FIRST AND LAST NAME  
Address – Phone – Email



EDUCATION  
State University of New York at New Paltz  
**Bachelor of Science, Physics and Chemistry** | expected May 2019  
  
LAB SKILLS

**Laboratory techniques:** Bioassay, liquid-liquid extraction, soxhletic extraction, thin-layer chromatography (TLC), atomic force microscopy (AFM), UV Vis spectroscopy, fluorescence spectroscopy, bomb calorimetry, refractometry, polymerase chain reaction (PCR), western blot, gel electrophoresis, nuclear magnetic resonance (NMR) spectroscopy

**Languages:** Conversational in Spanish, French, and Italian; basic German

**Computer:** Microsoft Excel, Word, and Powerpoint; Mathematica; Gaussian/Gaussview 09

RESEARCH EXPERIENCE

**Research Assistant**, Physics/Chemistry department, SUNY New Paltz | January 2018 - July 2018

***Correlation of azomethine condensation equilibrium constants with quantum chemical descriptors***

* Used Gaussian 09 extensively to calculate orbital energies, frequencies, and optimal geometries for various amines, benzaldehyde derivatives, and benzoic acid derivatives (and their conjugate benzoate ions).
* Used Microsoft Excel to correlate these quantities with experimental equilibrium constants determined using nuclear magnetic resonance (NMR) spectroscopy, which involved calculating multi-parameter equations of best fit and relevant regression statistics, including confidence intervals and adjusted coefficients of determination.

**Research Assistant**, Chemistry department, SUNY New Paltz | September 2017 - November 2017

***Characterization of oligonucleotide surfactant aggregates***

* Titrations of synthetic oligonucleotides with various surfactants were performed while using UV Vis spectroscopy and fluorescence spectroscopy under various conditions.
* Kinetic data obtained from titrations; Atomic force microscopy used to create topographical images of aggregates.
* Gold probes were coated with dodecanethiol (DDT), mercaptoundecanoic acid (MUDA), and 2-aminoethane thiol (AET) and used to generate force curves for aggregates covering mica and silicon surfaces.

**Research Assistant**, Chemistry/Biochemistry department, SUNY New Paltz | June 2017 - August 2017

***Phytochemical properties of T. arjuna; Insecticidal activity of nicotinoid derivatives***

* Investigated the chemical contents of Terminalia arjuna; prepared soxhletic extractions of the bark of T. arjuna, and used liquid-liquid extraction to separate contents.
* Solvent solutions were tested for flavonoids, glycosides, triterpenoids/steroids, resins, and saponins, tannins.
* Bioassays were performed to detect insecticidal activity in *Musca domestica*.
* Thin-layer chromatography (TLC) solvent systems were investigated to maximize separation of contents; literature research on TLC solvent systems for the suspected contents was used as a starting point.
* Various nicotine derivatives were synthesized for the purpose of investigating insecticidal activity in M. domestica.

PROFESSIONAL EXPERIENCE

**Organic Chemistry Teaching Assistant**, SUNY New Paltz Chemistry Department | September 2017 – May 2018

* Organized and prepared laboratory materials; oversaw all preparatory functions of the lab.
* Assisted in teaching lab techniques, while also reinforcing the information learned in class relevant to each lab.

**Preparatory Teacher,** Science and Technology Entry Program (STEP), Iona College | June 2017 – July 2017

* Taught a large chemistry class, with a laboratory component, as well as geometry and pre-calculus.
* Prepared lesson plans for each subject every day, as well as preparing corresponding labs and materials.