

Virginia Tech
Graduate Research Assistant
Crawford Group
Phone: +1 (901) 240-0487

Department of Chemistry (0212)
Davidson Hall Rm 480
1040 Drillfield Drive
Blacksburg, Virginia 24061

Education **Virginia Tech**

Ph.D. Candidate, Chemistry, 2021. Current GPA: 3.90

Field: Quantum Chemistry

Relevant Courses:

Quantum Chemistry and Spectroscopy, Group Theory,
Computational Physics, Electronic Structure Theory

Relevant Codes: C++ codes for RHF and MP2,
Python codes for RHF, MP2, CCSD, and CC2,
Psi4 plugin for counterpoise-corrected many-body expansions,
test-bed python scripts for regression, kernel-ridge regression,
cross-validation, and gradient descent

Mississippi College

B.S., *Summa Cum Laude*, Chemical Physics, 2016. GPA: 3.90

Thesis: "The Conventional Strain Energies of Cyclobutadiene and its Dimethyl-
and Dinitro- Derivatives"

Relevant Courses:

Chemical Energetics, Quantum Physics, Theoretical Chemistry

Southwest Tennessee Community College

Transfer credit, Chemistry, 2014.

Workshops

2017 MolSSI Software Summer School, Virginia Tech

2017 Molecular Response Properties Summer School, Virginia Tech

2016 ACS COMP Undergraduate Research Workshop, San Diego, California

Research **Virginia Tech**

Graduate Research Assistant

Project: Machine-learning for compact wavefunction design

Development of non-parametric supervised and unsupervised machine-
learning algorithms, from regression to neural networks, for learning
and mapping wavefunctions from density-based descriptors

Project: BSSE in the MBE of molecular properties, *Manuscript in Preparation*

Updated a many-body expansion Python plugin for Psi4 to compute response
properties with counterpoise corrections in a massively parallel fashion

Mississippi College

Undergraduate Research Assistant

Project: Conventional strain energies of cyclobutadiene and its derivatives

Computational study on the effects of strain energy and antiaromaticity (or lack
thereof) in the "prototypical" antiaromatic species

Southwest Tennessee Community College

Undergraduate Research Assistant

Project: Synthesis and characterization of oxadiazole precursors

Presentations

Poster, MS ACS Honors Banquet 2016, **1st prize**, Starkville, MS

Talk, MCTC Research Symposium, 2016, **1st prize**, Tougaloo, MS

Poster, ACS National 2016, San Diego, California

Talk, SURC 2016, **2nd prize**, Atlanta, Georgia

Poster, CCTCC 2015, Jackson, MS

Poster, SWRM/SERMACS 2015, Memphis, TN

Talk, MCTC Research Symposium 2015, Clinton, MS

Poster, MS ACS Honors Banquet 2015, **2nd prize**, Hattiesburg, MS

Poster, SURC 2015, Tuscaloosa, AL

Poster, SWRMACS 2015, Fort Worth, TX

Awards

Joseph Barnhill Memorial Award in Chemistry @ Mississippi College S16

Alpha Chi Honor Society @ MC S16

Who's Who Among Students in American Universities and Colleges? @ MC F15

Trustee Scholar @ MC F14

Dean's List @ MC F16

President's List @ MC F14/S15

Dean's List @ Southwest Tennessee Community College F13/S14

Phi Theta Kappa Honor Society S13

Teaching

Virginia Tech

Physical Chemistry I Lab

Teaching assistant, wet labs, prelab lectures

Development of prelab quiz software

General Chemistry I Lab

Teaching assistant, wet labs

Mississippi College

Physical Chemistry I Lab

Teaching assistant, wet labs, Mathcad exercises

General Chemistry I Lab

Teaching assistant, wet labs

Southwest Tennessee Community College

Organic Chemistry I Lab

Teaching assistant, wet labs