

# Abdul Zamani

Ph.D. | Theoretical Chemistry

✉ AYZ24@pitt.edu  github.com/Abdul-Zamani

## Education

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**University of California, Merced**

*Ph.D. Chemistry*

**Merced, California**

*Aug 2018 – Dec 2023*

**La Sierra University**

*B.S. Biochemistry*

**Riverside, California**

*Aug 2014 – Jun 2017*

**Riverside City College**

**Riverside, California**

*Jun 2012 – Jun 2014*

## Research Experience

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**University of Pittsburgh | Department of Chemistry**

*Jun 2024 – Present*

Postdoctoral Associate | Advisor: Kevin Carter-Fenk

**UC Merced | Department of Chemistry and Biochemistry**

*Jun 2018 – Dec 2023*

Graduate Student Researcher | Advisor: Hrant P. Hratchian

**La Sierra University | Department of Chemistry and Biochemistry**

*Jun 2015 – Jun 2017*

Undergraduate Student Researcher | Advisor: Marco M. Allard

## Publications

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**A.Y. Zamani** and K. Carter-Fenk. "Toward *ab initio* realizations of Collins' Conjecture." *J. Chem. Phys.* **163**, 034103 (2025)

**A.Y. Zamani** and H.P. Hratchian. "Estimating vertical core excitation energies from Møller Plesset theory with spin projection." *Mol. Phys.* e2398142 (2024)

**A.Y. Zamani** and H.P. Hratchian. " $\Delta$ -based composite models for calculating X-ray absorption and emission energies." *J. Chem. Phys.* **159**, 224109 (2023)

H.H. Corzo, A.E. Hillers-Bendtsen, A. Barnes, **A.Y. Zamani**, F. Pawlowski, J. Olsen, P. Jørgensen, K.V. Mikkelsen and D. Bykov. "Coupled Cluster Theory on Modern Heterogeneous Supercomputers." *Front. Chem.* **11**, 1154526 (2023)

**A.Y. Zamani** and H.P. Hratchian. "Assessing the performance of  $\Delta$ SCF and the diagonal second-order self-energy approximation for calculating vertical core excitation energies." *J. Chem. Phys.* **157**, 084115 (2022)

## Teaching Experience

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**UC Merced | Department of Chemistry and Chemical Biology**

*Aug 2018 – Present*

Graduate Teaching Assistant

- CHEM 001 – Preparatory Chemistry
- CHEM 002, 010 – General Chemistry I, II
- CHEM 112 – Quantum Chemistry and Spectroscopy

**La Sierra University | Department of Chemistry and Biochemistry**

*Jun 2015 – Jun 2017*

Undergraduate Teaching Assistant

- CHEM 281L, 282L, 283L – Organic Chemistry I, II, III Laboratory

## Science Policy Experience

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Science Diplomacy Fellowship   National Science Policy Network	Jan 2025 – July 2025
Science Policy Skills Training Certificate   National Science Policy Network	Jan 2025
Science Diplomacy Skills Training Certificate   National Science Policy Network	Dec 2024

## Other Employment

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University of Redlands   Department of Biology and Chemistry Laboratory Assistant	Sep 2017 – May 2018
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## Selected Honors and Awards

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Chemistry and Chemical Biology Summer Research Fellowship   UC Merced	2019 - 2020
Chemistry Graduate Student Travel Award Fellowship   UC Merced	2019
Competitive Edge Summer Bridge Fellowship   UC Merced	2018
Leland Wilson Memorial Chemistry & Biochemistry Scholarship   La Sierra University	2017
Greater Riverside Dollars for Scholars Scholarship	2012

## Presentations

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63 <sup>rd</sup> Sanibel Symposium   St. Augustine Beach, FL   Poster	Feb 2024
West Coast Theoretical Chemistry Meeting   Davis, CA   Poster	May 2023
Advanced Light Source User Meeting   Virtual   Poster	Aug 2022
10th Conference on Molecular Quantum Mechanics   Blacksburg, VA   Poster	Jun 2022
ACS National Meeting   San Diego, CA   COMP: Contributed Talk	Mar 2022
ACS National Meeting   San Diego, CA   COMP & Sci-Mix Poster	Aug 2019

## Service Activities

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Competitive Edge Summer Bridge Program   Graduate Mentor	Jul 2022 – Aug 2022
Assisting incoming students with their transition into graduate studies at UC Merced	
ACS National Meeting   San Diego, CA   COMP Session Presider	Aug 2019
Symposium – <i>Exploring Transition Metal Chemistry &amp; Spectroscopy with Quantum Chemistry</i>	
Science Outreach Volunteer	May 2017 – May 2019
Chemistry demonstrations at CA elementary schools – Weaver USD (May 2017), Alvord USD (May 2019); Science Fair Volunteer – Donn B. Chenoweth Elementary School (Nov 2018)	

## Workshops and Training

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IBM Machine Learning   Coursera	Sep 2024
9th BerkeleyGW Tutorial Workshop   DOE C2SEPPEM   CSUEB Oakland Center	Feb 2023
Qiskit Global Summer School   IBM Research (Quantum Computing)   Virtual	Jul 2020
MolSSI Software Summer School   UT Austin   Texas Advanced Computing Center	Jul 2019

## Technical Skills

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**Programming Languages** – Fortran 90/03 , Python, C++ **Tools and Environments** – Linux, Slurm, Sun Grid Engine, Nvidia HPC SDK, OpenMP, Vim, git, conda, bash, HTML, L<sup>A</sup>T<sub>E</sub>X, Gaussian, Q-Chem, MRCC, UQUANTCHEM, PySCF, DoNOF, Mathematica, Inkscape **Data Science Techniques** – Exploratory Data Analysis, Supervised Machine Learning ; Libraries – pandas, scikit-learn, NumPy, SciPy