



# Avery Karlin

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## EXPERIENCE

### High School Intern, Metropolitan Museum of Art

New York, NY — 2015 to Present

I worked under Dr. Marco Leona in the Department of Scientific Research on building an inkjet based SERS sensor for environmental analysis and the detection of chemical weapons for homeland security applications. I am also in the process of writing a paper based on the work for joint submission by Dr. Leona and me to a peer-reviewed journal.

#### Accomplishments

- Built and designed a piezoelectric inkjet system for mounting on a raman spectroscopy microscope
- Optimized substrate preparation for ideal signal accumulation
- Tested on various environmental pollutants and toxic substances for signal analysis

### High School Intern, Metropolitan Museum of Art

New York, NY — Summer 2014

I worked under Dr. Leona on building a multispectral imaging device and programming it to function. The goal was to take multispectral reflectance block scans of a work of art to analyze the pigments used to produce it. This would enhance conservation efforts by enabling the best decisions concerning materials for preservation.

#### Accomplishments

- Building and development of a multispectral imaging device for material analysis of artwork
- Learnt MATLAB scientific programming language for coding of device

### High School Intern, DOROT

New York, NY — 2012 to Present

During the summer of 2012 and 2013, and academic year of 2013-2014, I worked as an intern at DOROT, a Jewish non-profit dedicated to helping homebound and/or isolated seniors. Dorot provides social services, classes, intergenerational weekly home visits by volunteers, cultural and social events, and programs to provide awareness of problems facing seniors. Since Fall 2014, I served as a member of the Next Generation Leadership Board.

#### Accomplishments

- Visited and tutored seniors in use of electronics, such as cell phones, laptops, or tablets
- Participated in and lead several intergenerational discussion groups about current events



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## LEADERSHIP

### **Undersecretary of Technology and Innovation, Stuyvesant Model UN**

New York, NY — Fall 2015 to Spring 2016

- Management of technological resources and development of improved methods for teaching public speaking

### **Director of StuyMUNC Interior, Stuyvesant Model UN**

New York, NY — Fall 2015 to Spring 2016

- Management of logistics at the Greater NY area Stuyvesant conference

### **Director of StuyMUNC Logistics, Stuyvesant Model UN**

New York, NY — Fall 2014 to Spring 2015

- Management of finances at the Greater NY area Stuyvesant conference

### **Member of the Next Generation Leadership Board, DOROT**

New York, NY — Fall 2014 to Spring 2016

- Lead the planning of intergenerational events such as trips and discussion groups

### **President and Founder, Stuyvesant Physics Society**

New York, NY — Fall 2015 to Spring 2016

- Planned meetings and recruited speakers to discuss current developments in physics research

## EDUCATION

### **Stuyvesant High School**

Stuyvesant Diploma/NY State Diploma (projected)

New York, NY — 2012-2016 (projected)

One of the most prestigious specialized math-science high schools in New York City, where I was able to take classes including Multivariable Calculus, Differential Equations, AP Calculus BC, System Level and Graphical Programming, AP Computer Science A, AP Physics C Mechanics and Electromagnetism, AP Latin, and AP Macro and Microeconomics.

## SKILLS AND INTERESTS

- Languages
  - Native speaker in English
  - Proficient in Classical Latin
- Programming
  - Skilled in Java, C, and LaTeX
  - Proficient in Python, MATLAB, HTML, CSS, and Bash
  - Skilled in Vim and Git software
- Physics and Math
  - Introductory Calculus-Based Mechanics, Electromagnetism, Waves, and Quantum Mechanics
  - Linear Algebra, Multivariable Calculus, Ordinary Differential Equations
- Personal Interests
  - Science Fiction, High Fantasy
  - Psychology, Political Science, Philosophy
  - Logic, Computer Science
  - Current Events, International Relations
  - Chess