacional de Luz Síncrotron (LNLS).
- Met researchers and students from across the globe, learned about each others' research, and discussed and exchanged ideas.

Attendee (October 14, 2016)

**Mid-Atlantic Radio-Loud
Active Galactic Nuclei
Meeting (MARLAM)**
Baltimore, Maryland

- Attended conference on active galactic nuclei organized by Johns Hopkins University (JHU), NASA Goddard Space Flight Center (GSFC), the Naval Research Laboratory (NRL), Space Telescope Science Institute (STScI), and the University of Maryland, Baltimore County (UMBC).