

Esther Adelson

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Education

University of Michigan

PhD in Physical Chemistry

Ann Arbor, MI

Expected Graduation May 2030

University of South Carolina

Bachelors of Science in Chemistry, Chemistry

Columbia, SC

Graduation May 2025

Bachelors of Science, Mathematics

GPA 4.0/4.0

Thesis Title: Tunable Photoisomerization Kinetics in Photochromic Metal-Organic Frameworks

Awarded with Honors from the South Carolina Honors College

Awarded as *Summa Cum Laude*

Research Experience

Rotation in Maldonado Group

University of Michigan: Ann Arbor, MI

Fall 2025

Applied Cyclic Voltammetry measurements to achieve electrodeposition of alloy particles.

Measured electrodepositions using x-ray diffraction (XRD).

Undergraduate Research in Sushtova Group

University of South Carolina: Columbia, SC

Fall 2021- Spring 2025

Used air sensitive organic synthesis to make linkers for porous and graphitic materials.

Performed inorganic synthesis processes to make perovskites and Metallic Organic Frameworks (MOFs).

Gather photophysical data on photoswitch molecules utilizing UV-vis spectroscopy instruments.

Hollings Scholar Internship

Pacific Marine Environmental Laboratory: Seattle, WA

Summer 2024

Worked with the Ebb Carbon group to analyze the quality of total alkalinity data gathered on a novel instrument.

Aided the group in identifying issues in the data and ways to mitigate.

ORISE Internship

Hollings Marine Laboratory: Charleston, SC

Summer 2023

Performed extractions on water and sediment samples from a 28 day mesocosm study of the partitioning of PFAS into different biological areas within estuary environments.

Analyzed those samples utilizing Liquid Chromatography-Tandem Mass Spectrometry (LC-MSMS).

Teaching Experience

Graduate Student Instructor: University of Michigan

Ann Arbor, MI

General Chemistry (CHEM 130) *Fall 2025*

Engage students in discussion with practice problems and review of course information.

Hold office hours to additionally aid students in understanding course concepts and work through problems.

Publications

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1. Grace C. Thaggard, Kyoung Chul Park, Jaewoong Lim, Buddhima K. P. Maldeni Kankanamalage, Johanna Haimerl, Gina R. Wilson, Margaret K. McBride, Kelly L. Forrester, **Esther R. Adelson**, Virginia S. Arnold, Shehani T. Wetthasinghe, Vitaly A. Rassolov, Mark D. Smith, Daniil Sosnin, Ivan Aprahamian, Manisha Karmakar, Sayan Kumar Bag, Arunabha Thakur, Minjie Zhang, Ben Zhong Tang, Jorge A. Castaño, Manuel N. Chaur, Michael M. Lerch, Roland A. Fischer, Joanna Aizenberg, Rainer Herges, Jean-Marie Lehn & Natalia B. Shustova. Breaking the photoswitch speed limit. *Nat Commun* **14**, 7556 (2023). <https://doi.org/10.1038/s41467-023-43405-w>

Conferences and Presentations**Discover USC 2025**

Columbia, SC

Poster presentation

Title: Tunable Photoisomerization Kinetics in Photochromic Metal Organic Frameworks (MOFs)

The Society of Environmental Toxicology and Chemistry (SETAC) 2023

Louisville, KY

Poster presentation

Chemical Partitioning of Perfluorooctane Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) in Estuarine Mesocosm Exposures

Honors and Awards

ACS Inorganic Chemistry Award

May 2025

Phi Beta Kappa

May 2025

William A. Mould Senior Thesis Award Finalist

May 2025

Jeong S. Yang Award for Excellence in Undergraduate Mathematics

Spring 2024 and 2025

Magellan Scholar Grant

Spring 2024

Ernest F. Hollings Undergraduate Scholarship

Spring 2023

Magellan Mini Grant

Spring 2023

SURF Grant

Spring 2022

National Merit Scholar

*2021***Additional Experiences****Fellowship Ambassador** *Fall 2023, Fall 2024, and Spring 2025*

Columbia SC

Work to educate other undergraduate students on fellowship programs and opportunities at the University of South Carolina

Dream Outside the Box 2022 - 2024

Columbia, SC

Brought new ideas and projects to students at afterschool programs.

Project Veda 2023

Columbia, SC

Worked with an afterschool program to educate children on staying healthy through fun activities.