

Abbigayle E. Cuomo

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EDUCATION

Yale University

Doctor of Philosophy in Theoretical Chemistry

New Haven, CT

August 2021 - Present

Stony Brook University

Bachelor of Science in Chemistry

Women in Science & Engineering (WISE) Honors Program

Stony Brook, NY

August 2017 – May 2021

RESEARCH EXPERIENCE

Graduate Research Assistant

Advisor: Victor Batista and Timothy Newhouse

November 2021 - Present

New Haven, CT

- Developing machine learning models to predict yield, ee and ligand structure of iridium catalyzed hydrogenation reactions of imines

Undergraduate Research Assistant

Advisor: Carlos Simmerling

April 2019 – July 2021

Stony Brook, NY

- Tested updated parameters for the simulation of phosphorylated amino acids
- Studied the mechanism of infection for the SARS-CoV-2 spike protein with the ACE2 receptor

Undergraduate Research Assistant

Advisor: Ming-Yu Ngai

January 2018 – June 2018

Stony Brook, NY

- Synthesis of fluorinated compounds, develop novel reagents to install fluorinated groups onto organic molecules

PUBLICATIONS

- Fallon, L.; Belfon, K.A.A.; Raguette, L.E.; Wang, Y.; Stepananko, D.; Cuomo, A.E.; Guerra, J.; Budhan, S.; Varghese, S.; Corbo, C.P.; Rizzo, R.C.; Simmerling, C. Free Energy Landscapes from SARS-CoV-2 Spike Glycoprotein Simulations Suggest that RBD Opening Can Be Modulated via Interactions in an Allosteric Pocket. *J. Am. Chem. Soc.* **2021**. *143*(30). 11349-11360.
- Raguette, L.E.; **Cuomo, A.E.**; Belfon, K.A.A.; Tian, C.; Marinos, C.; Witek, G.; Telehany, S.M.; Wu, Q.; Simmerling, C.. Updated Amber Force Field Parameters for Phosphorylated Amino Acids for ff14SB and ff19SB (In Prep)
- **Cuomo, Abbigayle** and Van Loon, Elizabeth. A Study of Fuel Moisture and the Vegetation Cycle of the Plant Chamise Chaparral (*Adenostoma Fasciculatum*) in California. *Finger Lakes Journal of Secondary Science*. **2015**. *2*(1). 14-27.

POSTERS AND PRESENTATIONS

Abbigayle Cuomo, Lauren Raguette, Carlos Simmerling. *Testing Parameters for Simulation of Phosphorylated Amino Acids*.

- Chemistry Research Day, Stony Brook University, October 2019

SCHOLARSHIPS, HONORS, AND AWARDS

Stony Brook University

- Outstanding Achievement in Chemical Research Award 2021
- Stony Brook College of Arts and Sciences- Spiegel Family Scholarship 2020

- Stony Brook University Academic Achievement Award 2019 - 2021
- Chick-fil-A Remarkable Futures Scholarship 2019
- Stony Brook University Presidential Scholarship 2017 - 2021
- NYS Schools Academic Excellence Scholarship 2017 - 2021

Commack High School

- International Science & Engineering Fair Finalist, 4th place Earth and Environmental Science 2017
- Regeneron Science Talent Search Top 300 Scholar 2017
- Long Island American Chemical Society Award 2017
- Siemens Competition Semifinalist 2017

FUNDING AWARDS

June 2020-Aug 2020 Dr. Kenneth M. Nicholas Undergraduate Fellowship

TEACHING EXPERIENCE

Graduate Teaching Fellow

August 2021 – Present

Department of Chemistry – Yale University

New Haven, CT

- Organic Chemistry I
- General Chemistry I

Spring 2022

Fall 2021

Undergraduate Teaching Assistant

August 2018 – May 2019

Department of Chemistry – Stony Brook University

Stony Brook, NY

- Inorganic Chemistry
- Organic Chemistry II
- Organic Chemistry I
- Honors General Chemistry

Spring 2020

Fall 2019

Spring 2019

Fall 2018

TECHNICAL SKILLS

Programming/Scripting Languages: Python, Fortran, C++

Software Packages: AMBER, VMD, Matlab, Gaussian

LEADERSHIP AND MENTORING

Joint Safety Team

October 2021 – Present

Webmaster and Committee Chair of Outreach and Recruitment

Yale University

- Help plan and organize events to keep the chemistry department informed of best practices to stay safe in a laboratory setting.
- Manage the JST website, plan recruitment events, plan industry visits

Women in Science and Engineering

August 2019 – May 2020

Mentor

Stony Brook University

- Held weekly mentoring meetings for freshmen at SBU in the WISE program
- Gave advice regarding course planning, how to navigate college life and how to get involved in research

VOLUNTEER EXPERIENCE

Stony Brook University

- Stony Brook Food Pantry Volunteer

August 2019 – March 2020

Long Island Community

- CYO Basketball League Volunteer
- Relay for Life Volunteer

Nov 2012 - March 2017

Nov 2015 - Feb 2017

- The Fairway Foundation Volunteer

Sept 2018 – Sept 2019

WORK EXPERIENCE

Long Island, NY

- Chick-fil-A Hospitality Team Member
- Tutor; Chemistry, Math, Physics
- Babysitter

October 2016 – March 2020

January 2014 – May 2017

September 2015 – May 2016