

Curriculum Vitae

James Gay

jimsg8164@gmail.com

Education

Bachelor of Science, Chemistry

Pre-Medical Concentration

Georgia State University, Atlanta, GA

GPA: 4.19; President's List; Honors College

Anticipated Graduation: May 2022

Bachelor of Science, Physics

Georgia State University, Atlanta, GA

GPA: 4.19; Sigma Pi Sigma; President's List; Honors College

Anticipated Graduation: May 2022

Research and Work Experience

Undergraduate Research Student

Georgia State University, Atlanta, GA

Advisor: Dr. Samer Gozem

January 2021 – Present

- Working in a Unix environment and Python/Bash scripting
- Constructed Electrostatic Spectral Tuning Maps (ESTMs) from density functional theory calculations
- Currently working on extending ESTMs to different properties
- Modeled luciferin absorption in solvents of varying polarity
- Independent CHEM 4160 Project: Determined transition state structures of hemiacetal formation from cyclohexanone and ethylene glycol reaction

Undergraduate Research Student

Georgia State University, Atlanta, GA

Supervisor: Dr. Unil Perera

July 2020 – December 2020

- Used MatLab coding to recreate formerly published Fourier-Transform Infrared Spectroscopic data of human serum samples
- Developed step-by-step procedure for processing Fourier-transform infrared spectra data for future undergraduate researchers

Presentation

Gay, J. and Gozem, S. "Density Functional Theory Calculations of Optical Properties and Transition State Structures." Presented at Georgia State University STEM Undergraduate Research Conference, Atlanta, GA, March 2021.

Teaching Experience

Volunteer Tutor, *Northstar Tutoring* September 2020 – Present

- Tutor high school students from low-income and underprivileged communities in the Washington D.C metropolitan area
- Conduct communication with student, parents, and teachers to assist in student success
- Provide assistance in a variety of subjects including, but not limited to, mathematics, science, and social studies

Chemistry Teaching Assistant, *Georgia State University* January 2019 – Present

- Assist and guide students one-on-one and in groups with quiz prep, test prep, homework assignments, data processing, and chemical experiments
- Explain chemical and physical theory in-depth and in different ways for a variety of learning skills
- Grade homework assignments for 50+ students per section per week each semester
- Experience teaching Principles of Chemistry I Lab, Survey of Chemistry I Lab, and Survey of Chemistry II Lab

Private Tutor, *Georgia State University* August 2018 – Present

- Motivate, stimulate, and encourage interest in a variety of chemistry, physics, and biology courses
- Conduct one-on-one and group tutoring to students in chemistry, physics, and biology
- Provide homework assistance and college level midterm/final preparation

Laboratory Skills

Laboratory Safety and Management	Extraction of Organic Molecules
Titration	Purification of Organic Molecules
Gas Chromatography	Proton NMR
Proton NMR and Carbon NMR	Carbon NMR
Synthesis of small molecules	IR Spectroscopy
Rotary evaporation	Standardization and Calibration

Technical Skills

Unix/Bash	Monte Carlo Simulation
Python	MatLab
OriginLab	Arduino
Q-Chem	Titrasoft
IQmol	ChemDraw
Gaussian	HTML
VMD	Microsoft Office
LabView	

Leadership Experience

National Residence Hall Honorary Royal Flame Chapter; Vice President (May 2021 – Present)

- Chair the Recognition Committee and organize monthly projects to recognize individuals, organizations, and events that bring diversity and service to the university residential community
- Oversaw the nomination and selection process for monthly competitive “Of The Month” awards to recognize students and staff for their academic and service achievements

American Medical Student Association (AMSA); Volunteer Coordinator (May 2021 – Present)

- Coordinate one collaborative volunteer opportunity per month for 490 AMSA members
- Assist members one-on-one with finding and securing individual volunteer opportunities

Volunteer Experience

Science Olympiad hosted at *Georgia State University* (February 2019 – Present)

- Organize two physics competition events throughout the day
- Assist students, parents, and teachers as a tour guide across campus to locate events
- Register and judge 15 student teams for elastic glider and bottle rocket events

Scholarships and Fellowships

- LSAMP Fellowship (June 2021 – Present)
- Zell Miller Scholarship (August 2018 – Present)

Professional Organizations/Club Memberships

- American Chemical Society (July 2021 – Present)
- National Residence Hall Honorary at Georgia State University (May 2021 – Present)
- American Association of Physicists in Medicine (May 2021 – Present)
- The Society of Rheology (May 2021 – Present)
- American Medical Student Association at Georgia State University (2020 – Present)
- Society of Physics Students at Georgia State University (August 2019 – Present)
- Honors College at Georgia State University (August 2019 – Present)
- Chemistry Club at Georgia State University (August 2018 – Present)

References

Dr. Samer Gozem
Georgia State University
Department of Chemistry
Phone: (404) 413-5569
Email: sgozem@gsu.edu

Dr. Suazette Mooring
Georgia State University
Department of Chemistry
Phone: (404) 413-5527
Email: smooring@gsu.edu

Dr. Brian Thoms
Georgia State University
Department of Physics
Phone: (404) 413-6045
Email: bthoms@gsu.edu

Dr. Jonathan Sylvester
Georgia State University
Department of Biology
Phone: (404) 413-5350
Email: jsylvester@gsu.edu