Postdoctoral Fellow | Anesthesiology, Pharmacology & Therapeutics

Job summary
The Digital Health Innovation Lab (DHIL) at the BC Children’s Hospital Research Institute (BCCHR) is seeking a full-time postdoctoral fellow, for an appointment of 2 years, to take a significant role within a new Perioperative Opioid Usage Quality Improvement project.

The project’s aim is to combine patient-oriented research approaches with machine-learning to improve treatment of post-surgical pain in children and adults. Most people addicted to opioids were initially exposed through the treatment of pain from trauma and/or surgery. Over the next two years, we plan to develop a system that will: firstly, risk-stratify children and adults before surgery, so that the time before surgery can be used to optimize the patient’s health to reduce persistent post-procedural pain; and, secondly, give clinicians actionable feedback on their practice, so they can improve their care, reduce their patients’ risk further, and help their patients recover more quickly from their procedure.

We are looking for a highly motivated, self-driven, and engaged candidate with experience and interest in big data, machine learning, predictive analytics, and/or population epidemiology to lead the data science and analytics component of our project, as well guiding tool evaluation in a clinical setting.

The position is available to a PhD trained individual with a desire to embrace the complexity of clinical research and to build technology-based solutions to improve the safety and quality of patients’ care. The successful candidate will need to demonstrate technical expertise, be able to collaborate with clinicians, patients, academic researchers, and industry partners, and have a keen interest in exploring advanced design, implementation, and evaluation skills.

Organizational status
The DHIL is a collaboration between the University of British Columbia Departments of Anesthesiology, Pharmacology & Therapeutics and Electrical and Computer Engineering. The Principal Investigator is Dr Matthias Görges, who is based on the BC Children’s Hospital campus. Study co-investigators are based at St Paul’s Hospital in downtown Vancouver. The majority of work will be conducted independently, but the successful candidate will work with the Principal Investigator, Co-Investigators, Research Coordinator, and other research staff at both sites. The work will also involve close collaboration with clinical and patient partners at both hospitals, as well as with industry partners.

Work performed
Primary activities will include

• Selection of patient risk factors and patient-reported outcome measurements/tools using a patient-oriented research approach.
• Epidemiological analysis/modeling of opioid usage and surgical procedures using population data to find additional risk factors and explore patterns of practice over time.
• Analysis of locally-collected clinical data to create patient-specific risk models for both adult and pediatric populations.

In addition, the Postdoctoral Fellow will be involved in

• Study design to evaluate tools and/or models in clinical settings; leading significant aspects of the research project, including organizing research assistants and staff to support collection of study data; conducting substantive, methodologically rigorous research analyses.
• Writing abstracts, reports, and scientific articles, and submitting to peer-reviewed journals; contributing to literature reviews and syntheses; presenting study results to the scientific community at national and international conferences.
• Identifying and pursuing secondary research projects and research funding; mentoring junior trainees and co-supervising staff in their contributions to the project; and collaborating with other research personnel, clinical collaborators and industry partners.
Qualifications
The successful candidate should be able to demonstrate evidence of:

- Strong data analytics and statistical analysis skills, including data management and programming using MATLAB, R, or Python.
- Applications of machine learning, big-data approaches, including strategies to overcome real-world problems, such as missing data; experience with healthcare data would be desirable.
- A doctorate degree in a relevant discipline, e.g., Clinical Informatics, Human factors engineering, Biomedical Engineering, Epidemiology, Biostatistics, or a related field.
- A strong publication record and excellent technical communication and interpersonal skills; knowledge of research processes, including the conduct of clinical studies; detail-oriented as well as high-level conceptual, analytical, and critical appraisal skills.
- Able to work independently, and solve technical and methodological problems that arise during the course of the research; be comfortable with change, and be adaptable as the project evolves; able to thrive in a collaborative team environment and work effectively with research personnel, clinicians, patients, industry partners.
- Personal motivation and self-management; able to take responsibility for meeting deadlines within timelines that are partially dictated by industry partners and clinicians; must exhibit a high level of professionalism, judgement, ethical conduct, discretion and diplomacy.

Contact
- Apply by email to Nicholas West (nwest@bcchr.ca), sending a curriculum vitae with all relevant employment and academic experience; 1-2 writing samples (publications) or a thesis chapter; names of three references; and a cover letter, noting research experience and interest in the position.

Funding
This fellowship is supported by MITACS and Careteam, and the selected candidate will receive CAD $50,000.00/year plus benefits.

Further Information
https://www.bcchr.ca/dhil

Review of applications will begin on July 15, 2020 and continue until the position is filled. The anticipated start date for this position is September 1, 2020 or upon a date to be mutually agreed.

The University of British Columbia is a global centre for research and teaching, consistently ranked among the top 20 public universities in the world. Since 1915, UBC’s entrepreneurial spirit has embraced innovation and challenged the status quo. UBC encourages its students, staff and faculty to challenge convention, lead discovery and explore new ways of learning. At UBC, bold thinking is given a place to develop into ideas that can change the world.

Our Vision: To Transform Health for Everyone.

Ranked among the world’s top medical schools with the fifth-largest MD enrollment in North America, the UBC Faculty of Medicine is a leader in both the science and the practice of medicine. Across British Columbia, more than 11,000 faculty and staff are training the next generation of doctors and health care professionals, making remarkable discoveries, and helping to create the pathways to better health for our communities at home and around the world.

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The Faculty - comprised of approximately 2,200 administrative support, technical/research and management and professional staff, as well approximately 650 full-time academic and over 9,000 clinical faculty members - is composed of 19 academic basic science and/or clinical departments, three schools, and 24 research centres and institutes. Together with its University and Health Authority partners, the Faculty delivers innovative programs and conducts research in the areas of health and life sciences. Faculty, staff and trainees are located at university campuses, clinical academic campuses in hospital settings and other regionally based centres across the province.

*Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person. All qualified candidates are encouraged to apply; however Canadians and permanent residents of Canada will be given priority.*

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