Trevor J. Chan

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Education

Yale University — *New Haven, CT*

Bachelor of Science, Engineering Sciences Mechanical | Bachelor of Arts, Architecture — *2016 - 2020*

University of Pennsylvania — *Philadelphia, PA*

PhD Candidate, Bioengineering — *2021 - Present*

Publications

Morphodynamic signatures of MDA-MB-231 single cells and cell doublets undergoing invasion in confined microenvironments — *10.1038/s41598-021-85640-5*

Nature: Scientific Reports — *Mar 2021*

A microfluidic-informatics assay for quantitative physical occlusion measurement in sickle cell disease — *10.1039/D2LC00043A*

Lab on a Chip — *Feb 2022*

Biophysical informatics reveals distinctive phenotypic signatures and functional diversity of single cell lineages† — *In review*

CT super-resolution enables accurate estimation of trabecular structure and mechanical strength in the proximal femur† — *In preparation*

Tubule jamming in the developing kidney creates cyclical mechanical stresses instructive to in vitro *nephron formation* — *In review*

Patents

Adjustable Angle Orthopedic Retractor — *Application #17528168*

Currently pending — *May 2021*

Experience

Multiscale Mechanobiology Lab — *New Haven, CT*

Research Technician — *Jun 2020 - Jun 2021*

- Built and trained a convolutional neural net to identify single cells in phase contrast images and characterize single cell and cell network morphologies. Developed an original set of algorithms for use in graph based analysis of cultured cell networks.

IvyTech Designs — *New Haven, CT*

Chief Technology Officer — *Jan. 2020 - Present*

- Collaborated with orthopedic surgeons at Yale New Haven Hospital to design a novel surgical retractor for use in treating fractures in the foot and ankle. Responsible for device design, CAD modeling, and finite element stress analysis.

Honors & Awards

2022	**Mission Brain Neurosurgical Hackathon 1st place**, Winner of the international neurosurgical hackathon hosted by Mission Brain NGO, Harvard Medical School, and MIT	*Cambridge*
2020	**Connecticut Bioscience Pipeline Fund**, Winner of the Bioscience pipeline fund providing $30,000 towards the continued development of a novel biomedical device	*Connecticut*
2020	**Rothberg Catalyzer Prototype Fund**, Winner of the Prototype Fund for development of a novel biomedical device	*Connecticut*
2019	**Solar Decathlon Design Challenge Finalist**, Coauthor of one of 8 finalist submissions invited to the Solar Decathlon Design Challenge 2019 conference	*Golden, CO*
2018	**Dean's Fellowship in the Sciences**, Recipient of the Dean's Research Fellowship in the Sciences funding Summer research at Yale University	*New Haven, CT*
2017	**Light Fellowship Recipient**, Recipient of the Richard U. Light Fellowship funding language study in Beijing	*New Haven, CT*

†First Author