Alicja Krasowska

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EDUCATION

Master of Science in Biomedical Engineering (SUGS Biotech & Systems Biology track) (GPA: 4.0/4.0) August 2024 - May 2025
Bachelor of Science in Biomedical Engineering (GPA: 3.81/4.0) August 2021 - December 2024
University of Michigan - Ann Arbor Ann Arbor, Michigan
Dean's Hnr List: 5 consec. sem · James B. Angell Scholar · Women in Science and Engineering Residential Program (WISE RP)
Study Abroad at National University of Singapore – Dept. of Biomedical Engineering January 2024 – May 2024

WORK AND RESEARCH EXPERIENCE

JAMES MOON LABORATORY University of Michigan - Ann Arbor
Research Assistant (de novo and mutein drug discovery pipeline and preclinical testing) May 2023 - present

- Worked with preclinical mouse models of neuroinflammation.
- Performed spectral flow cytometry to determine the induction of anti-inflammatory cells post cytokine mutein administration, which holds therapeutic potential for both autoimmune as well as neurodegenerative diseases.
- Utilized surface plasmon resonance to measure affinities between cytokine muteins and human/murine receptor subunits to determine the feasibility of in vivo testing in mice after preliminary screening in vitro on human cells.
- Generated de novo macrocyles and minibinders in silico for specific targeting using literature-based hotspot residues.
- Developed an ELISA under given constraints for high-throughput screening before functional characterization.
- Expressed proteins in HEK293 cells and characterized using SDS-PAGE, HPLC-SEC, and functional cell-based assays.
- Prepared synthetic high-density lipoprotein nanodiscs for peptide delivery.

KELLY ARNOLD LABORATORY University of Michigan - Ann Arbor
Research Assistant (computational modeling and data analysis) September 2024 - May 2025

- Quantitatively analyzed the relationship between antibody-FcR complex formation and different initial antibody concentrations to predict changes in Fc-mediated effector functions important in the secondary immune response.
- Employed a computational ODE model to simulate response to different vaccine doses across measured antibody concentrations, and visualized the findings in MATLAB.

FIGUEROA LABORATORY University of Michigan - Ann Arbor
Research Assistant (data labeling and organization) May 2023 - December 2023

- Prepared monochrome labels of stenosed vessels from angiograms in Photoshop to feed into the ML system and develop a non-invasive way of obtaining the FFR value used to gauge stenosis severity in coronary artery disease.
- Managed the lab's cloud-based organizational systems to enhance workflow efficiency.

COLLEGE OF ENGINEERING University of Michigan - Ann Arbor
Intro to BME Design Student Instructor September 2023 - December 2023 & January 2025 - April 2025

- Created software tutorial videos and troubleshot issues with student project deliverables in SolidWorks and COMSOL.
- Aided 45+ students in designing drug-eluting bypass grafts and growth factor-releasing hip implants to address existing products' shortcoming and reduce the need for revision surgeries.

VOLUNTEER WORK

ENGINEERING STUDENT GOVERNMENT January 2022 - December 2023
Senator and Sustainability Committee member University of Michigan - Ann Arbor

- Started the SaferSelf project to spread awareness and teach self-defense skills to students for free.
- Initiated and coordinated a campus-wide project to unify student dorms' sanitary infrastructure to conserve water.
- Oversaw funding of up to $21,000 to 30+ engineering student organizations for projects supporting the community.

CORE COMPETENCIES

Technical: Preclinical studies, gel electrophoresis, 2D/3D cell culture, PCR, SPR, spectral flow cytometry, cloning, transfection, protein harvesting and purification, ELISA assay optimization, neuroinflammation disease models, immune cell isolation

Computational: SolidWorks, COMSOL, FlowJo, MATLAB, Python, R, C++, MS Office suite, ImageJ, GraphPad Prism

Languages: Polish (native), English (fluent), Spanish (advanced), French (basic), Chinese (basic)

Soft: Problem-solving, communication, collaboration, critical thinking, creativity, adaptability, fast learner

INTERESTS

Competitive Michigan Ballroom Team, Chess (Polish Chess Fed. II female category), board games, Huberman Lab podcast