Dr. Jazinizadeh's research is focused on injury and orthopedic biomechanics. In her Ph.D. she developed a technique to enhance hip fracture risk prediction in older adults using image processing and machine learning. She was able to double the identification of patients at high risk compared to the clinically standard method. The results of her research have a significant impact on the future of incorporating image processing and machine learning in clinical practice to predict the risk of sustaining a fracture in patients with osteoporosis. In her postdoctoral research, in collaboration with clinical partners, she is leading a longitudinal study to capture the decline in the quality of life of the patients waiting for knee and hip joint replacement surgery. She assesses the quality of life through the evaluation of the patients' joint mechanics (gait analysis), health conditions, and personal factors. She is investigating how a combination of the patients' characteristics at the baseline can be predictive of the decreased quality of life before the surgery with the end goal of using machine learning to phenotype the patients and identify groups of patients who would benefit from tailored clinical management to optimize their treatment outcomes.

Dr. Fatemeh Jazinizadeh is a biomechanical engineering researcher. Her research interests span the area of injury and orthopedic biomechanics with a focus on creating predictive models of musculoskeletal injury development and progression and investigating treatment outcomes. She has earned two B.Sc. degrees in Biomedical Engineering and Industrial Engineering, an M.Sc. degree in Biomedical Engineering, and a Ph.D. in Mechanical Engineering. Currently, Dr. Jazinizadeh is a postdoctoral research fellow at the Department of Surgery at McMaster University, Hamilton, where she is collaborating with clinical partners and leading a longitudinal clinical study to investigate the effect of joint function, osteoarthritis symptoms, and clinical and personal factors on the decline in quality of life of the patients waiting for a knee or hip joint replacement surgery. She also received her Ph.D. degree at McMaster University, and her research was focused on enhancing hip fracture risk prediction in older adults using image processing and machine learning. Dr. Jazinizadeh has been nominated and received a number of awards and grants, including the Jack Perkins Prize for the best paper published in the Medical Engineering and Physics, MITACS Accelerate Fellowship, Industry Partnership Grant from AMGEN Canada, and Governor's General Academic Gold Medal nomination.