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Education

- **University of North Carolina at Greensboro** Greensboro, NC
  B.S. Physics *2012-2016*
  - Graduated summa cum laude with Minors in Chemistry and Mathematics

Research and Work Experience

- **UNCG Department of Chemistry and Biochemistry** Greensboro, NC
  Undergraduate Researcher - Physical Chemistry *January 2014 - December 2016*
  - Programmed an Arduino microcontroller for solar tracking and continuous adjustment of a linear Fresnel reflector with a solar vacuum tube as an absorber. Also designed certain 3-D printed components that held the tube and mirrors. This was presented as a poster at the Appalachian State Energy Summit in 2015.
  - Managed the operation of laser-induced photodissociation experiments involving ozone and subsequent reaction with carbon tetrachloride to create chlorine monoxide- a reaction involved in the destruction of the ozone layer. By probing the resulting vibrational states of the chlorine monoxide via microwave spectroscopy, the reaction mechanisms could be determined.
  - Programmed lua scripts in SIMION for the simulation of molecular trajectories in a time-varying electric field in order to test the feasibility of a molecular trap/guide design. Analysis of resulting data was done using Mathematica to acquire percent of molecules captured and translational temperature of the captured molecular beam. I also wrote a preliminary paper on the work which should be finished and published after the actual guide is made and tested.
- **UNCG Department of Physics and Astronomy** Greensboro, NC
  Undergraduate Teaching Assistant - General Physics w/ Calculus I&II January 2016 - December 2016
  - Aided the in-class instruction of an advanced general physics undergraduate class of 35 students. The focus of the two courses were classical mechanics and electromagnetism with the class meeting 3 times a week for 2 hour-long class periods. In class, my main duties were to guide students in group-based problem solving activities and to administer hands-on lab activities. Chief among these was a radio lab in which students created an AM radio using only a handful of components.
  - Outside of class, I attended meetings with the main instructor and team to discuss progress of the class and plan for upcoming labs and classwork. I was also responsible for grading homework assignments and lab reports. Periodically we would hold additional help sessions outside of class for students to address specific questions with TA's.

Additional skills

- Outside of class I have spent a lot of time learning various topics in programming. Some of my personal projects are on my github and website. These include:
  - LSolve- a simple program that solves Laplace's equation for electric potentials in 2-D systems. For this I used C for the actual calculation and python to create a user interface and graph the results.
  - Löve-Games- A collection of simple games and demonstrations of various physics using the Löve which uses the Lua scripting language.

- tegrubbs.me- My personal website which resides on Ubuntu linux server that I administer. This is a small website which contains links to my various accounts and a few of my Löve games converted to javascript.

Awards

- STAMPS Scholarship 2014 and 2015 - An NSF funded scholarship awarded to a number of high-performing STEM students
- Piedmont Society for Coating Technology Scholarship 2014 and 2015 - An award given annualy to two top chemistry students in the NC piedmont area.
- Barnes & Noble Fund For Excellence 2013