

Bo Zhang, a student in Oxford University's Tissue Engineering group and Systems Engineering group, is currently completing his DPhil thesis, which combines mathematical modelling and experimental studies to improve bioreactors for culturing adult stem cells (ASCs). Bo's research aims to recognize and identify favourable conditions in which to enhance the large-scaled culture efficiency of ASCs.

Adult stem cells promise substantial therapeutic potentials in human health including in stem-cell-based therapy for different treatments such as type I diabetes, multiple sclerosis and osteoporosis. However, despite the revolutionary medical possibilities, the inherent biological complexity of the control and production of the scale-up process presents ongoing challenges.

Bo's work aims to address these challenges by gaining an advanced understanding of how oxygen, metabolism, and surface interactions affect the quality and growth rate of ASCs. Due to the interdisciplinary nature of Bo's project, he has had to acquire background knowledge and methodologies spanning across systems

engineering, tissue engineering and chemical engineering.

Prior to joining his current programme at Oxford University, Bo studied chemical engineering at the University of Toronto, where he earned a Bachelor in chemical engineering and applied chemistry and at Cornell University where he earned a Master in chemical engineering.



Bo Zhang

In addition to working on his project, publishing a few research papers, teaching undergraduates, undertaking lab designs and demonstrations, supervising other academic projects and being a member of the Oxford University Research and Graduate Admission Committee, Bo also plays point guard for the Oxford University's basketball team.

After graduation Bo intends to look for opportunities in relevant industries or in government such as, for instance, with Health Canada in order to utilize his acquired biological techniques and computational proficiency to advance the development of stem cell and cancer research.