

Aashay Mardikar

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EDUCATION

University of Rochester

Bachelor of Science, Biochemistry

- GPA: 4.00 out of 4.00

Rochester, NY

Anticipated May 2026

AWARDS, GRANTS & COMPETITIONS

National Awards:

- *Churchill Scholarship Alternate*: 1 of 4 alternates for a national STEM scholarship at Cambridge Dec 2025
- *Rhodes Scholarship Finalist*: national finalist for the world's most prestigious scholarship Oct 2025
- *Goldwater Scholar*: selected as 1/441 out of 5000+ to receive **\$7,500** for research excellence Mar 2025
- *Beckman Scholar*: selected to receive **\$26,000** for a 15-month research fellowship May 2024

Campus Recognitions:

- *Phi Beta Kappa*: 1/11 out of 1500+ elected to Phi Beta Kappa as a junior for academic excellence Apr 2025
- *Phi Beta Kappa Suzanne J. O'Brien Book Award*: 1/15 out of 1500+ from the freshman class Nov 2023
- *Whipple Science and Research Scholarship*: **\$76,000** merit scholarship awarded upon admission Mar 2022

Grants, Travel & Presentation Awards:

- *GCURS Outstanding Presentation Award*: oral presentation selected for recognition Oct 2025
- *RNA Society Poster Prize*: **\$100** for a poster presentation prize among junior scientists Jun 2025
- *AAP/ASCI/APSA Joint Meeting Travel Award*: **\$750** as a national conference travel award Apr 2025
- *Teaching Innovation Grant*: **\$6,400** for the development of a new educational tool Mar 2025
- *Educational IT - Innovation Grant*: **\$3,000** for the development of a new educational tool Jan 2025
- *Research Presentation Award*: **\$1,325** travel award to present research at a national conference Nov 2023
- *Meliora Scholar*: **\$3,500** grant to pursue an independent research project in the humanities May 2023
- *Research and Innovation Grant*: **\$3,500** grant to pursue independent research in STEM Mar 2022

Pitch Competitions:

- *2nd Prize, New York Business Plan Competition*: **\$2,000** for pitching a medical device Apr 2025
- *Hult Prize Summits*: top 40 out of 10,000+ startups in a global pitch competition for \$1M USD Jun 2024
- *1st Prize, Mark Ain Business Model Competition*: **\$10,000** for pitching a medical device startup May 2024
- *2nd Prize, New York Business Plan Competition*: **\$2,000** for pitching a medical device Apr 2024
- *3rd Prize, Big Ideas in Science and Medicine*: **\$250** for pitching a medical device Mar 2024
- *Grand Prize, Patient Safety and Technology Challenge*: **\$2,000** for pitching a medical device Nov 2023

RESEARCH EXPERIENCE

Fu Lab, University of Rochester

Researcher, Department of Biology

Rochester, NY

May 2024 - present

- Studying the METTL2 tRNA modification enzyme in the context of neurodevelopmental disorders. Generated 10 variants of METTL2 and tested their activity and binding properties to uncover novel mechanisms of neurodevelopment. Funded in the Fu Lab through the Beckman Scholars Program.

Clinical Trial Ethics, University of Rochester

Researcher, Department of Philosophy

Rochester, NY

Aug 2023 - present

- Studying antimicrobial clinical trial ethics with Dr. Richard Dees. This work aims to establish the morality of clinical trials for potentially useful antibiotics. Funded by the Meliora Scholars Program.

Dunman Lab, University of Rochester Medical Center

Researcher, Department of Microbiology & Immunology

Rochester, NY

Oct 2022 - April 2024

- Optimized and performed a high-throughput screen of 28,000 small molecule compounds as potential inhibitors of methicillin-resistant *Staphylococcus aureus* (MRSA). Utilized various assays and screening methods to select for "hits" as novel drug-like compounds. Trained lab members and wrote protocols.

Lawlor Lab, Medical College of Wisconsin

Research Intern, Department of Pathology

Milwaukee, WI

July 2021 - Aug 2022

- Completed animal training and certification: handled, tailed, and maintained mice cultures. Performed RNA isolation, genotyping, RT-PCR, qPCR, and immunofluorescence to study muscular dystrophy.

Reiter Lab, Marquette University
Researcher, Department of Chemistry

Milwaukee, WI
June 2021 – Aug 2022

- Studied an FDA-approved drug with a protein complex overexpressed in various cancers. Wrote lab protocols and CHEM 4710, an advanced biochemistry lab module at Marquette. Trained undergraduates.

LEADERSHIP, CAMPUS & COMMUNITY INVOLVEMENT

Dean of Libraries National Search, University of Rochester

Rochester, NY

Search Committee Member

Apr 2025 – Dec 2025

- Appointed by the Provost to represent undergraduates in a national search for the Dean of Libraries; served with University leadership, faculty, and trustees.
- Reviewed applicant materials, interviewed finalists, and brought student priorities into committee deliberations, including equitable study spaces and access to resources.

Qubix, University of Rochester

Rochester, NY

Lead Developer & Co-Founder

Aug 2024 – present

- Co-founded and built Qubix, a university-supported and internally funded exam review platform already used by 500+ students across multiple STEM courses to support structured, equitable study.
- Led development with faculty and the University web-applications team; recruited and managed a Qubix TA team and incorporated instructor and student feedback; usage correlated with improved exam scores.

VAPGuard

Rochester, NY

CEO & Co-Founder

Oct 2023 – present

- Co-founded a medical technology startup focused on reducing ventilator-associated infections; led early strategy, customer discovery, and prototype development.
- Completed NSF I-Corps and received Launch NY mentorship; testing prototypes in collaboration with Dr. Timothy M. Baran at the University of Rochester Medical Center Dept. of Microbiology & Immunology.

Sigma Phi Epsilon, University of Rochester

Rochester, NY

Member & Spelling Bee Coordinator

Sept 2023 – present

- Coordinated annual 19th Ward Spelling Bee in Spring 2024 supporting youth literacy (grades 3–6) in the Rochester City School District.
- Mentored younger members navigating STEM coursework and academic pathways; participated in chapter service initiatives connecting campus with the Rochester community.

ROCTalks, University of Rochester

Rochester, NY

Business Manager

Aug 2023 – May 2024

- Secured and managed funding for programming; built budgets, handled logistics, and maintained free, accessible events for the campus community.
- Supported several campus-wide events, including the flagship Annual Talk, enabling student speakers to focus on content while the organization ran smoothly.

Chamber Ensembles Program, University of Rochester

Rochester, NY

Violinist

Jan 2023 – Dec 2024

- Founded and performed in a piano trio and piano quartet; coached by Eastman School of Music graduate students and performed in campus concerts.

Chamber Orchestra, University of Rochester

Rochester, NY

Violinist

Sept 2022 – May 2025

- First violinist in the university chamber orchestra.

Friends of Strong, Strong Memorial Hospital

Rochester, NY

Emergency Department & Patient Discharge

Sept 2022 – Dec 2025

- Supported patients and families in the ED and during discharge through wayfinding, comfort measures, and coordination with hospital ambassadors.
- Practiced calm, clear communication in high-stress settings while prioritizing patient dignity and needs.

TEACHING & PEER SUPPORT

Department of Biochemistry & Biophysics, University of Rochester Medical Center

Rochester, NY

Advanced Laboratory Grader

Jan 2025 – May 2025

- Evaluated advanced biochemistry laboratory reports and delivered detailed, constructive feedback to strengthen scientific reasoning and writing.

The Learning Center, University of Rochester

Tutor

Rochester, NY

Oct 2023 – Dec 2025

- Provided 1:1 tutoring across introductory STEM and humanities courses, adapting explanations to students' backgrounds and learning styles.

Department of Chemistry, University of Rochester

Workshop Leader

Rochester, NY

Aug 2023 – Dec 2024

- Led weekly small-group workshops (10+ students) focused on problem-solving strategies and building confidence with challenging course material.

PUBLICATIONS AND PRESENTATIONS

Publications:

= corresponding author

- (In-Prep) **Mardikar, A.#**, Dees, R. H. 2025. Anticipatory Antibiotics as Preventive Medicine: A New Perspective.
- (In-Prep) **Mardikar, A.**, Gondil, V. S., Dunman, P. M.# 2025. High-throughput screening for *Staphylococcus aureus* PBP4 small molecule inhibitors.
- **Mardikar, A.#**, Ramanan, S., Stephen, M., Graham, R. J., & Gunturi, A. (2025). The promise of blue light in combating ventilator-associated pneumonia. *Expert review of respiratory medicine*, 1–11. Advance online publication. <https://doi.org/10.1080/17476348.2025.2587311>
- Gondil, V. S., Butman, H. S., Young, M., Walsh, D. J., Narkhede, Y., Zeiler, M. J., Crow, A. H., Carpenter, M. E., **Mardikar, A.**, Melander, R. J., Wiest, O.#, Dunman, P. M.#, & Melander, C.# (2024). Development of phenyl-urea-based small molecules that target penicillin-binding protein 4. *Chemical Biology & Drug Design*, 103(6), e14569. <https://doi.org/10.1111/cbdd.14569>
- Senanayaka, D., Zeng, D., Deniz, E., Priyankara, I. K., Helmbreck, J., Schneider, O., **Mardikar, A.**, Uren, A., & Reiter, N. J.# (2024). Anticancer Drugs of Lysine Specific Histone Demethylase-1 (LSD1) Display Variable Inhibition on Nucleosome Substrates. *Biochemistry*, 63(11), 1369–1375. <https://doi.org/10.1021/acs.biochem.4c00090>
- Slick, R. A., Sutton, J., Haberman, M., O'Brien, B. S., Tinklenberg, J. A., **Mardikar, A.**, Prom, M. J., Beatka, M., Gartz, M., Vanden Avond, M. A., Siebers, E., Mack, D. L., Gonzalez, J. P., Ebert, A. D., Nagaraju, K., & Lawlor, M. W.# (2024). High mobility group box 1 (HMGB1) is a potential disease biomarker in cell and mouse models of Duchenne muscular dystrophy. *Biology open*, 13(9), bio060542. <https://doi.org/10.1242/bio.060542>

Oral Presentations:

- Goldwater Summit & Gulf Coast Undergraduate Research Symposium, Houston, TX, October 2025. **A. Mardikar**, K. D. Berger, D. Fu. "Impaired Assembly and Catalysis of a tRNA 3-Methylcytosine Modification Complex Caused by Neurodevelopmental Disorder-Associated METTL2 Variants."

Poster Presentations:

- Annual Beckman Symposium, Irvine, CA, August 2025. **A. Mardikar**, K. D. Berger, D. Fu. "Neurodevelopmental disorder-associated METTL2 variants disrupt assembly of a tRNA 3-methylcytosine modification complex."
- 30th Annual Meeting of the RNA Society, San Diego, CA, May 2025. **A. Mardikar**, K. D. Berger, D. Fu. "Patient-derived METTL2 variants impair formation of an enzymatic complex responsible for 3-methylcytosine tRNA modification."
- AAP/ASCI/APSA Joint Meeting, Chicago, IL, April 2025. **A. Mardikar**, K. D. Berger, D. Fu. "Characterization of genetic variants in the METTL2 tRNA modification enzyme associated with neurodevelopmental disorders."
- AAP/ASCI/APSA Joint Meeting, Chicago, IL, April 2024. **A. Mardikar**, V. S. Gondil, P. M. Dunman. "High-throughput screening for inhibitors targeting *Staphylococcus aureus* PBP4."
- Southeastern Medical Scientist Symposium, Emory University School of Medicine, Atlanta, GA, November 2023. **A. Mardikar**, V. S. Gondil, P. M. Dunman. "High-throughput screening for *Staphylococcus aureus* PBP4 inhibitors."
- The 33rd Annual Buffalo Conference on Microbial Pathogenesis, Buffalo, NY, May 2023. **A. Mardikar**, V. S. Gondil, P. M. Dunman. "Effect of differential PBP4 expression on *S. aureus* survivability in laboratory stress conditions."

- Undergraduate Research Exposition, University of Rochester, Rochester, NY, April 2023. **A. Mardikar**, V. S. Gondil, P. M. Dunman. "Differential PBP4 expression in *S. aureus* impacts viability in non-conventional stress conditions."