Simon Fraser University’s core facility, WearTech Labs is looking to fill two full-time MITACS postdoctoral positions (1 year with the possibility of extension) to work in collaboration with Medtronic. This project is part of a larger Canada Digital Technology Supercluster project for developing, demonstrating, validating, and commercializing a "Continuous Connected Patient Care (CCPC) Platform" that is an end-to-end virtual and remote patient monitoring solution using medical-grade wearable sensors.

We are seeking two highly motivated postdoctoral fellows with expertise in biomedical engineering, electrical/computer engineering, mechanical/mechatronics engineering, or computer science. The successful candidates will be part of a multidisciplinary team responsible for developing wearable-based multimodal physiological monitoring solutions for at-home patients.

The successful candidates will be supervised by Dr. Ed Park, who is the PI for this Mitacs project. Dr. Park is a Professor in Mechatronic Systems Engineering at SFU and a world-leading expert in wearable technology. He and Dr. Max Donelan in Biomedical Physiology and Kinesiology serve as Scientific Co-Directors of WearTech Labs.

**Position Responsibilities:**

- Develop medical-grade wearable technology to continuously monitor blood pressure
- Conduct research on wearable-based multimodal physiological monitoring of at-home patients
- (i) Developing machine learning algorithms to perform sensor fusion and analyze physiological signals including ECG, PPG, and BCG to accurately measure vital signs, including blood pressure or (ii) modeling hemodynamic and arterial compliance for analysis and estimation of cuffless blood pressure
- Work in collaboration with the CCPC research team to develop and demonstrate a "Continuous Connected Patient Care Platform"
- Assist in supervision of graduate students and research assistants related to the project
- Publish research papers and present at relevant conferences
- Assist in preparation and writing of grant proposals and technical reports

**Position Requirements:**

- PhD in at least one of the following areas: biomedical engineering, electrical/computer engineering, mechanical/mechatronics engineering, or computer science
- Strong expertise in at least one of the following areas: (i) development of sensor fusion and machine learning algorithms and/or (ii) hemodynamic and arterial compliance modeling for analysis and estimation of cuffless blood pressure
- Experience in developing medical-grade wearable technology and performing human participant experiments
- Ability to conduct research independently and collaborate with others to analyze and solve complex engineering/scientific problems
- Strong computational skills, including proficiency in MATLAB and/or Python
• Strong scientific communication skills, including publication record and conference presentations

**Position Information:**

Term: 1 year, with the possibility of extension  
Salary: $50,000-$60,000 CAD/year + benefits + conference travel  
Starting Date: As soon as possible on or after July 1.  
Application Deadline: Until filled (applications will be reviewed after May 26, 2023)

**Applications:**

To apply, please send your cover letter, CV, a list of three referees, and contact details to Dr. Carolyn Weeks-Levy at cweeksle@sfu.ca. Only those short-listed will be contacted.

**Simon Fraser University.** SFU is Canada’s leading comprehensive university, ranked number one for innovation in Canada and number one in the world for our entrepreneurial spirit. Defined by innovative education, cutting-edge research and far-reaching community engagement, SFU values a healthy work-life balance, professional growth and development. Working alongside academic and industry leaders in the competitive landscape of technology that empowers human potential, one of SFU’s latest entrepreneurial initiatives is WearTech Labs. SFU is an institution whose strength is based on our shared commitments to diversity, equity and inclusion. SFU is committed to ensuring that no individual is denied employment opportunities for reasons unrelated to ability or qualifications. Consistent with this principle, SFU will advance the interests of underrepresented members of the workforce, including Indigenous peoples, persons with disabilities, racialized persons, and women; embrace gender and sexual diversity; ensure that equal opportunity is afforded to all who seek employment at the University; and treat all employees equitably. Candidates that belong to underrepresented groups are particularly encouraged to apply.

**WearTech Labs.** SFU’s WearTech Labs is a university core facility for the invention, research, development, and human user testing of wearable technologies. WearTech Labs is focused on the broadest definition of wearable technologies including fitness trackers, hearables, technical apparel, and wearable robotics, among many others. This state-of-the-art 10,000 square foot, $20 million facility has three primary labs to support key steps of hardware development, prototyping and beta testing. The ideation lab is a creative and collaborative space for product conceptualization, modeling, and simulation. The prototyping lab allows for ideation to move into rapid prototyping including 3D printers and other equipment for the design, fabrication, characterization, and testing of novel devices. The human performance lab offers a robust testing environment for product refinement and optimization—including biomechanical and physiological equipment deployed in gait, environmental, sleep and hearing sub-labs—for the development and testing of devices on human users.

**Medtronic Canada.** Medtronic Canada’s mission is “to contribute to human welfare by application of biomedical engineering in research, design, manufacture, and sale of instruments or appliances that alleviate pain, restore health, and extend life”. The company is focused on growth in the areas of biomedical engineering and actively support collaborations with other innovators in similar fields.