

SARAH DUTTON

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EDUCATION

California Institute of Technology

2019-Present

Ph.D. in Physical Chemistry

Thesis: Construction of a Novel High Throughput Chirped-Pulse Fourier Transform Microwave Spectrometer and Study of Small Molecule Alcohol:Water Clusters.

Overall GPA: 3.90

Middlebury College

2015-2019

B.A. in Chemistry, Mathematics

Chemistry thesis: Thermal Decomposition of Sulfur-Containing Contaminants.

Math thesis: Proof Styles of the Combinatorial Nullstellensatz.

Overall GPA: 3.97

EXPERIENCE

California Institute of Technology

October 2019 - June 2020

Graduate Student/Teaching Assistant

Pasadena, California

While starting research towards my Ph.D. in the Blake group, I was a teaching assistant for general chemistry courses and a physical chemistry lab. In this capacity, I led small sections, office hours, and labs, and graded all work.

Vasilioi Lab, Middlebury College

June 2018 - May 2019

Research Assistant

Middlebury, Vermont

I determined the gas phase thermal decomposition of biofuel contaminants, in collaboration with NREL, via matrix isolation Fourier-transform infrared spectroscopy and mass spectrometry. I presented this research as a poster at the Middlebury Summer Research Symposium. The next year, I presented on further work as a public talk at the Middlebury Spring Research Symposium and for my senior thesis.

Tantillo Lab, UC Davis

June - August 2017

REU Student

Davis, California

I determined the mechanism for a series of gold-catalyzed hydrogen shifts using computational chemistry programs. I presented a poster at a national ACS meeting, and a public talk at the Middlebury Spring Symposium.

Middlebury College Center for Teaching and Learning

January 2016 - May 2019

Peer tutor/Supervisor

Middlebury, Vermont

I met one-on-one with students in math and chemistry courses, or ran drop-in sessions. In addition, I organized drop-in sessions for the chemistry and mathematics departments and acted as a student supervisor.

Winona Camps for Boys

June-August 2016

Sailing/Tent Counselor

Bridgton, Maine

I served as primary caregiver and responsible party for a tent of four campers, as well as a sailing instructor for the junior unit.

SKILLS AND STRENGTHS

Data Visualisation	MATLAB, Microsoft Excel
Typesetting Document	Latex
Programming	Python, Shell
Language	Spanish (Proficient)

VOLUNTEER ACTIVITIES/CO-CURRICULARS

Member of the Chemistry Graduate Studies Committee *2020-Present*

With this group, I develop webinars on applying to graduate programs in chemistry, organize a mental health lunch series for the community, and assist with department programming events to facilitate community building.

RISE Summer Math Program Tutor *2020-Present*

I tutor middle and high school students in math to prepare them for the upcoming academic year or the SAT as appropriate.

Charles Drew/Caltech Connect Program Mentor *2020-Present*

I partner with a student at Charles Drew University or at Pasadena City College to mentor them in developing as a scientist and finding an independent research project.

Caltech Title IX Graduate Advisory Council Member and Title IX Advocate *2020-Present*

I serve as a graduate advisor for the Title IX and Equity office. In addition, I am a peer advocate for anyone who may be experiencing discriminatory practices and require the assistance of the Title IX office.

Mentor for Women Mentoring Women *2019-2020*

I worked with and undergraduate woman at Caltech as a part of a women's peer mentoring group.

Founding Member of the Student Government Committee for Sexual and Relationship Respect *2017-2019*

During my undergraduate degree, I helped found a student government ad hoc committee to improve the campus culture surrounding sexual and relationship respect.

Co-Chair of the Mathematics Department Student Advisory Committee *2017-2019*

In this role, I helped build community in the math department, and provided input when new faculty were hired.

Co-President of On Tap: Middlebury Tap Group *2015-2019*

Danced with and managed the on-campus tap group.

Mentor and Co-Chair of DREAM Group Mentoring *2015-2019*

I worked with DREAM for four years as a mentor for children living in subsidized housing developments around Middlebury Vermont. In addition, I managed the group for two years as the co-chair of the campus chapter.

AWARDS AND RECOGNITIONS

NSF Graduate Research Fellow	2020-Present
Phi Beta Kappa Prize	2019
ACS Award in Inorganic Chemistry	2019
ACS Award for Excellence in Chemistry	2019
Phi Beta Kappa Junior Inductee	2018
Goldwater Nominee	2018
REU Travel Award to ACS Meeting	2018
Middlebury College Scholar	2015-2019