

# Abe Y. Wu

[abewu@uw.edu](mailto:abewu@uw.edu) | <https://www.linkedin.com/in/abewu/>

## EDUCATION

---

**University of Washington, Seattle, WA** Expected 2027  
Ph.D. in Bioengineering | Shurl and Kay Curci Foundation Fellow  
Advisor: Suzie H. Pun

**University of Washington, Seattle, WA** Jun 2022  
B.S. in Bioengineering with Departmental Honors (Magna Cum Laude) | GPA (Major): 3.92

## RESEARCH EXPERIENCES

---

**Graduate Research Assistant**, University of Washington Jan 2023 - current  
Advisor: Dr. Suzie Pun, *Department of Bioengineering*

- Developed an aptamer-based, traceless and serial isolation system to select T cell subsets for CAR T cell therapy.
- Developing multivalent aptamer constructs for treating autoimmune disorders.
- Identified cell surface receptors for 2 aptamers discovered through cell-SELEX by optimizing mass spectrometry-compatible, aptamer-based pulldown methods.

**Rotation Student**, University of Washington Sep 2022 - Dec 2022  
Advisor: Dr. Patrick Stayton, *Department of Bioengineering*

- Synthesized and characterized in vivo pharmacokinetics of polymeric prodrugs for cancer therapy.

**Undergraduate Research Assistant**, University of Washington Oct 2019 - Mar 2020, Aug 2021-Jun 2022  
Advisor: Dr. Suzie Pun, *Department of Bioengineering*

- Characterized aptamers targeting human renal progenitor cells for cell isolation and FSGS treatment applications.
- Discovery of CD28-binding aptamers for T cell activation and immune modulation.

**Undergraduate Researcher**, University of Washington Jan 2020 - Sep 2022  
Advisor: Dr. James Lai, *Department of Bioengineering*

- Evaluated and optimized a novel osmotic device to concentrate urine samples by 100-fold in 30 minutes for sensitive point-of-care tuberculosis (TB) diagnosis.

**Research Intern**, Academia Sinica, Taiwan Jun 2020 - Jul 2021  
Advisor: Dr. I-Hsuan Wang, *Institute of Biomedical Sciences*

- Investigated the role of SARS-CoV-2 proteins in nuclear transport and centrosome organization.

## PUBLICATIONS

---

Chen, S.\*, Wu, A. Y.\*, Lunde, R.\*, and Lai, J. J. (2022), Osmotic Processor for Enabling Sensitive and Rapid Biomarker Detection via Lateral Flow Assays. *Front. Bioeng. Biotechnol.* 10:884271.

*\*authors contributed equally*

## AWARDS AND HONORS

---

- 2022-2024 Shurl and Kay Curci Foundation PhD Scholarship
- 2021 Mary Gates Research Scholarship
- 2021 Tau Beta Pi
- 2021 Hollomon Health Innovation Challenge Best Idea for Addressing Health Access and Disparities
- 2020 NIH/NBIB Design by Biomedical Undergraduate Teams (DEBUT) Challenge 2<sup>nd</sup> Prize
- 2020 Howard W. Wahl Scholarship in Engineering
- Dean's List (all quarters)

## CONFERENCE PROCEEDINGS AND PRESENTATIONS

---

- Wu, A.Y.**, Cheng, E.L., Kacherovsky, N., Salipante, S., Jensen, M.C., Pun, S.H. (2023), Aptamer-based, traceless and serial selection of CD62L<sup>+</sup> CD8<sup>+</sup> T cells for manufacturing enhanced adoptive T cell therapy. *BMES Annual Meeting 2023*. (Oral Presentation).
- Chen, S.\* , **Wu, A.\***, Lunde, R., and Lai, J. (2023), Osmotic Concentration of Urinary Lipoarabinomannan For Rapid And Sensitive Detection of Tuberculosis. *Proceedings of the Biomaterials International 2023*. (Oral Presentation).
- Wu, A.**, Chen, S., Lunde, R., Lai, J. (2022), Osmotic Processor for Enabling Sensitive and Rapid Tuberculosis Detection via Lateral Flow Assays. *University of Washington School of Medicine Inventor of the Year - CoMotion Innovation Showcase*. (Oral Presentation and Poster).
- Wu, A.**, Kacherovsky, N., and Pun, S. (2022), Discovery of CD28 Aptamers for T Cell Activation and Immune Modulation. *University of Washington Bioengineering Capstone Symposium*. (Poster).
- Wu, A.**, Kacherovsky, N., and Pun, S. (2022), Discovery of CD28 Aptamers for T Cell Activation and Immune Modulation. *University of Washington Undergraduate Research Symposium*. (Oral Presentation).
- Chen, S.\* , **Wu, A.\***, Lunde, R., and Lai, J. (2021), An Osmotic Processor For Concentrating Urine Markers. *Proceedings of the Biomaterials International 2021*. (Oral Presentation).
- Wu, A.**, Ju, T. K., Wang, I. H. (2020), A Reverse Genetics System For SARS-CoV-2. *Academia Sinica Institute of Biomedical Sciences Summer Research Symposium 2020*. (Poster).

## TEACHING EXPERIENCES

---

<b>Grader</b> , BIOEN487/587 Bioengineering and Nanotechnology	Jan 2023 - Mar 2023
<b>Co-Instructor</b> , BIOEN217 MATLAB Fundamentals for Bioengineers	Jan 2022 - Mar 2021
<b>Undergraduate Teaching Assistant</b> , BIOEN325 Biotransport I	Sep 2021 - Dec 2021

## LEADERSHIP AND EXTRACURRICULAR ACTIVITIES

---

<b>Bioengineering Curriculum Committee</b>	Oct 2021 - Jun 2022
<b>BioEducate Outreach Project and BMES Outreach Committee</b>	Sep 2021 - Jun 2022
<b>Mentor</b> , BMES and BioExplore	Oct 2021 - Mar 2022
<b>Senior Officer</b> , Society of Asian Scientists and Engineers (SASE) UW Chapter	Sep 2018 - Jun 2021

## SKILLS

---

**Lab:** SELEX, multi-color flow cytometry, molecular cloning, affinity chromatography, cell selection, immunostaining, immunoassays, confocal laser scanning microscopy, site-directed mutagenesis, immunoprecipitation, SDS-PAGE, western blot, DNA extraction and purification, PBMC isolation, Illumina NGS, Octet BLI, mammalian and bacterial cell culturing, animal procedures, RAFT polymerization.

**Computer:** MATLAB, Python, Onshape (CAD), FDM and SLA 3D printing, Java, COMSOL