HUIKANG QIAN

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EDUCATION

Case Western Reserve University, Cleveland, OH **Expected graduation: 2029**
Ph.D student, Biomedical Engineering

Case Western Reserve University, Cleveland, OH **Dec 2023**
MS/BS, Biomedical Engineering (Dual degree program)

The College of Wooster, Wooster, OH **May 2021**
BA, Physics (Pre-engineering program)
Dean's Honor List: Spring 2019

PROFESSIONAL EXPERIENCE

Acharya Lab, Case Western Reserve University, Cleveland, OH **Jan 2023 – Present**
Graduate Researcher
Project 1: Develop a bacteria-based therapy for Inflammatory Bowel Disease.
Project 2: Determine the effect of engineered neutrophil on cancer cells

Karathanasis Lab, Case Western Reserve University, Cleveland, OH **May 2022 – Dec 2023**
Graduate Researcher
Objective: Find a new lipid nanoparticle formulation that can optimize the delivery of immune-stimulating agents to the tumorassociated immune cells while maximizing the transfection efficiency.
Specific aim 1: Determine the effect of nanoparticles' size on their distribution and diffusion in solid tumors.
Specific aim 2: Determine the effect of the ratio between mPEG-DMG and DSPE-PEG on the transfection efficiency of lipid nanoparticles.

- □ Designed siRNA-loaded ionizable cationic lipid nanoparticle formulations & synthesis nanoparticles (50-110 nm).
- □ Characterize LNP with dynamic light scattering, zeta potential measuring, & RNA loading efficiency.
- □ Designed a model that calculates precise diameters of cationic LNP from their compositions.
- □ Performed and designed in vitro and in vivo studies to evaluate the effect of size on the uptake of LNPs by macrophages.
- □ Performed LNPs injection both intratumorally and intravenously. Performed histology, ex vivo fluorescent imaging, and flow cytometry.

Karathanasis Lab, Case Western Reserve University, Cleveland, OH **Oct 2020 - May 2022**
Undergraduate Researcher
Topic: Determine if targeted nanoparticles distinguish metastatic cancer from inflammation.

- □ Designed targeted and non-targeted liposome formulations and characterized synthesized liposomes.
- □ Performed in vivo study to evaluate the deposition of liposomes. Using fluorescence imaging to determine the distribution and metabolism of liposomes (intravenous injection) in mice.
- □ Utilized bioluminescence imaging to monitor injected D2A1 cancer cells. Performed flow cytometry to quantify the immune cell population in important organs and blood at different time points.
- □ Published a paper.

CSSA of the College of Wooster, Wooster, OH **Feb 2020 - Aug 2020**

- □ *Events Coordinator* - planned & developed 5+ events for students and faculty to enhance advocacy and build relations between Chinese students and other domestic & international students while promoting Chinese culture.

Physics Department, The College of Wooster, Wooster, OH **Aug 2019 - Dec 2019**

- □ *Teaching Assistant/Tutor* for Department and STEM students.

DeGroot Lab, The College of Wooster, Wooster, OH **Aug 2019 - Dec 2019**
Junior Independent Researcher
Topic: Using structure maps to observe the dust motion in galaxies □
Used Python to create convolution filters.

□ Applied different convolution filters to distant galaxies' data enhances the detail of galaxies' dust.

PUBLICATIONS |

A.S. Choi, T.J. Moon, W. Abuhashim, A. Bhalotia, **H. Qian**, K.E. Paulsen, M. Lorkowski, C. Ndamira, R. Gopalakrishnan, A. Krishnamurthy, W. P. Schiemann, E. Karathanasis. Can targeted nanoparticles distinguish cancer metastasis from inflammation? *Journal of Controlled Release* (2023) doi: 10.1016/j.jconrel.2023.03.054

SKILLS |

□ Language Skills: Bilingual, Mandarin-English
□ Laboratory Skills: Proficient in dynamic light scattering, zeta-potential measuring, RNA concentration quantification, animal handling, mammalian cell culture, bioluminescence imaging, flow cytometry, tissue harvesting, tissue perfusion, retro-orbital bleeding, fluorescent microscope, ELISA, and histology.
□ Computer Skills: MS Office, Mathematica, Igor Pro, R, Python, MATLAB, Multisim, Latex, Image J.