

William Wang

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EDUCATION

NORTHWESTERN UNIVERSITY

Bachelor of Science in Materials Science & Engineering

Evanston, IL

September 2024 - Present

THE LAWRENCEVILLE SCHOOL

High School Diploma - High Honors (all terms)

Lawrenceville, NJ

September 2021 - June 2024

RESEARCH EXPERIENCE

HAILE GROUP, NORTHWESTERN UNIVERSITY

Undergraduate Student Researcher

Evanston, IL

January 2025 - Present

- Investigating barium-doped cesium dihydrogen phosphate electrolytes for applications in solid acid fuel cells under Ph.D student Gordon Peiker in Professor Sossina Haile's lab.
- Implementing process to accelerate collection of impedance data under postdoctoral researcher Sara Sand.

TOPPER GROUP, COOPER UNION

Visiting Student Researcher

New York City, NY

July 2023 - September 2024

- Conducted density functional theory and Monte Carlo simulations of hydrogen fluoride clusters under Professor Robert Topper
 - Co-author on an American Chemical Society Fall 2024 presentation ([ACS Abstract](#))¹
- Developed Lennard-Jones parameters for noble gas clusters and corresponding case studies for TransRot, a portable molecular simulation software ([Adding Noble Gases to TransRot](#) | [Optimization and Benchmarking](#))
 - Author on a [Single Figure Presentation \(SFP\)](#) for the 2024 Virtual Winter School on Computational Chemistry

STAN-X

Research Member

Lawrenceville, NJ

September 2023 - March 2024

- Produced transgenic fruit flies with SX4 P-element inserts containing LexA drivers in the *tapas* gene of *Drosophila melanogaster*, enabling researchers to study gene function and tissue interaction through binary expression systems at Indiana University Bloomington's Drosophila Stock Center
 - Author on a report titled "[SX1238 tapas Gene Insertion](#)"
- Characterized the P-element insertion site using inverse PCR and Sanger sequencing as part of the Stan-X molecular biology program associated with The Lawrenceville School and Stanford University faculty

ACTIVITIES

NUSTARS | Wind Tunnel Team Member

Evanston, IL | September 2024 - Present

- Developing testing procedure and matrices for full-scale rockets at Embry-Riddle Wind Tunnel Facility as part of NASA's Student Launch Challenge.
- Used CAD to design hardware for wind tunnel mounting and analyzed testing data using NumPy and Pandas.

SKILLS

- Software: OnShape (CAD), PSI4 (DFT), TransRot (Monte-Carlo simulations), Avogadro, Excel
- Laboratory Techniques: electrochemical cells, electrochemical impedance spectroscopy (EIS), spin coating, X-ray powder diffraction, UV-Vis spectroscopy, concrete compression testing, inverse PCR, DNA extraction, volumetric pipetting
- Computer Tools: MATLAB, LaTeX, Java, Swift (SwiftUI), HTML/CSS

¹Topper, R.; Topper, S.; Hassan, U.; Kim, A.; Frost, J.; Wang, W. *TransRot: An open-source project for simulated annealing Monte Carlo calculations of molecular clusters, microhydrated species, and surface adsorbates*. American Chemical Society. <https://acs.digitellinc.com/p/s/transrot-an-open-source-project-for-simulated-annealing-monte-carlo-calculations-of-molecular-clusters-microhydrated-species-and-surface-adsorbates-610290> (accessed 2024-12-13).