# CURRICULUM VITAE

**Aditi Ganesan**
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## EDUCATION

**University of Michigan** **Ann Arbor, MI**
*Bachelor of Science in Engineering: Biomedical Engineering* *Expected December 2025*
*Minor: Electrical Engineering*
*GPA: 4.00/4.00*
*Relevant Coursework:* Tissue Engineering, Quantitative Cell Biology, Biological Micro- and Nanotechnology

## SKILLS

*Computer Language:* Python, MATLAB, COMSOL, SolidWorks, Java, R; OS: Windows, Linux, MacOS
*Data Mining and Analysis:* FlowJo, GraphPad Prism, ImageJ, Microsoft Office Suite
*Wet-Lab Technique:* Library Preparation, Primer Design, PCR, qPCR, RT-qPCR, LAMP, Gel Electrophoresis, Flow Cytometry, Mammalian Cell Culture, Competitive Bone Marrow Transplant, Fluorescence Microscopy

## RESEARCH EXPERIENCE

**DYNAMED Lab, Michigan Department of Biomedical Engineering** **Ann Arbor, MI**
*Undergraduate Research Assistant* *Aug. 2024 – Present*
*Advisor: Dr. Alexandra Piotrowski-Daspit*

- Investigating "decoy"- based evasion techniques for macrophage phagocytosis of polymer nanoparticle mRNA vehicles
- Optimizing primary cell culture/flow cytometry protocol for bone marrow derived macrophage polarization assay

**Qing Li Lab, Michigan Medicine** **Ann Arbor, MI**
*Undergraduate Research Assistant* *June 2022- May 2024*
*Advisors: Dr. Morgan Jones and Dr. Qing Li*

- Characterized hematopoietic stem cell inflammatory stress management in the context of myelodysplastic syndromes
- Implemented competitive transplant techniques to monitor long-term hematopoietic stem cell reconstitution potential
- Executed flow cytometry experiments on peripheral blood, whole bone marrow, and spleen murine samples

## PROJECT EXPERIENCE

**Michigan Synthetic Biology Team** **Ann Arbor, MI**
*President* *Nov. 2024 - Present*

- Leading team of 30 students in conducting wet-lab research and computational modeling in the field of synthetic biology
- Managing project timeline, experimental progress, 20K+ budget; running all meetings, recruitment, and team logistics

*Director of External Affairs* *Nov. 2023 – Nov 2024*

- Engineered Pseudomonas putida S16 with a tetrahydrofuran monooxygenase gene complex to degrade local water pollutant 1,4-dioxane; designed accompanying bioreactor compatible with existing water treatment infrastructure.
- Presented in Paris, France at iGEM 2024; Silver medal, "Best Sustainable Impact" nominee of 410 international teams

*Team Member* *Jan. 2023 - Present*

- Developed loop-mediated isothermal amplification assay for point of care detection of single nucleotide polymorphism in gene PAR4 to inform thrombin-based drug efficacy; won Gold medal and "Best Diagnostic" nominee at iGEM 2023

**Drug-Eluting Hip Implant** **Ann Arbor, MI**
*BME 350 at University of Michigan* *Aug. – Dec. 2024*

- Designed preliminary prototypes for hip implant for total hip replacement in female late-stage osteoarthritis patients

## WORK EXPERIENCE

**BD Technologies and Innovation** **Research Triangle Park, NC**
*R&D Intern – Molecular Diagnostics* *May - Aug. 2024*

- Conducted assay development, testing, and optimization (from primer/probe design to testing on clinical samples) for library expansion of point of care nucleic acid diagnostic; findings implemented into platform currently in clinical trials

## TEACHING EXPERIENCE

**Private Tutor** **Ann Arbor, MI**
*AP Physics Tutor* *Oct. 2023 – May 2024*

- Partnered with the physics department at Pioneer high school to provide one-on-one tutoring for AP Physics students

## FELLOWSHIPS AND SCHOLARSHIPS

Tau Beta Pi Centennial Scholarship 2024-2025
Regents Merit Scholarship 2022-2023

## HONORS AND AWARDS

University Honors, *University of Michigan LSA* 2022 - 2023
Dean's List, *University of Michigan College of Engineering* 2023 - 2024
James B. Angell Scholar, *University of Michigan College of Engineering* 2024

## ABSTRACTS AND PRESENTATIONS

1. Black N, **Ganesan A**, Garapati SS, Groves J, Lombardo G, BioXane: Engineering Bacteria in Bioreactors to Remove 1,4-Dioxane from Water Systems. *2024 International Genetically Engineered Machine (iGEM) Jamboree,* Paris, France. October 23-26, 2024, live stage talk, oral presentation
2. **Ganesan A**, Jones MA, Li Q. Hematopoietic Stem Cell Function is Characterized by the Activation of the NF-kB pathway. *Michigan 2024 Undergraduate Research Symposium,* Ann Arbor, MI. April 5, 2024, poster
3. **Ganesan A**, Jones MA, Li Q. Hematopoietic Stem Cell Function is Characterized by the Activation of the NF-kB pathway. *22nd Annual University of Michigan Pathology Research Symposium,* Ann Arbor, MI. Nov. 3, 2023, poster
4. **Ganesan A,** Vogel NR, Analyzing Estradiol-17B signaling and its impact on bone mass during spaceflight. *Journal of Emerging Investigators,* August 2021, abstract