

Project Title	Drug mass transport in the interstitium
Supervisor	Prof Jimmy Moore Jr
Theme(s)	Biomechanics and Mechanobiology Computational and Theoretical Modelling Molecular and Cellular Bioengineering
Project Type	Desk based
Project Description	<p>When drugs are injected into interstitial spaces (e.g., intramuscularly), they may be taken up by either blood or lymphatic vessels. For some drugs, uptake into one or the other may be desirable to enhance their mechanisms of action. The direction of uptake depends on parameters such as the size of the drug (and delivery vehicles, if present), electrostatic charge, and local tissue conditions.</p> <p>While there is experimental evidence of the effects of some of these parameters, the underlying forces have not been analysed in a sufficiently quantitative manner. Better understanding of these forces would enhance therapeutic design and delivery. A theoretical model of drug transport through interstitial spaces will be constructed, with the possibility of performing some targeted in vitro experiments.</p>