

Health Informatics Postdoctoral Fellowships – TRUSTSPHERE

(2 openings)

Posting expiry

Open until filled

Position summary

Drs. Amed, Portales-Casamar and Görge, based at BC Children's Hospital Research Institute (BCCHR) seek to recruit two postdoctoral fellows with expertise in informatics and data science to work with an interdisciplinary team of engineers, informaticians, clinicians, and industry partners on our BC Digital Technology Supercluster-funded project, TRUSTSPHERE.

In TRUSTSPHERE, we will create an integrated digital trust platform to transform research participation and data collection, initially in the context of health research (patient care for type 1 diabetes). Working at the forefront of digital health innovation, we will develop innovative ways to capture, transform, integrate, and make available clinical data for research purposes (applying methods from computer science and/or health informatics fields, for example). The ultimate aim is a trust framework that gives agency to (a) patients and families who want to donate data or participate in research, and (b) researchers who require a digital toolset with comprehensive data integration.

These two postdoctoral fellows will focus on different, complementary aspects of the project. They will benefit from being embedded in a multi-disciplinary team and gain experience working with academia and industry. The TRUSTSPHERE project provides a wide range of challenges and opportunities for honing sophisticated informatics skills and advanced knowledge in development of digital technologies.

We are looking for two highly-motivated, self-driven, and engaged candidates with PhD in relevant disciplines (e.g., computer science, informatics, engineering). An ideal candidate is committed to developing new technology-based solutions to improve the utility of human-donated data in research and, ultimately, enhance the safety and quality of human data use. Successful candidates will demonstrate technical expertise in health informatics and manipulation of data and have a keen interest in exploring advanced design and implementation strategies.

Organizational status

Led by Dr. Shazhan Amed, TRUSTSPHERE is a collaboration of researchers from three University of British Columbia Departments (Pediatrics; Anesthesiology, Pharmacology & Therapeutics; and Medical Genetics) with a consortium of industry partners.

Working primarily in the Digital Health Innovation Lab and clinical research informatics team at BCCHR, the postdoctoral fellows will be supervised and mentored by Dr. Elodie Portales-Casamar and Dr. Matthias Görge.

Work performed

The two postdoctoral fellows will lead workplans from among the following primary activities:

- Defining requirements for patient-provided data collection from personal devices (e.g. smartphones, wearables) and medical devices (e.g., continuous glucose monitoring systems, insulin pumps, etc.)
- Developing an integrated data model that balances requirements from both participant perspective (e.g. data characteristics such as privacy concerns) and researcher perspective (e.g. utility, availability, volume, and sensitivity of data)
- Guiding the development and validation of interfaces to extract data from such sources and devices, to map variables into standardized terminologies (e.g. SNOMED-CT), and create the tools that transform data into harmonized data formats
- Developing simplified researcher access models to the donated data



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- Investigating the optimal methodology and developing a data repository that enables streamlined data analytics for future cross-disciplinary bench-to-bedside-to-health systems research applications
- Defining requirements for a results-sharing platform, to be integrated into a mobile research application, to increase research participation and family engagement

Each postdoctoral fellow will also gain experience and professional skills through involvement in:

- Multidisciplinary collaborations with other researchers, clinical collaborators, and industry partners.
- Mentoring of junior trainees and co-supervising research staff working on the project.
- Knowledge exchange and dissemination. Fellows will be the first authors of journal papers (in both the engineering/computer science and healthcare domains) and present their work at scientific conferences, where they can extend their professional networks, and to community partners.
- Designing, implementing, and sharing data integration and analysis source code.
- Writing ethics applications and final reports, and finalizing project deliverables.
- Identifying and pursuing secondary research projects and funding, where appropriate.

Qualifications

The successful candidates should demonstrate evidence of:

- A doctorate in a relevant discipline, e.g., Computer Science, Health Informatics, Biomedical Engineering, Bioinformatics, Applied Statistics, or equivalent.
- Experience with applications of health informatics, including strategies to overcome real-world problems, such as the application of data ontologies and API development, or the implementation of integrated data repositories; experience with clinical/healthcare data would be desirable.
- Experience with software development for (critical) healthcare systems and evaluation of such applications, including data systems (ranging from RDBMS to flat-file systems), health data models (OMOP, PCORNet), health data standards (ICD, HL7, SNOMED-CT), and medical device interoperability.
- Ability to work independently, and solve technical and methodological problems that arise during the course of the research; comfort and adaptability with change as the project evolves.
- Ability to thrive in a collaborative team environment and work effectively with research personnel, clinicians, patients, and industry partners.
- A strong record of publications and presentations; excellent technical communication skills.
- Understanding of research ethics and integrity, including conduct of clinical studies.
- Excellent interpersonal skills; ability to think conceptually and be detail-oriented; outstanding analytical and critical appraisal skills.

Contact

Apply by email to Ms. Bonnie Barrett (bbarrett@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. All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

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 BC 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.



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Funding

This fellowship is supported by MITACS and a consortium of industry partners. The stipend is CAD \$60,000/year including benefits.

Further Information

<https://www.digitalsupercluster.ca/programs/precision-health/trustsphere/>

