To: [Various PHC Areas Using Image-Guided Therapy (IGT]
From: Providence Health innovation Research + Engagement (PHIR+E), Providence Research & Innovarium
Date: October 15, 2024
Subject: PHIR+E's Health Technology Innovation Program: Collaborate for Health Technology Innovation!

Are You a Physician Working in the Field of IGT? Receive Expert Support to Enhance Patient Outcomes Through Health Technology Innovation.

If you're passionate about fostering collaborative relationships and have a keen interest in innovation, design thinking, and entrepreneurship, we invite you to apply with at least one Physician Resident to gain specialized support in identifying and validating clinical problems and developing effective solutions using IGT.

What is This Health Technology Innovation Program?

This is a hands-on, team-based training program in health technology innovation at Providence Health Care hospitals. This initiative equips professionals in engineering, life sciences, and business with the skills to address real clinical challenges and develop innovative medical technologies, guiding them from identifying unmet needs to creating prototypes. Additionally, it empowers physicians and residents to transform clinical challenges into actionable solutions. The pilot project will commence in early 2025 and will involve collaboration among engineers, Physician Clinical Mentors, and Physician Residents.

This program, established by PHIR+E, a core element of the Innovarium initiative, is connected to the INOVAIT network. INOVAIT, funded by Innovation, Science and Economic Development Canada's Strategic Innovation Fund, is operated by Sunnybrook Research Institute (SRI). The network bridges research and real-world healthcare applications, fostering partnerships that turn innovation into practical solutions. It also includes key programs in Toronto and Atlantic Canada.

A Proven Path to Progress

Having become nationally recognized for transforming innovative concepts into clinical breakthroughs, the program harnesses the power of IGT and Artificial Intelligence (AI) to deliver practical healthcare solutions. Recent outcomes include a prototype of a novel CPR device for Catheterization Labs, which integrates high-quality compressions with advanced imaging systems to enhance critical care, as well as a catheter device that significantly improves precision in navigating complex chronic total occlusions.

Key Benefits for Participants

Designed to empower PHC physicians and residents to turn clinical challenges into actionable prototypes. The program integrates with Innovarium's offerings and taps into PHC's expertise, including AI insights from Health Informatics, intellectual property management with PHC Ventures, and specialized knowledge in Clinical Operations and Risk Management.

Participants in the four-month program will benefit from:

Focused & Specialized Support: A dedicated engineering graduate student working to advance new concepts and uncover translational research opportunities in healthcare and an extensive network of expertise throughout the development process, including academic partners BCIT MAKE+ and the UBC School of Biomedical Engineering.

Actionable Prototyping: Systematic approach to clinical needs finding, ideation and invention of novel medical technologies guides ideas toward real-world impact, ensuring that innovative concepts are effectively transformed into practical applications.

Access Innovation Resources: A curriculum tailored for Medical Device Development and Commercialization, providing specialized training and practical skills essential for real-world applications.

Targeted Networking: Engage with industry experts, build relationships with top innovators, and network with healthcare leaders through INOVAIT and leverage the extensive expertise available within the Innovarium ecosystem.

What to Expect

The four-month program is structured into three key phases:

Phase 1: Clinical Needs – January/February 2025 (6-8 weeks)
In this phase, the Physician Resident is oriented and mentored in clinical settings to identify real-world challenges. The focus is on assessing and validating key issues. Deliverables include a comprehensive needs statement and a specification report for the selected clinical problem.

Phase 2: Ideation & Concept Development – March 2025 (3-4 weeks)
A dedicated engineer will help advance new concepts and explore translational research opportunities. Participants will leverage an extensive network of expertise, including academic partners from BCIT MAKE+ and UBC School of Biomedical Engineering, as well as advisors from various PHC disciplines.

Phase 3: Prototyping & Evaluation – April/May 2025 (4-6 weeks)
During this phase, the engineer, Physician Clinical Mentor, and Physician Resident(s) collaborate to develop a prototype for a new medical technology. The goal is to translate the concept into a functional prototype using relevant tools and techniques. Intellectual property protection processes may begin towards the end of this phase. The Physician Resident will also evaluate the prototypes, incorporate feedback, and present their work.

Physician Clinical Mentor Expectations:

- Commit approximately 6-7.5 hours per week over four-months.
- Participate in the selection process and appointment of a Physician Resident.
- Meet bi-weekly with Physician Residents to provide supervision, feedback, and guidance on various project aspects.
- Assist in identifying areas with potential clinical problems.
- Accompany and guide clinical observations in various clinical settings.
- Share clinical knowledge, wisdom, skills, and expertise to influence healthcare innovation.

Physician Resident Expectations:

- Commit approximately 6-7.5 hours per week over four-months.
- Perform observations in various clinical settings to identify and document clinical challenges that impose significant burdens.
- Conduct a thorough analysis of the identified problems, including stakeholder and market analysis, as well as a study of disease state fundamentals and treatment options.
- Perform research, including consultations with faculty, literature reviews, and patent searches.
- Collaborate to assess the feasibility of the medical solution concept and translate it into a prototype, focusing on design requirements and technical specifications.

How to Apply

- We ask that Physician Clinical Mentors apply with at least one Physician Resident.
- Please complete the Program Intake Form by **Friday, November 8th, 2024.**
- Applicants can expect follow-up by **late November.**

For more information about this program or any other questions, please contact **Kaylie Friess** at KFriess@providencehealth.bc.ca

Please note: We are actively collaborating with internal stakeholders to refine and finalize preparations for the program launch. Official dates will be announced upon finalization of the agreement. Your input and guidance are both welcome and appreciated.

Supported by Innovarium, Providence Health Care's innovation engine that connects people, systems, infrastructure, and partners to accelerate health innovation. ***Learn more at innovarium.org***