

Jeffrey Hafner

PHYSICIST & UNIX ENGINEER

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"Before you leave the house, look in the mirror and take one thing off."—Coco

Experience

Wilderness Guide and Camp Counselor

FLYING MOOSE LODGE

- Was responsible for taking boys, aged 8–16, on 10 day excursions throughout the state of Maine.

East Orland, ME

2005

Research Assistant

UNIVERSITY AT BUFFALO

- Produced three peer reviewed publications, and was chosen for one conference presentation.
- One publication was chosen as an editor's pick

Buffalo, NY

2008–2011

Postdoctoral

UNIVERSITY OF MARYLAND

- Implementation of Particle Mesh Ewald Electrostatics for Continuous Constant pH Molecular Dynamics in CHARMM.

Baltimore, MD

2012

Adjunct Physics Professor

TOWSON UNIVERSITY

- Teaching Light and Color, a non-major physics course

Towson, MD

2013–2014

Physics Teacher

BALTIMORE CITY PUBLIC SCHOOLS

- Teaching physics first at Mervo
- Utilized a unique assessment system that allowed infinite redos

Baltimore, MD

2014–2015

Physics Teacher

MASTERS SCHOOL

- Teaching 11th and AP Physics B Mechanics
- An example lesson plan and lab report template used
- Utilized a unique assessment system that allowed infinite redos

Dobbs Ferry, NY

2015–2016

Unix Linux Systems Engineer

IPSOFT INC

- Manage IT infrastructure of high profile clients.
- Create automation to resolve issues.
- Monitor client environments.

Manhattan, NY

2016–2018

Education

Andrews University

B.S./M.S. IN BIOPHYSICS AND MATHEMATICAL STUDIES

3.31 GPA

Berrien Springs, MI

Aug. 2001 – Aug. 2006

University at Buffalo

PH.D IN PHYSICS

3.50 GPA

Buffalo, NY

Aug. 2006 – Feb. 2012

Projects

NSF REU

PENN STATE UNIVERSITY

University Park, PA

Summer 2004

Implemented a monte carlo modeler in Matlab to make falsifiable predictions concerning kinesin processivity under William Hancock.

PHY447: Advanced Lab 2

ANDREWS UNIVERSITY

Berrien Springs, MI

Spring 2005

Validated predicted reverberation times based on blue prints of the Howard Performing arts center

PHY506: Computational Physics 2

UNIVERSITY AT BUFFALO

Buffalo, NY

Spring 2008

Implemented a cellular automata traffic modeler in Python to investigate phase transitions in traffic

PHY515: High Performance Computing 1

UNIVERSITY AT BUFFALO

Buffalo, NY

Fall 2008

Parallelized my dissertation utilizing ScaLAPACK.

PHY551: Grad Physics Laboratory 1

UNIVERSITY AT BUFFALO

Buffalo, NY

Fall 2007

- Created Josephson junctions for use in super conductive conditions
- Utilized a Scanning Tunneling Microscope to investigate surface electron structure

CSE536: Computational Biology

UNIVERSITY AT BUFFALO

Buffalo, NY

Fall 2011

Implemented a 2D Hydrophobic-Hydrophilic Protein folder utilizing an Ant Colony Optimization Algorithm in Python.

Doctoral Dissertation

UNIVERSITY AT BUFFALO

Buffalo, NY

2008–2011

- titled: *Validation and Refinement of Course Grained Protein Models*
- About a 100 pages of text, Over 5000 lines of C, and over 1000 lines of Python.
- Work was performed on the computing resources of UB Center for Computational Research

physicsAMC

PHYSICS TEACHER

PhysicsAMC

multiple locations

2014–2016

- A comprehensive physics exam bank that utilizes an lpeg parser for question selection.
- This project enabled me to use an infinite redo policy on all assessments, without punishment, which was an important motivation for this project, and created some of my favorite memories.
- this project utilizes \LaTeX , lua, lpeg, and tikz for graphics, and contains more than a 100,000 lines of code.
- sample-exam

Publications

2009	Approximate normal mode analysis based on vibrational subsystem analysis with high accuracy and efficiency , Journal of Chemical Physics	Hafner J. & Zheng W.
2010	Optimal modeling of atomic fluctuations in protein crystal structures for weak crystal contact interactions , Journal of Chemical Physics	Hafner J. & Zheng W.
2011	All-atom modeling of anisotropic atomic fluctuations in protein crystal structures , Journal of Chemical Physics	Hafner J. & Zheng W.

Awards and Certifications

2013–2014	Intramural Champion , University of Maryland	Baltimore, MD
2016	Red Hat Certified System Administrator , License 130-172-497	RHCSA
2016	Cisco Certified Entry Networking Technician , License CSC012981391	CCENT