

Lily A. R. Mansfield
lilymansfield804@gmail.com | Ann Arbor, MI

EDUCATION

University of Michigan | Ann Arbor, MI | Ph.D. Materials Chemistry Aug. 2026–present
Barnard College | New York, NY | B.A. Chemistry Aug. 2022–May 2026
GPA: 4.02 *magna cum laude*, Departmental Honors
Thesis: Electrochemical and Topographical Studies of Selenium-Modified Gold Electrodes *with distinction*

RESEARCH EXPERIENCE

Barnard College | New York, NY | *Undergraduate Researcher* May 2023–May 2026
Advisor: Prof. Marisa Buzzeo

- Conducted consecutive electrochemical solution studies and atomic force microscopy surface studies of selenium-modified gold electrode surfaces.
- Optimized the design and fabrication of custom working electrodes with smooth gold template-stripped surfaces, enabling microscopic and spectroscopic surface studies.
- Developed printed circuit board-based electrochemical cells in collaboration with the Columbia Laboratory for Unconventional Electronics (the Kymissis group).
- Participated in 2 fully funded (\$6000) summers of research through the Barnard Summer Research Institute (2023, 2025) and Columbia University NANO-NY REU (2025).

University of Michigan | Ann Arbor, MI | *Summer Undergraduate Researcher* May–Aug. 2024
Advisor: Prof. Rachel Goldman

- Analyzed amount and structure of gallium nitride (GaN) crystals in gallium droplets by transmission electron microscopy, elucidating the effect of nitridation conditions on GaN crystallization.
- Prepared 6 GaN samples by molecular beam epitaxy by depositing Ga droplets and nitriding with varied amounts of N₂ plasma pressure.

PRESENTATIONS

Barnard College Chemistry Senior Honors Thesis Symposium Apr. 2026

Talk: *Electrochemical and Surface Studies of Selenium-Modified Gold Electrodes*

Authors: Lily A. R. Mansfield and Marisa C. Buzzeo

2026 American Chemical Society Spring Meeting Mar. 2026

Poster: *Electrochemical and Surface Studies of Selenium-Modified Gold Electrodes*

Authors: Lily A. R. Mansfield, Kara Philip, Andrew C. Crowther, Marisa C. Buzzeo

2025 Columbia University MRSEC & NANO-NY REU Symposium July 2025

Poster & talk: *Electrochemical and Topographical Studies of Selenium-Modified Gold Electrodes*

Authors: Lily A. R. Mansfield and Marisa C. Buzzeo

2025 Lida Orzeck '68 Barnard Summer Research Institute Poster Session July 2025

Poster: *Electrochemical and Topographical Studies of Selenium-Modified Gold Electrodes*

Authors: Lily A. R. Mansfield and Marisa C. Buzzeo

2024 University of Michigan Center for Materials Innovation REU Symposium Aug. 2024

Poster & talk: *Visualizing the Nucleation Of Gallium Nitride: A Combined Molecular-Beam Epitaxy Transmission Electron Microscopy Study*

Authors: Lily A. R. Mansfield, Abby Liu, and Rachel S. Goldman

2024 American Chemical Society Spring Meeting Mar. 2024

Poster: *Exploring Alternate Electrode Materials for Gold-Selenium Surface Studies*

Authors: Madelaine Dolich, Lily A. R. Mansfield, and Marisa C. Buzzeo

2023 Lida Orzeck '68 Barnard Summer Research Institute Poster Session Aug. 2023

Poster: *Exploring Alternate Electrode Materials for Gold-Selenium Surface Studies*

Authors: Madelaine Dolich, Lily A. R. Mansfield, and Marisa C. Buzzeo

TEACHING & MENTORING

Barnard College Department of Chemistry | New York, NY

Laboratory Teaching Assistant (Quantitative Analysis, Gen. Chem.) Jan. 2025–Dec. 2025

- Provide technical assistance and answer questions for 20–40 students during weekly 4-hour lab periods.
- Prepare standard solutions, test experimental procedures, and assist instructors with waste disposal, 2–4 hours/week.

Help Room Coach (Gen. Chem., Organic Chem. I, Quantum Chem.) Jan. 2024–Dec. 2025

- Provide homework and problem-solving assistance for 2 hours weekly to classes between 30 and 250 students.
- Lead informal review sessions before midterms.

General Chemistry Problem Solving Coach Sep.–Dec. 2023

- Supported instructor of twice-weekly 75 minute lectures by answering questions about in-class worksheets.

AWARDS & HONORS

Rackham Merit Fellowship (University of Michigan) Aug. 2026

Phi Beta Kappa (Barnard College) May 2026

American Chemical Society Undergraduate Award in Physical Chemistry Apr. 2026

American Institute of Chemists Chemistry Award Apr. 2026

Outstanding Student Poster Award, ACS Division of Physical Chemistry Mar. 2026

For exemplary research presented during the Spring 2026 National American Chemical Society Meeting.
Marie Reimer Scholarship Fund Prize. Apr. 2025

Awarded to an outstanding major in chemistry in the junior class.

CRC Press First-Year Chemistry Achievement Award Apr. 2023

Dean's List Fall 2022–Fall 2025

SELECTED CHEMISTRY COURSEWORK

University of Michigan

Materials Chemistry

Analytical Spectroscopy and Imaging

Barnard College

Advanced Spectroscopy and Analysis Lab

Quantum Chemistry

Thermodynamics & Kinetics

LEADERSHIP & COMMUNITY SERVICE

Barnard Chemical Society | New York, NY | Treasurer May 2024–May 2026

- Plan social and professional meetings for 100+ club members to build community among women and gender minorities in chemistry.
- Write purchase and budget requests enabling 10–12 events per year, primarily aimed at increasing interest in and access to chemistry among underrepresented minorities.
- Tripled initial 2024–25 budget from \$250 to \$750 through internal college grants.

TECHNICAL SKILLS

Lab skills Cyclic voltammetry, atomic force microscopy, UV-Vis absorption spectroscopy

Software MS Office (proficient in Excel), Igor Pro, Gwyddion, ChemDraw, OriginPro, Fiji (ImageJ)