Tyler Samuels

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Education:

The George Washington University, Washington, DC
Bachelor of Arts in Physics and Minor in Electrical Engineering May 2018

Relevant Coursework:

Ordinary Differential Equations, Partial Differential Equations, Linear Algebra, Single Variable Calculus 1 and 2, and Multivariable Calculus

Technical Skills:

Mathematica, Microsoft Office Excel, Microsoft Word
Completed tax school with Tax Plus in Hempstead, NY March 2020

Research Experience:

IUSL Summer Photonics Training Program: June 2018-August 2018

- Learned how to handle optics materials and use various photonics machinery
- Gained insight into physical optics concepts and knowledge of light phenomenon
- Engaged in tutorials about absorption and fluorescence spectroscopy, Raman spectroscopy, streak camera technology and photodetectors.
- Managed hippocampus and cortex brain tissues to be used for experiments
- Completed an experiment about the Transmission of 7 Femtosecond ultrashort pulse laser through brain tissues of different thickness

Project Name: Phase Singularities in Twisted Light Interference Patterns January 2018-May 2018

- Created Mathematica codes to generate Bessel light beams to examine their phase singularities. In addition, I explored how these Bessel beams could be used for biomedical applications and microscopy such as light-sheet fluorescence microscopy.

Project Name: Calculating the Mass of Black Holes via Hydrogen Spectra Emission November 2016

- Created excel spreadsheets and implemented Mathematica codes in research project with physics graduate students in order investigate the significance of hydrogen spectra in black hole galaxies which helped us calculate the mass of black holes

Publications:

Mazhar, S. F. B., Meyer, H. J., Samuels, T., Sharonov, M., Shi, L., & Alfano, R. R. (2020). Explanation of the competition between O-and E-wave induced stimulated Raman and supercontinuum in calcite under ultrafast laser excitation. *Applied Optics*, *59*(17), 5252-5257.

Work Experience:

Whole Foods in Westbury, NY
Amazon Shopper November 2020-Present

- Fulfilled grocery orders for customers
- Packed and staged over thousands of items in designated areas
- Transported orders to customers' cars in parking lot

Mathnasium in Levittown, NY
Math Tutor November 2019-March 2020

- Assisted students with homework assignments and their required work material
- Taught students ranging from 2nd Grade-10th Grade
- Instructed students on topics ranging from Elementary School Math to Algebra 2 and Geometry.
- Tutored 5-6 students per day.

Institute for Ultrafast Spectroscopy and Lasers, City College of New York, Harlem NY
Research Assistant October 2018-October 2019

- Engaged in hands-on work with a 7 Femtosecond Laser to find the group velocity dispersion in brain tissue, quartz and BK7 glass
- Built setups for laser apparatuses using lenses, beam splitters and light filters
- Served as a lab assistant that directed 4 undergraduate students in their final project experiments
- Mentored student in their IUSL Summer Photonics Training Program final paper submission and final presentation

Leadership Experience:

JKA Karate Club of GWU, The George Washington University, Washington, DC September 2015-May 2018
President (2017-2018)

- Created and critiqued club emails to inform students about upcoming events and practice schedule
- Directed a group of 20 students in warm-up stretches and exercises
- Took 3rd place in Collegiate Kata and Kumite at the 2017 JKA AF National and Collegiate Karate Championships in New Orleans, Louisiana
- Selected to go to Japan and represent the US in the 2018 KAKEHASHI Project to strengthen friendly ties with Japan and the United States