William Wang

New York City, NY 10065 • willwang2028@u.northwestern.edu • + 1 (646) 830-6687

EDUCATION

Northwestern University — **Evanston, IL**
Bachelor of Science in Materials Science & Engineering — **September 2024 - Present**

The Lawrenceville School — **Lawrenceville, NJ**
High School Diploma - High Honors (all terms) — **September 2021 - June 2024**

RESEARCH EXPERIENCE

Cooper Union — **New York City, NY**
Visiting Student Researcher — **July 2023 - September 2024**

- Conducted density functional theory (DFT) and Monte Carlo simulations of hydrogen fluoride clusters under Chemistry Professor Robert Topper
  - Co-author on an American Chemical Society Fall 2024 presentation (Slides | 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 — **Lawrenceville, NJ**
Research Assistant — **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 model rockets at Embry-Riddle Wind Tunnel Facility for Northwestern University's entry to NASA's Student Launch Challenge

Northwestern Concrete Canoe | *Mix Team Member* — **Evanston, IL | September 2024 - Present**

- Iteratively testing and producing concrete mixes less dense than water for Northwestern University's entry to the American Society of Civil Engineers Concrete Canoe Competition

MintBox | *Co-Founder* — **New York City, NY | June 2020 - June 2024**

- Founded a local gardening organization: sold over 110 gardening kits to raise $2,000; designed an auto-watering planter for community center Hudson Guild; donated 50 educational kits to youth shelter Covenant House New York (Website)

SKILLS

- Computational Tools: OnShape (CAD), PSI4 (DFT), Avogadro, Excel
- Laboratory Techniques: UV-Vis spectroscopy, electrochemical cell manufacturing, spin-coating, concrete compression testing, inverse PCR, DNA extraction, volumetric pipetting
- Programming: MATLAB, LaTeX, Java, Swift/SwiftUI, HTML/CSS

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[1]Topper, 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).