

Matthew Klimuszka

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EDUCATION

2014 - 2015 **University of Nottingham** Nottingham, UK
Sustainable Energy Engineering M.Sc. expected 12/2015
Accredited by the Institution of Mechanical Engineers.
Achieved "Distinction" in taught classes.
Thesis grade pending

Relevant classes include: Conservation and Recycling of Materials, Energy Efficiency for Sustainability, Renewable Energy Technology 1 & 2, Sustainable Energy Futures, Wind Engineering and Energy, Economic Evaluation of Sustainable Energy, Energy Storage, Renewable Generation Technologies and Control, Technologies for the Hydrogen Transport Economy

2010 - 2014 **Franklin & Marshall College** Lancaster, PA
B.A. Physics Summa Cum Laude
Cumulative GPA: 3.95

Relevant classes include: Energy Issues, Environment & Human Values, Nuclear Weapons, Power, and Waste Disposal, Unconventional Petroleum, Understanding Public Policy, Public Policy Implementation, Visual Design for Scientists, Statistical & Thermal Physics, Optics, Electric & Magnetic Fields, Energy Band Alignment (Semiconductor Physics), Electronics, Experimental Methods-Physics, Analytical Mechanics, Math Methods of Physics

TEACHING AND WORK EXPERIENCE

Spring 2014 **Franklin & Marshall Earth and Environment Department**
Supervising Professor: Michael Kulik

- Organized teaching with local elementary school and updated soil sample collection methods as a teaching assistant for a 300 level class "Lead & Asthma."

Sept. 2011 - **Franklin & Marshall Physics Department**
May 2014

- Constructed discussion topics for class and tutored students in the 100 level course Energy Issues.
- Tutored students in introductory physics classes.
- Teaching assistant in introductory physics labs

July 2008 - **Wilkes-Barre General Hospital**
Jan. 2012 *Supervisor: Bill Podskoch*

- Transported patients and materials throughout the hospital.
- Recognized in the Wyoming valley Healthcare System newsletter as employee of the month (out of many thousand employees) for stellar quality of work while being highly involved in high school.

RESEARCH EXPERIENCE

Summer 2015 **Sasie Ltd. (Thesis Project)**

The Home of Renewable Energy in Nottingham

Supervisors: Jill Holland (Sasie), Arthur Williams (University of Nottingham)

- Created an Android app for sustainable technology reference guides and site surveys for solar panel installation.

Summer 2013 **Los Alamos National Laboratory**

Solid Earth Geophysics (EES - 17)

Mentor: Dr. Howard Patton

- Work was featured in Dr. Howard Patton's presentation at the 2013 Fall meeting of the American Geophysical Union. The presentation was titled "Testing Equivalent Elastodynamic Models for Explosion-Induced, Late-Time Rock Damage with Close-In Recordings of R_g Waves."
- Used known earth models to simulate seismograms produced from underground nuclear explosions at the former Soviet Balapan test site.
- Found agreement between M_{Rg} magnitude measurements of my synthetic data and published results based on recorded data. Also expanded from the published results to include phase characteristics of the data.
- Used recorded nuclear explosion data from the former Soviet Degelen test site to revise a published earth structure model and the locations of various tests while measuring the dispersion curves of the testing area.
- Used these dispersion curves to calculate the source spectra of the explosion source.
- Learned Seismic Analysis Code and Unix c-shell scripting in order to perform this analysis.

Summer 2012 **Franklin & Marshall College**

Physics Department

Supervisors: Professors Linda Fritz, Ken Krebs, and Ned Dixon

- Awarded an F&M Hackman Scholarship in order to participate in this project.
- Used a sol-gel based method to synthesize and spin coat titania thin films.
- Characterized the films through electrical measurements, scanning electron microscopy, and x-ray diffraction.
- Paired the films with bornite nanoparticles synthesized in the chemistry department by Professor Kate Plass to make heterojunctions in an effort to create a photovoltaic device.
- Responsible for independently learning to use the circuit simulation program LTspice to model solar cells with various electrical characteristics.
- Developed LabView programming skills in order to utilize additional lab equipment to extend the electrical measurement capabilities of the physics department.

POSITIONS OF RESPONSIBILITY

2014-2015 **Nottingham Quidditch Team**
Secretary, Coach

- Trained the team to earn joint-third at the 2015 European Quidditch Cup after finishing last in the first qualifying tournament of the year.

2013-2014 **F&M Faculty Committee on Academic Technology**
Student Representative

- Principal formal means of communication among faculty, students and administration on all matters of computing and media technologies in the academic program.
- Reviewed college policies relating to instructional technology including purchasing decisions and information security policies.

2010 - 2013 **Bonchek College House Supreme Court**
Chief Justice

- Settled disputes within Bonchek House, one of the five social groups every F&M student is placed in when they enroll.
- Ran elections for the college house.

2010 - 2014 **F&M Quidditch Team**
Founding Member, Design Chair, President, Tournament Director

- Attend practice three times per week for the entire academic year.
- Organized travel to multiple competitions per semester for a team of 15-20 players including regional championships and the world cup.
- Worked with F&M administration to host 4 - 7 team tournaments every semester.
- Provided all artwork for team crest, banners, fliers, and promotional t-shirts as design chair.

2010 - 2013 **Oriflamme Yearbook Staff**
Layout Editor, Copy Editor

- Used TaylorWorks publishing software to create full-color yearbooks for the Franklin & Marshall campus.
- Responsible for the book's overall layout.

2012 - 2014 **Dump 'N' Run**
Chief Executive

- Organized a charity event to collect used items from students moving out of dormitories and sell them in a flea market setting.
- Significantly reduced usable items being sent to landfills.
- Raised over \$1,100 each year for the Milagro House women's shelter.

AWARDS AND HONOR SOCIETIES

National Merit Scholar

Sigma Pi Sigma

Only Sophomore in my year at F&M to be inducted into the physics honor society.

Gray Scholar

F&M award for distinguished scholars and leaders who have faced hardship in their pasts. Four year scholarship.

Howard and Mary Patton Geophysical Fellowship

A \$3000 F&M award that made possible my research at LANL in summer 2013.

Franklin Innovation Challenge

Finalist in 2011 F&M business competition that involved writing a business plan for a proposed project and presenting the proposal to a panel of professors.

Black Pyramid Society

One of twenty class of 2014 members of F&M's most prestigious honor/leadership/character society.

University of Nottingham FUN America Scholar

Phi Beta Kappa Scholarship and Society

Michael Albert Lewis Memorial Prize in Physics

Yearly F&M award for the best student in introductory physics classes.

John Kershner Scholar in Physics and Astronomy

Awarded in sophomore, junior, and senior years for excellence in physics, only sophomore recipient of this award.

Frank Durrell Enck Memorial Prize in Physics

Senior award for special recognition in the F&M physics department.

Junto Society

Chosen by F&M administration to be one of ten class of 2014 members of this distinguished conversation society, modeled on Ben Franklin's group of the same name.

Marshall Scholar

Four year scholarship and \$3000 research funding at F&M.

University of Nottingham USA Masters Scholarship

STANDARDIZED TESTS

General GRE (2013)

Verbal Reasoning

Scaled Score	Percentile
168	98

Quantitative Reasoning

Scaled Score	Percentile
167	95

Analytical Writing

Score	Percentile
4.5	78

Physics GRE (2013) Scaled Score - 780; Percentile - 69

ADDITIONAL INFORMATION

IT Skills

Experienced in Seismic Analysis Code, Wolfram Mathematica, UNIX, LabView, LaTeX, C++, Java, Android Studio, and various graphic design and office programs. Familiar with LTSpice, Python, Matlab, C-shell, SQL, and RETScreen.

Languages

English (native) and German (Three semesters, 4.0 GPA, not used since)

Misc. Associations

Zeta Beta Tau fraternity. After years of recolonization work at F&M, first Alpha Tau class in over 20 years