

BIOENGINEERING & BIOMEDICAL ENGINEERING RESEARCH SEMINAR



EMPOWERING HEALTH EQUITY THROUGH BIOMEDICAL ENGINEERING: INNOVATIONS IN MICROFLUIDICS AND BIOPRINTING

January 12, 2024

1:30PM

Prof. Mohsen Akbari, PhD., P.Eng., FIAAM, MCBS, MCSME, MRSC
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Duff Amphitheatre

In the realm of biomedical engineering, addressing health disparities presents a paramount challenge. These disparities often manifest as unequal access to cutting-edge medical research tools and hindered progress in understanding and treating diseases. The existing drug development procedures, characterized by their high costs and protracted timelines, significantly impede access to affordable therapeutics, exacerbating disparities in healthcare accessibility. Tissue engineering, including bioprinting and organs on chip, has the potential to enhance healthcare accessibility. It accelerates drug development, customizes implants, and promotes regenerative medicine, reducing costs and improving treatment outcomes, ultimately benefitting patients by providing more affordable and effective healthcare solutions. In this lecture, I will delve into recent breakthroughs from my group, which leverage microfluidic and bioprinting technologies to craft tissue-mimicking models tailored for drug screening and disease modeling, aligning with our overarching goal of advancing health equity through innovative biomedical engineering.

Dr. Mohsen Akbari is an Associate Professor of Mechanical Engineering, the Director of the Laboratory for Innovations in Microengineering (LiME) at the University of Victoria, an Affiliated Associate Professor at the School of Biomedical Engineering at the University of British Columbia, adjunct professor at Terasaki Institute for Biomedical Innovation and Department of Bioengineering at University of California-Riverside. In addition to his professorship, he is a senior board member at the Canadian Biomaterials Society, board member at the Canadian Society for Mechanical Engineering, member of the Center for Advanced Materials and Related Technologies (CAMTEC), investigator at International Collaboration on Repair Discoveries (ICORD), Associate Member of Djavad Mowafaghian Centre for Brain Health, the co-founder and Chief Scientific Officer at 4M Biotech, and Scientific Advisor at Apricell Biotech. Dr. Akbari obtained his Ph.D. from Simon Fraser University and received postdoctoral training at Harvard Medical School and Brigham and Women's Hospital. He is the recipient of several awards, including the Keston Award, Induction to the College of New Scholars at the Royal Society of Canada, Fellow of International Association for Advanced Materials (IAAM), Scientist Medal from IAAM, Faculty of Engineering Teaching Excellence Award, Michael Smith Foundation for Health Research Idea to Commercialization Award, NSERC Postdoctoral Fellowship Award, BC Innovation Council Research Award, Kaiser Foundation Award, and recognized as a Canadian Rising Star in Global Health by Grand Challenges Canada. Dr. Akbari is on the editorial board of Biofabrication, International Journal of Bioprinting, Micromachines and Gels. He is also member of the Board of Directors of the Canadian Biomaterials Society. His research findings have been published in 140 peer-reviewed journal papers and book chapters with an h-index of 46 and over 9,300 citations. His work has been featured on the cover of 12 Journals and reported in +70 media outlets such as CBC News, Time Colonist, BBC News, Google News, Science Daily, The Telegraph, Fortune, and NSERC website.



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