Miya Paserba, B.S., M.S.

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Education

University of Michigan, Ann Arbor, MI

- Doctor of Philosophy, Biomedical Engineering (GPA: 4.00) *Aug 2022-Present*

Case Western Reserve University (CWRU), Cleveland, OH

- Master of Science, Biomedical Engineering (GPA: 4.00) *Jan 2021-Aug 2022*
- Bachelor of Science, Biomedical Engineering (GPA: 3.83) *Aug 2018-May 2022*

Skills and Techniques

Laboratory: Liquid Chromatography Mass Spectrometry, Metabolomics, Lipidomics, Isotope Tracing, Flow Cytometry, Fluorescent Microscopy, Immunoblotting, qPCR, Immune Assays, Cell Culture, Primary Immune Cell Isolation and Expansion, Enzyme Kinetics, Protein Modeling

Technical: Assay Design and Optimization, Data Visualization, Technical Writing

Software: Python, MATLAB, R, Adobe Illustrator, Graphpad Prism, MetaboAnalyst

Experience

Graduate Research Assistant • Nagrath Lab • University of Michigan ***Aug 2022-Present***

- Investigating prevention of immunosuppression after radiation therapy in pancreatic cancer through metabolism and post-translational modifications
- Collaborating with five additional principal investigators generating comprehensive metabolomics datasets via LC-MS/MS across diverse biological samples to discover metabolic targets for therapeutic intervention or to identify biomarkers for clinical trials
- Leading experiments isolating and expanding primary immune cells, specifically natural killer cells, for use in immune assays to contribute to cancer immunotherapy development
- Trained and supervised four undergraduate researchers

Student Researcher • Gerken Lab • CWRU ***Jan 2019-Aug 2022***

- Investigated and modeled enzymatic glycosylation of protein substrates and the effect on protein function during tumor development and spread
- Trained and supervised three junior undergraduate researchers and one high school student
- Developed and standardized a computational workflow for molecular dynamics simulations, improving lab efficiency by training lab members to perform these simulations independently
- Secured Biosafety Level 2 approval by authoring an Institutional Biosafety Committee application
- Published a co-first author journal article in *Glycobiology* covering mechanisms of glycosylation

Society of Women Engineers (SWE) ***2020-Present***

Co-Director • GradSWE • University of Michigan ***Jan 2024-Present***

- Organizing and leading GradSWE board meetings with 20 officers
- Fundraising and managing the organization's $15,000 budget
- Assisting the officer team in hosting professional development, outreach, corporate recruitment, and social events for over 300 active members

External Affairs Officer • GradSWE • University of Michigan ***Aug 2022-Jan 2024***

- Provided an interface between GradSWE members and corporate sponsors by maintaining relationships with over 15 companies and hosting over 10 recruitment events

Publications

Ballard, C.*, **Paserba, M.*,** *et al.* Polypeptide N-acetylgalactosaminyltransferase (GalNAc-T) isozyme surface charge governs charge substrate preferences to modulate mucin type O-glycosylation. *Glycobiology* **33**, 817-836 (2023). [*Co-first Author]

Marvar, J., *et al.* Porous PDMS-Based Microsystem (ExoSponge) for Rapid Cost-Effective Tumor Extracellular Vesicle Isolation and Mass Spectrometry-Based Metabolic Biomarker Screening. *Adv. Mater. Technol*. **8**, 2201937 (2023).

Soto-Gutierrez, A., *et al.* Lipid metabolism associated PNPLA3 rs738409 variant promotes metabolic rewiring that leads to programmed cell death in human hepatocytes. *Cell Stem Cell, (Under Review)*.

Posters and Presentations

Paserba, M., *et al.* Radiation-driven sialic acid biosynthesis has immunological consequences in pancreatic ductal adenocarcinoma (PDAC), presented at the Tumor Metabolism Keystone Symposia, Banff, AB, Canada (2024).

Paserba, M., *et al.* Molecular dynamics simulations reveal the mechanism in which the GalNAc-T family of isoenzymes differentially select and glycosylate charged peptide substrates, presented at the CWRU Department of Biochemistry Retreat, Cleveland, OH, USA (2022).

Hart, K.*, Melander, M.*, **Paserba, M.***, Wu, B.* Wearable Syncope Monitor, presented at the Support of Undergraduate Research and Creative Endeavors Symposium, Cleveland, OH, USA (2021). [*Co-first author]

Ballard, C.*, **Paserba, M.***, *et al.* The discovery that substrate charge distribution modulates the activity of the polypeptide GalNAc transferase responsible for initiating mucin-type O-glycosylation, presented at the CWRU Department of Biochemistry Retreat, Cleveland, OH, USA (2021).

Paserba, M., *et al.* Separation and characterization of isomeric glycans LNT and LNnT by gated TIMS MS/MS, presented at the Research in Science and Engineering Symposium, Boston, MA, USA (2017).

Honors and Awards

- Cellular Biotechnology Training Program (T32) Trainee — 2024—Present
- DEI Certificate Program Participant, University of Michigan — 2024—Present
- Rackham Conference Travel Grant, University of Michigan — 2024
- Rackham Student Research Grant, University of Michigan — 2023
- Dean's List, CWRU — 2018-2022
- University Scholarship, CWRU — 2018-2022
- Bernstein Memorial Award Recipient, CWRU — 2022
- Undergraduate Research Scholar, CWRU — 2022