

**MEMORANDUM**

ATTENTION Senate **DATE** January 14, 2025
FROM Dilson Rassier, Provost and Vice-President **PAGES** 1/24
Academic, and Chair, SCUP
RE: Establishment of the i2I Research and Innovation Institute (SCUP 25-03)



At its meeting on January 8, 2025, SCUP reviewed and approved the establishment of the i2I Research and Innovation Institute for a five-year term.

Motion: That Senate approve the establishment of the i2I Research and Innovation Institute for a five-year term.

C: Valorie Crooks, Associate Vice-President, Research
Elicia Maine, inaugural Director, i2I Research and Innovation Institute, and Associate Vice-President, Knowledge Mobilization and Innovation

Memorandum

From: Valorie Crooks, Associate Vice-President, Research Date: December 6, 2024
Re: Establishment of the i2I Research & Innovation Institute
To: Dilson Rassier, Chair, *Ex-officio*, Senate Committee on University Planning (SCUP)

Alkaline soil

Valerie Codd

Attached is a proposal for the establishment of the i2I Research & Innovation Institute (the “**institute**”). The proposal is led by the inaugural Director, Dr. Elicia Maine, W.J. VanDusen Professor of Innovation & Entrepreneurship, SFU Beedie School of Business and Associate Vice-President, Knowledge Mobilization & Innovation (AVPKMI), Office of Vice-president, Research and Innovation, SFU.

As stated in the application, the i2I Research & Innovation Institute will support the national i2I Network, which recently received \$23M funding from the NSERC Lab to Market grant competition.

By establishing this institute, SFU will be positioned as a national leader in entrepreneurial training and innovation, while amplifying its leadership on a national scale. The institute's mission is to strengthen the continuum of fundamental research to economic, social and environmental impact by developing the entrepreneurial mindset and innovation skillset of STEM researchers in postsecondary institutions across Canada. Creation of this institute aligns with SFU's Strategic Research Plan (SRP) for 2023-2028 through several related core values, approaches and priority areas. For example, it aligns with the SRP goals related to innovation and adaptability, knowledge mobilization, interdisciplinary collaboration, and supporting early career researchers. The institute aligns with SRP priority areas such as: Transforming Industry and Economies through Technology; Supporting Health and Wellness; Strengthening Democracy, Justice, Equity and Social Responsibility; and Engagement with Communities and Partners.

I recommend approval for establishment of the i2I Research & Innovation Institute as a Research Institute according to Policy R40.01.

Motion:

To approve the establishment of the i2I Research & Innovation Institute for a 5-year term.

Attachment(s):

1. i2I Research & Innovation Institute Application
2. Letter of support from the Dean pro tem of Beedie School of Business

SFU RESEARCH INSTITUTE APPLICATION

NAME OF INSTITUTE:

i2I Research & Innovation Institute

DESCRIPTION OF PROPOSED INSTITUTE:

Please include a statement of the Research Institute's special purpose and how its work aligns with University priorities and the VPRI Strategic Research Plan.

The i2I Research & Innovation Institute will provide a home for the national i2I Network which recently received \$23M in funding from the NSERC Lab to Market grant competition. As the lead institution of the national i2I Network, SFU will gain reputational benefit and recognition for thought leadership recognition.

The i2I Research & Innovation Institute will implement and deliver tailored Invention to Innovation (i2I) entrepreneurial training programs that equip scientists and engineers across Canada with entrepreneurial and commercialization mindset and skills to strengthen regional and national innovation performance. The Institute will also serve as a national centre of excellence for studying and fostering entrepreneurial capacity, supporting the translation of research into impactful innovations, and bridging the gap between fundamental research and the impactful mobilization of that research.

The institute's mission is to strengthen the continuum from fundamental research to economic, social and environmental impact by developing the entrepreneurial mindset and innovation skillset of STEM researchers in postsecondary institutions across Canada.

Through the [national i2I Network](#), SFU's Research & Innovation Institute is focused on delivering a suite of entrepreneurial programs (Figure 1) and on researching science innovation, including action research on the impact of the i2I program suite. Both i2I programs and i2I research align closely with the university's Strategic Research Plan (SRP) for 2023-2028 through several core values, approaches, and priority areas:

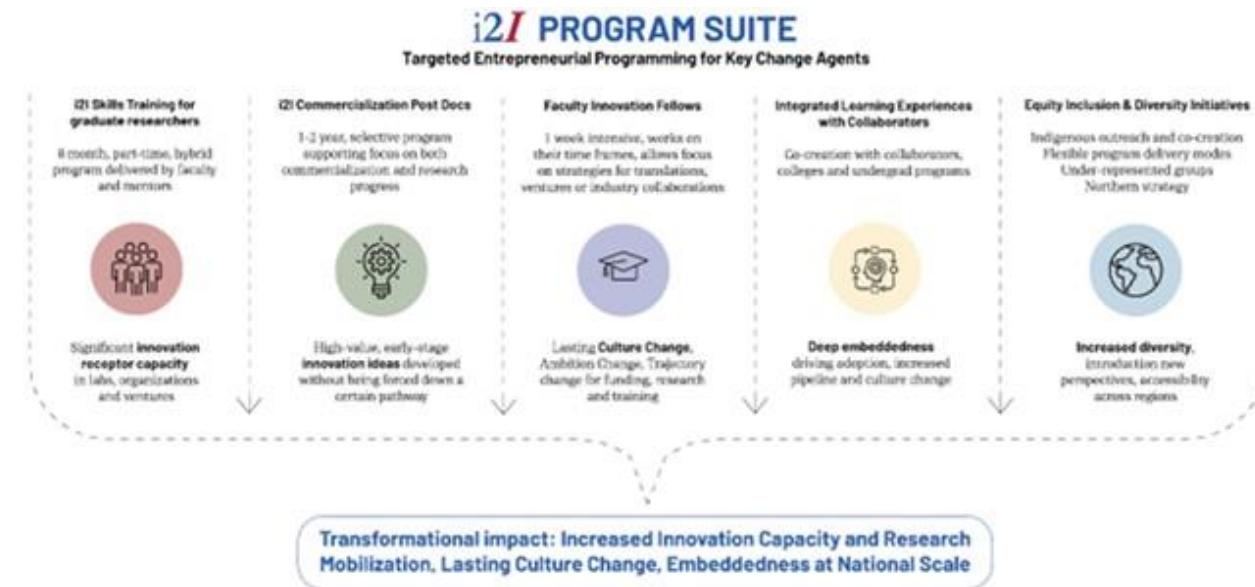


Figure 1: Proposed i2I Program Suite to Serve Diverse Communities and Key Change Agents

Innovation and Adaptability: The i2I program suite embodies SFU's commitment to fostering innovation by training researchers to commercialize their ideas and bridge the gap between fundamental research and the impactful mobilization of that research. Building on the award-winning pedagogy of the Mitacs i2I program and SFU Beedie School of Business accredited invention to innovation (i2I) graduate certificate program, our research and education team will create a framework to identify, develop, and measure competencies within the broader categories of Adaptability and Creativity & Innovation, such as:

- Perceiving unmet market needs
- Evaluating unmet market needs in relation to researcher's (or researcher's organization's) capabilities and resources
- Prioritizing market opportunities
- Enacting decisions that turn uncertainty into opportunity
- Revising value proposition
- Adapting business model and commercialization strategy
- Creating and capturing value

Knowledge Mobilization: The i2I program suite facilitates the translation of research into impactful economic, environmental and/or societal solutions, aligning with SFU's priority of ensuring research reaches relevant communities through mechanisms such as new product development, company creation, and commercialization efforts.

Interdisciplinary Collaboration: By involving researchers across various disciplines and sectors, and partnering with industry, health institutes, and academic collaborators, the program reflects SFU's support for interdisciplinary research and partnerships.

Supporting Early Career Researchers: The program's commercialization postdoctoral fellowship and faculty innovation intensive directly addresses the SRP's call to support early-career researchers, providing them with the tools and training necessary to become future leaders in research and innovation.

Priority Areas Alignment:

Transforming Industry and Economies through Technology:

The i2I program suite directly supports this priority by equipping researchers with entrepreneurial mindset and innovation skills to bring technologies out of the lab and into economic, social and environmental value creation.

Supporting Health and Wellness:

With its focus on translating research into solutions, including in health and wellness domains, the program contributes to SFU's aim to address public health challenges through innovative research. Institute members will include innovation leaders from the Fraser Health Authority (and the soon-to-launch Fraser Health Research Institute) and the Providence Health Care Research Institute.

Strengthening Democracy, Justice, Equity, and Social Responsibility:

The i2I Research & Innovation Institute is committed to engaging with diverse communities and maintaining a strong emphasis on equity, diversity, and inclusion, which resonates with this priority area of the SRP. The institute incorporates an actionable plan to overcome systemic and regional barriers for Indigenous, Northern, remote and French-speaking communities, by providing predominantly asynchronous online delivery of customized training, stipends to enable the participation of underrepresented communities and by drawing on its deep relationships with co-applicants and collaborating organizations. *The Equity, Diversity, Inclusion, and Indigenization (EDII) Action Plan* includes establishing an EDII committee and appointing an EDII Chair. Each i2I program (including selection, delivery and award processes) will be assessed on the ratio of participants from various underrepresented groups based on participant self-identification. The composition of all i2I committees and faculty and mentor selection will be monitored to ensure EDII representation. The dissemination of i2I commercialization outcomes will be informed by IP mechanisms currently available through the Stó:lō Research and Resource Management Centre to facilitate commercialization while protecting Indigenous IP, including place-based knowledge.

Engagement with Communities and Partners:

Through its collaborations with industry, health institutes, government laboratories, research centres, and other academic institutions, the i2I program reinforces SFU's mission of engaging external partners to enhance research impact. The vision of the national i2I Network to mobilize fundamental research relies on the active engagement and demonstrated commitment of **collaborating organizations** which represent some of Canada's leading science research and innovation stakeholders. Collaborating Organizations provide differentiated On-Ramps and Off-Ramps, tightly integrating pre-eminent research On-Ramps to established Off-Ramps (Figure 2).

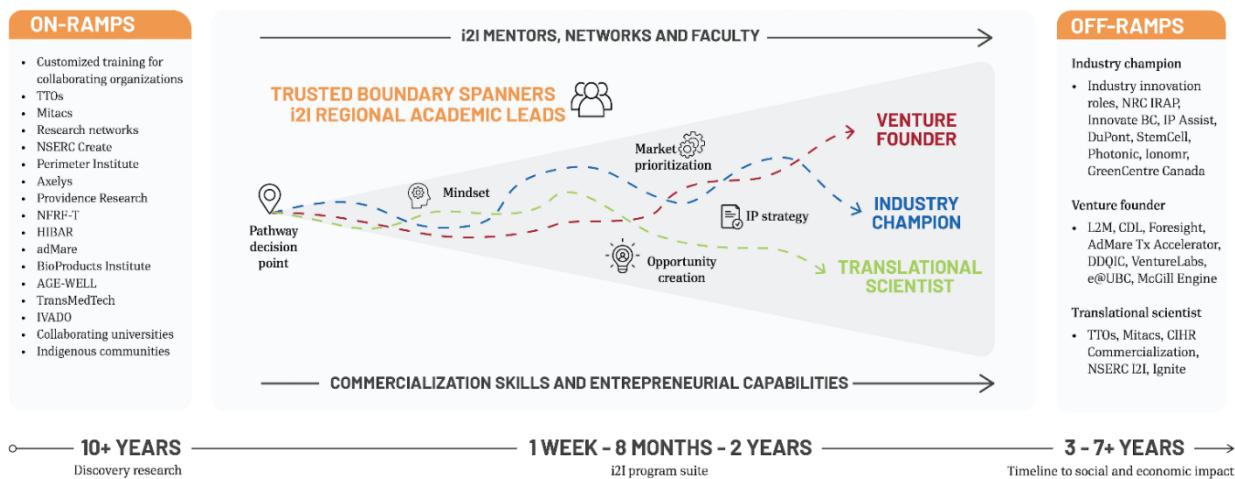


Figure 2: i2I Network: The Missing Link between Canadian Research and Innovation

By aligning with these strategic goals and areas, the i2I Research & Innovation Institute not only advances SFU's research capabilities but also strengthens its role as a leader in mobilizing knowledge for societal and economic impact.

Relevance and Benefits. The i2I Research & Innovation Institute will coordinate regional efforts to drive innovation, foster economic resilience, and position Canada as a leader in key global emerging industries. Its mission is built on the following pillars:

- Strengthen linkages across sectors along Canada's innovation continuum through its collaborative approach that brings together academia with regional and national innovation ecosystem partners, creating a robust and interconnected innovation ecosystem.
- Build innovation capacity within industry, deploying graduates with entrepreneurial and commercialization mindset and skills to dramatically enhance the ability of Canadian companies to drive and adopt new technologies, while building bridges back to academic labs to both inform and benefit from research.
- Establish a new and lasting culture of entrepreneurship and innovation at our research institutions, universities and colleges through graduate student, postdoc, and faculty innovation training. By integrating entrepreneurial approaches into their supervision and training at all levels (from undergraduate training to postdoc supervision), institutions will foster a long-term, substantial cultural shift within Canadian academia.

RATIONALE FOR ESTABLISHING THE INSTITUTE:

Please include statements on the added value to the research collaborative and to the University in receiving this designation, as well as, any potential societal impact (beyond what would be accomplished by individual faculty members).

The i2I Research & Innovation Institute will function as a national centre of excellence for the national i2I Network, which recently secured \$23M through the NSERC Lab to Market grant competition. Establishing this institute at SFU,

the lead institution of the national i2I Network, will enhance SFU's reputation, positioning it as a leader in entrepreneurial training and innovation, while amplifying its thought leadership on a national scale.

Canada's record in invention is world-class but for decades we have lagged in translating those inventions into innovation. Innovation occurs when an invention is mobilized through adoption in a value-adding commercial application which may also create social value [1]. There is growing evidence that fundamental research inventions can be shaped into impactful innovation through early stage targeted entrepreneurship training for researchers in STEM, health science and other fields serving or benefiting from deeptech research [2-6]. The recent Bouchard report is clear: "Researchers with entrepreneurial skills are a critical enabler of knowledge mobilization, from scientific entrepreneurship to industry research" [7]. This requires (1) development of a more entrepreneurial mindset and innovation skills, particularly at the early stage of a researcher's career, (2) culture change within universities and research institutes, and (3) inclusive access to high quality training to help transform their research into a solution for the market. The *Invention to Innovation (i2I) Network* will fill precisely this gap in Canada with its unique and internationally recognized pedagogy and programming, that deeply understands and works with (and for) the researchers involved.

Unlike entrepreneurship training programs that are add-ons to the research process and focus primarily on venture creation, i2I is deeply embedded within the research ecosystem and works with researchers while in the lab, clinic or research institute to support their journey along the program's identified pathways to emerge as **translational scientists, venture founders or industry champions** (Figure 2). Graduate researchers have often spent years being trained to think like scientists and they are steeped in a culture that either does not support or actively discourages venture-centric entrepreneurship [8-12]. i2I uniquely cultivates and engages science innovation faculty as "trusted-boundary spanners" and embeddedness with the research community to **open doors and minds otherwise closed to entrepreneurship**. Many programs wait until technology reaches a certain maturity and many researchers delay exploring entrepreneurship until their research is more advanced. This approach overlooks the **critical role researchers can play to shape innovation potential while still in the lab**. The well-established i2I program is revolutionary in its intentional and tailored support of three career pathways, rather than focusing solely on venture creation, fostering a thriving science innovation ecosystem that drives innovation within academia and industry, in addition to nurturing startups. With NSERC Lab to Market funding, the mindset of thousands of Canadian researchers and trainees will be shaped by this innovation training, through primary and secondary impact, with transformational experiences for core i2I programming trainees, faculty and commercialization postdoctoral fellows. Simultaneously, the commercialization strategy of breakthrough lab research will be shaped to create the companies and products that would not have otherwise existed [4,5,13,14].

PRIOR TO APPLYING FOR RESEARCH INSTITUTE STATUS, MEMBER OF RESEARCH INSTITUTES SHOULD NORMALLY HAVE A HISTORY OF COLLABORATIVE ACTIVITY AS A GROUP.

The award-winning Invention to Innovation (i2I) graduate certificate program was founded in 2015 by Prof. Elicia Maine at SFU's Beedie School of Business. It recognizes that over 80% of university PhD and postdoc students will not become tenured professors, but with the right training, these talented researchers can catalyze their own careers and the translation of Canada's world class research into impactful innovation. And those who become professors shape culture and research trajectories for decades. In 2019, SFU and Mitacs launched the Mitacs i2I Skills Training across Canada, which over 5 years has trained 22 cohorts of students from 30 universities across the country, and continues to grow through partnerships with other leading universities, including Queen's U., Waterloo, and Laval, and through more inclusive outreach to a broader range of ecosystem players with customized and intensive training programs.

The regional academic leads of the SFU-led national i2I Network will all be invited to be members of the i2I Research & Innovation Institute. Moreover, over the past decade, several SFU faculty members from Faculties of Science and Applied Sciences have actively engaged in innovation research and innovation training for their own development and/or for their graduate students and postdocs. These include Prof. Stephanie Simmons, Prof. Erol Girt, Prof. Majid Bahrami, Prof. Faisal Beg, Prof. Samira Siahrostami, Prof. Steven Holdcroft, Prof. Erik Kjeang, Prof. Peter Unrau, Prof. Robert Britton, Prof. David Vocadlo, Prof. Max Donelan, Prof. Neil Branda, Prof. Hogan Yu, Prof. Gary Leach and Prof. Zuo-Guang Ye. These efforts have fostered a collaborative research environment resulting in

interdisciplinary research publications co-authored by SFU professors and their co-supervised graduate students [15, 16]. Moreover, seed funding from programs such as Mitacs, NFRF Transformation - Mend the Gap, NSERC CREATE projects and NRC IRAP have been instrumental in supporting these collaborative and interdisciplinary research activities. A significant institutional 5-year grant, contingent upon the establishment of an institutional governance structure, further highlights the strategic importance of these initiatives.

IF THE OBJECTIVES OF THE PROPOSED INSTITUTE OVERLAP WITH AN EXISTING RESEARCH CENTRE OR INSTITUTE, PLEASE PROVIDE EVIDENCE OF CONSULTATION WHERE A POTENTIAL CONFLICT HAS BEEN IDENTIFIED.

Not applicable.

PROPOSED DIRECTOR(S):

Please include a statement on the provision for the appointment of the Director.

Elicia Maine, W.J. VanDusen Professor of Innovation & Entrepreneurship, SFU Beedie School of Business and Associate Vice-President, Knowledge Mobilization & Innovation (AVPKMI), VPRI SFU

The Director will be responsible for leading the institute's strategic direction, and chairing the National Leadership Team which oversees programs delivery, partnerships with co-applicants and collaborating organizations, and action research on science innovation ecosystem. The Director will play an active role in fostering collaborations across academia, industry, and other ecosystem partners to achieve the institute's goals. SFU has committed 20% of the time of the AVPKMI to leadership of this i2I Research & Innovation Institute.

INTERNAL GOVERNING PROCESS AND ORGANIZATION STRUCTURE:

The national i2I Network will be housed within the SFU Research & Innovation Institute which is governed by an Oversight Council and ultimately reports to SFU Senate through an annual report to SFU's Vice-President, Research and Innovation. The national i2I Network's governance structure emphasizes our commitment to co-creation and co-development of customized science innovation and entrepreneurship programming and supports with our co-applicants and collaborating organizations, including renowned research institutes, Indigenous-led organizations, and private and public sector partners from diverse geographies.

The i2I Research & Innovation Institute will serve as the nerve centre for **i2I National Operations**, running programming through learning management systems, coordinating program delivery, delivering continual curricular improvements and guiding strategic direction for the i2I Network with specific input from the Regional and Academic leads.

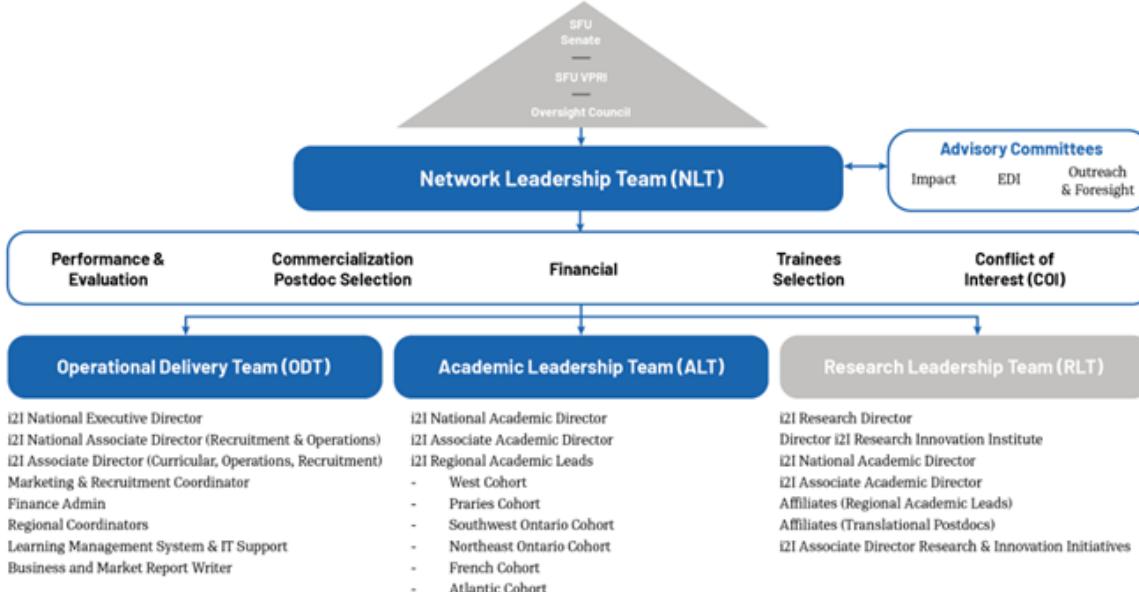


Figure 3. i2I Network Governance Structure

Oversight Council (consisting of the members highlighted in bold in the Membership table): Meeting each semester and chaired by SFU's Vice-President, Research and Innovation, the OC will consist at least eight SFU faculty members or Deans from multiple faculties at SFU and by external leadership from other academic and Health Research Institute partners across Canada (i.e., Queen's, Waterloo, Laval, UNBC), Collaborating Organizations, and Indigenous and EDII representatives. The OC will be the governing body which ensures that the **National Leadership Team** (NLT) is meeting all of its commitments and will make strategic decisions regarding changes in scope, geographical focus, and changes in executive leadership or organizational structure.

The NLT, reporting to the VPRI and accountable to the OC, includes:

- **Dr. Elicia Maine, (SFU) Chair and Director of the i2I Research & Innovation Institute**, SFU Associate VP Knowledge Mobilization & Innovation. Dr. Maine founded the i2I program, developed the i2I Lab to Market course, and co-supervises the i2I Commercialization Postdocs.
- **Dr. Sarah Lubik (SFU), i2I National Academic Director**, Dr. Lubik developed and teaches the i2I Business Model course and expanded the Mitacs i2I Network nationally including developing the Francophone cohort and deepening relationships with ecosystem partners.
- **Dr. Jim McLellan, (Queen's U.) i2I Associate Academic Director, Regional Academic Lead for East Ontario** and Prof. in Chemical Engineering is the Academic Director of the Dunin-Deshpande Queen's Innovation Centre. He led the expansion of the Mitacs i2I Network to Ontario, teaches the i2I Business Model course, and co-supervises the i2I Commercialization Postdocs.
- **Dr. Jon Thomas (UFV), EDII Lead, i2I Research Director & i2I Faculty** and Director of the Esposito Family Centre for Innovation & Entrepreneurship, is the BC Regional Innovation Chair in Canada-India Partnership Development at UFV. Dr. Thomas teaches the i2I Lab to Market course and has shaped the i2I's Commercialization Postdoc program.

The NLT's primary role is to oversee the network activities and strategic partnerships with co-applicants and collaborative organizations. Meeting weekly, the NLT will ensure all aspects of program advancement, key training initiatives and collaborations with partners and communities are progressing as planned. The NLT will form the following sub-committees, comprised of NLT members, representatives of co-applicant organizations, Advisory Committee members, Academic Regional Leads and other Network members:

- *Performance & Evaluation*, overseeing development and implementation of the Performance Measurement/KPI Framework.
- *Financial*, ensuring funding and expenses follow principles of responsible stewardship of funds and public accountability and transparency best practices.
- *Commercialization Postdoc Selection*, selecting high-quality and diverse candidates.
- *Trainee Selection*, implementing equitable selection practices to recruit over 50% of participants from underrepresented groups, and designing and delivering workshops on EDII best practices.
- *Conflict of Interest (COI)*, developing and implementing a policy and resolution procedure within Y1.

The **Academic Leadership Team (ALT)** consists of all Regional Academic Leads at co-applicant institutions. Meeting bi-weekly, the ALT will lead program delivery and ecosystem building. Each regional lead institution will support the annual delivery of one i2I program cohort, explore opportunities for co-creation, assess and refine complementary or customized intensive programming, and share best practices and lessons learned. These regional leads will build relationships with other higher education institutions in their regions, facilitate research collaborations, recruit mentors and serve as connectors to i2I's expanding national and international network of collaborating ecosystem partners.

The **Operational Delivery Team (ODT)**, as per Figure 3, is led by a full-time *National Executive Director*. This team will manage day-to-day operations nationally, oversee curricular development, coordinate operations, support recruitment efforts and execute marketing and outreach activities, including effective communication for Francophone participants. This team will also lead financial aspects and reporting. Regional coordinators at partner institutions will ensure effective local implementation.

The **Research Leadership Team (RLT)** is responsible for conducting science innovation and science entrepreneurship research and incorporating it into the pedagogy of the i2I Network programming. The RLT will be supported by a Translational Grant Writer (in-kind from SFU) who will assist them with funding applications to sustain research and thought leadership, including programs such as SSHRC Partnership Grants, Horizon Europe, and philanthropic funding. The costs of the RLT are all funded from sources other than the NSERC Lab to Market grant.

Three **Advisory Committees** will be established. Typically, the VP Research or AVP Innovation at co-applicant institutions will be represented along with the CEOs or VP Innovation of collaborating organizations, science innovation ecosystem experts, Indigenous communities and STEM and health science subject matter experts. These committees will advise the NLT on implementation and delivery of traditional and non-traditional outputs, as well as ways to overcome institutional barriers and siloes.

- **Impact:** Meeting annually, this committee provides regional, national and international perspectives on the excellence of training and support provided as well as the relevancy of outputs. It provides feedback on impacts to-date, long-term sustainability strategy and strategies to drive partner engagement and growth.
- **Outreach & Foresight:** Meeting once per semester, this committee recommends researchers, postdocs, mentors, and industry partners for the development expansion and continuous evolution of the i2I Network and programming.
- **EDII:** Meeting bi-annually and chaired by the EDII Lead, this committee oversees the implementation of the i2I Network EDII Plan developed during the pilot phase. This includes ensuring active engagement of members of underrepresented groups with particular focus on women and Indigenous communities and to address barriers to inclusion.

Strategic planning and decision-making. The progress of the i2I Network will be assessed according to the milestones & KPIs in Table 3 and guided by an implementation plan to be developed by the NLT and ODT (in consultation with the Advisory Committees and the ALT) in year one of the grant funding, that will include further key milestones, metrics and deliverables over the 5-year funding period. A majority vote of the NLT is sufficient to proceed with an annual implementation plan, but requires annual majority votes of endorsement from the Oversight Council, Advisory Committees, and ALT to continue. Accordingly, this plan will be reviewed on annual basis to assess progress achieved to date, address any challenges or gaps, and to inform the updating of annual workplans accordingly.

An annual meeting of i2I Network members including all co-applicant and delivery partners will be held to review progress, engage in strategic planning and shared decision-making. Majority vote from the ALT will be required to endorse annual plans. These plans, along with the report from the previous year, will be presented to the Oversight Council. Annual reporting will be reviewed by the SFU VPRI and the SFU Senate.

MEMBERSHIP:

Name	Position	Department / School	Faculty	Institution
Sarah Lubik	National Academic Director i2I Academic Director Chang Institute Director of Entrepreneurship at SFU	Beedie School of Business	Faculty of Business	SFU
Terri Griffith	Keith Beedie Chair in Innovation & Entrepreneurship	Beedie School of Business	Faculty of Business	SFU
Andrew Gemino	Associate Dean, Executive Education	Beedie School of Business	Faculty of Business	SFU
Angela Brooks-Wilson	Dean, Faculty of Science	Biomedical Physiology & Kinesiology	Faculty of Science	SFU

Eugene Fiume	Dean, Faculty of Applied Science	Computing Science	Faculty of Applied Science	SFU
Steven Holdcroft	CRC Tier 1 Clean Hydrogen Hub Scientific Director	Department of Chemistry	Faculty of Science	SFU
Samira Siahrostami	CRC Tier 2	Department of Chemistry	Faculty of Science	SFU
Neil Branda	CRC Tier 1 4D Labs Scientific Director	Department of Chemistry	Faculty of Science	SFU
Max Donelan	Professor WearTech Labs Scientific co-Director	Biomedical Physiology & Kinesiology	Faculty of Science	SFU
Ed Park	Professor WearTech Labs Scientific co-Director	School of Mechatronic Systems Engineering	Faculty of Applied Sciences	SFU
Sami Khan	Assistant Professor	School of Sustainable Energy Engineering	Faculty of Applied Sciences	SFU

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ORGANIZATION STRUCTURE:

Refer to the INTERNAL GOVERNING PROCESS AND ORGANIZATION STRUCTURE section above.

PROCEDURES FOR RATIFYING NEW MEMBERS:

Researchers interested in joining the i2I Research & Innovation Institute can apply to become a member or affiliate. The National Leadership Team reviews new membership proposals on a monthly basis. Endorsed candidates are proposed by the Director to the Oversight Council during its semesterly meetings, where a majority is required to approve the addition of new members or affiliates of the i2I Research & Innovation Institute.

AFFILIATES:

Name	Position	Department / School	Faculty	Institution
Darryl Knight	Vice President of Research and Academic Affairs President Providence Research Associate Dean Research	Department of Anesthesiology, Pharmacology & Therapeutic	Faculty of Medicine	Providence Health Care Providence Health Care Research Institute

				University of British Columbia
Jon Thomas	Associate Professor Director of the Esposito Family Centre for Innovation & Entrepreneurship	School of Business		University of the Fraser Valley
James McLellan	Professor Academic Director of the Dunin-Deshpande Queen's Innovation Centre	Chemical Engineering	Faculty of Applied Science	Queen's University
Valerie Ward	CRC Tier 2	Chemical Engineering Department	Faculty of Engineering	University of Waterloo
Tony Briggs	Executive Professor	Department of Strategy, Entrepreneurship and Management	School of Business	University of Alberta
Fabiano Armellini	Professor	Department of Mathematical and Industrial Engineering		Polytechnique Montreal
Sophie Veilleux	Professor Directrice du Centre de recherche en entrepreneuriat international	Department of Management	Faculty of Business Administration	Universite Laval
Carlos Bazan	Associate Professor		Faculty of Business Administration	Memorial University of Newfoundland
Aaron Newman	Professor and Chair	Department of Psychology and Neuroscience	Faculty of Science	Dalhousie University
Andrew Park	Assistant Professor	Gustavson School of Business		University of Victoria
Paula Wood Adams	Vice-President, Research and Innovation	Office of Research and Innovation	Faculty of Science & Engineering	University of Northern British Columbia
Fraser Hof	Associate Vice-President Research	Office of the Vice-President Research & Innovation	Faculty of Science	University of Victoria

Michelle Chretien	Vice president, Research & Innovation			Conestoga College
Ridha Ben Mrad	Professor Chief Research Officer and Associate Academic Director of Mitacs	Department of Mechanical & Industrial Engineering	Faculty of Applied Science & Engineering	University of Toronto

TRAINING AND MENTORSHIP OPPORTUNITIES FOR STUDENTS:

The i2I Suite of Programs (Figure 2) has been developed based on decades of research and industry experience in university commercialization by experts deeply embedded and connected across the Canadian Innovation Ecosystem. To ensure **deep mindset, culture change and long-term embeddedness**, i2I programs have been thoughtfully crafted with the guiding principles shown in Table 1.

Table 1. Guiding Principles Behind the i2I Approach (driven by insight from research and practice)

Insight	I2I Design Principle(s)
Many scientists feel “left out” of university entrepreneurship [12] but agree they want to achieve impact.	Stresses mindset development <i>and impact across any path</i> : industry, translation or venture.
Many scientific researchers do not feel represented or welcome in university incubator programs [12] but recognize and value courses .	Facilitated by teams of faculty with research knowledge and industry experience. Engaging industry mentors with faculty facilitators allows for easier bridging into later stage programs (and deep industry connections).
Growing organizations increasingly recognize the need to build innovation capacity , but lack training capacity.	Works with growing and scaling organizations to ensure graduates have the mindsets, skillsets and competencies to grow into leadership as well as bridge back into research base.
Faculty are role models and gatekeepers and have traditionally viewed industry or entrepreneurial paths negatively.	Engaging entrepreneurial faculty as regional leads and “trusted boundary spanners” <i>leverages relationships, increases legitimacy to fellow faculty members and builds into existing initiatives</i> .
Researchers increasingly recognize the need for translational skills [8, 9,10,11].	Developed in an experiential course structure, laddering into credentials, <i>appealing to needs and values of researchers</i> .
Timeframes must be aligned Faculty supervisors often reluctant for more demands on students’ time.	Designed strategically as flexible, hybrid and part-time so researchers can continue advancing their research while gaining the innovation mindset, skills and competencies.
Researchers need time to learn from training and adapt their research.	Stipends allow participants to focus by removing the need to take on another TA or RA-ship .
Science-based innovations often face evolving ecosystems over long and future-looking time frames [17].	Focuses on opportunity creation (shaping of research and opportunities) in addition to recognizing opportunities to match with present market needs.

i2I Program Suite: Beginning with the i2I Skills Training, i2I programming has been refined over time, by **award-winning educators and online pedagogy experts** and continues to be designed and co-created with experts to reach key stakeholders in Canada’s innovation ecosystem. The i2I Program Suite is summarized in Figure 2 and Table 2 provides the detailed descriptions.

Table 2. i2I Program Suite Overview

i2I Skills Training (Program Core)

Target Audience: Graduate Researchers and postdocs*

Guiding Insights: As above, researchers need to begin exploring commercialization potential without a pre-meditated outcome (ex. a venture), need time to iterate between program learning and their research, and value part-time hybrid programming led by faculty and practitioners.

Delivery: 8-month *hybrid course format* of weekly class lecture videos, assignments that participants work through with their own research idea in their own time, followed by faculty, mentor and peer feedback.

Regional and National Connectedness: begins in regional cohorts to build community then moves into national learning groups with expert mentors

Stipend: \$10K – the equivalent of taking on one less RA or TA-ship in order to focus

* Faculty members have also joined the program, through the Faculty Innovation Fellow Program that has been developed to better suit most faculty time and outcome requirements.

Learning Outcomes: The specialized curriculum designed specifically for scientists early in their research journey, delivers key learning outcomes specific to their research that are not found in other entrepreneurship training programs, including:

Knowledge: Intellectual property basics and strategy; understanding financial statements; startup capital requirements and funding sources, frameworks for managing under uncertainty, principles of valuation of startup companies, storytelling.

Competencies: Conducting market assessments, customer identification, developing pricing strategies, developing financial projections, developing value propositions, creating and adapting business models.

Skills: complex problem-solving, communication of compelling narrative, resilience, networking, leadership, financial literacy.

Entrepreneurship capabilities: entrepreneurial mindset and considering commercialization possibilities, strategically protecting inventions for short term and emerging markets, technology-market matching, prioritizing markets for inventions, attracting and mentoring founding teams, changing traditional risk-reward trade-offs, strategic timing.

Output: a comprehensive and compelling pitch to translate research outcomes into tangible innovation impact. Written commercialization strategy components, including market prioritization, value proposition and IP strategy

Experience: 10 years, 22 cohorts complete, 500+ alumni from 30+ universities across Canada, 10 international universities with 120+ participants over 6 cohorts registered for 2024-25.

Of program participants to date, 50% are innovation champions; 26% are translational scientists; 19% are scientist entrepreneurs (venture creation); and 5% are following multiple paths.

Faculty Innovation Fellow(s) Program (FIFP)**Target Audience:** Faculty members

Guiding Insights: Faculty are the opinion leaders and role models of the university and their students and colleagues. Involving them not only speeds up program interest and adoption to research students and postdocs, but entrepreneurial labs have incredible long-term impact.

Delivery: 1-week intensive conference/summer school

Regional & National: Faculty from across Canada come together in rotating locations

Learning Outcomes: As i2I Skills Training Above, modified for faculty

Outputs: Customized. Examples: A new plan for their research, a translation plan for funding bodies, a venture idea or a plan for commercialization via licensing. Additionally, FIFP graduates will form an alumni network for sharing helpful resources and providing ongoing support.

Experience: Over 40 faculty members and industry scientists have pursued this training—signifying the potential for long-term culture change. Whereas STEM faculty have participated in the Core i2I programming since 2018, the first intensive FIFP was piloted in May 2024 with 14 faculty members from 5 universities across Canada, spanning diverse disciplines (health science, psychology, chemical, mechanical, civil, and electrical engineering, biology and physics).

i2I Commercialization Postdoc**Target Audience:** Deep-tech postdocs with high potential, further from application research

Guiding Principles: Highly skilled postdocs represent substantial, under-recognized HQP for the Canadian innovation ecosystem as they are ideally positioned to pursue translation and commercialization activities with the right training. Targeted commercialization training for STEM postdocs specific to the significant sectoral differences between a range of science-based industries can unlock much value for themselves, PIs, universities, and local economies [18, 19], but **needs to focus on science commercialization and research**.

<p>Delivery: To support both research and commercialization development, a community of postdocs are formed with a team around them including a Principal Investigator (PI), Commercialization Investigator (CI), dedicated industry mentors and a supporting “concierge”.</p> <p>Regional and National: Selected from across the country, brought together at regular intervals.</p> <p>Stipend: \$80K/year – Prestigious. Competitive to industry and other opportunities</p>
<p>Learning Outcomes: Includes and deepens outcomes of i2I Skills Training. Additionally focuses on: <i>IP Strategy development</i>, including IP contexts at different universities (e.g., inventor-owned, university-owned, third parties), navigating co-inventorship (e.g., Research PI, researchers), dealing with multi-institutional projects; <i>Business models</i> for different sectors (e.g., pharma/biomedical, renewable energy etc.); Iterative opportunities to refine business models for commercializing inventions (in a startup, lab, or as part of an initiative with a company) Hands-on opportunities to develop and refine business models for commercialization initiatives (e.g., ventures, collaborative projects); Iterative, targeted, pitch development for different audiences; focused leadership training including hands-on sessions; and team-building strategies.</p>
<p>Outputs: All i2I program core outputs, plus de-risked technology and in-depth, refined commercialization strategy consistent with chosen pathway. Compelling translational grant, industry NPD strategy, or venture investment strategy. Deep integration from research on-ramps, mentors, i2I faculty & cohort, through to innovation off-ramps.</p>
<p>Experience: Individual student pilot (1 year), 2023-24 (10 students), 2024-25 (6 students)</p> <p>Note: Several of i2I's industry and research partners are already committed to providing additional support for this program (please see delivery)</p>
<p>Integrated Learning Experiences Example: Collaborating Organizations</p> <p>Targets Audience: Participants from collaborating organization (e.g., Perimeter Institute, adMare, AGE-WELL)</p> <p>Guiding Insights: These Integrated Learning Experiences are a valuable opportunity to influence leading researchers “decision to engage” in commercialization. As testimonials from Mend the Gap and Net0MM demonstrate (see letters of support), such customized training sessions are highly valued in shaping innovation ideas.</p> <p>Delivery: Short, intensive innovation programs customized for different audiences - has included in-person intensive programs, virtual interactive customized sessions and national webinars.</p>
<p>Learning Outcomes: Awareness of unmet needs, framing of research-based innovation ideas, driving culture change across the ecosystem.</p>
<p>Skills and Focus: Depends on partner needs. Has included translating science skills to industry, science-communication, business models for science-based ventures, managing under uncertainty, technology-market matching.</p>
<p>Experience and Impact: Researchers have been incorporating i2I into their lab training programs (e.g., NMIN training video series), grants (i.e., CREATE grants with UBC, Queen's, and Waterloo), MEND THE GAP integrated research and training, and other events. See letters of support from on-ramp organizations.</p>
<p>Equity, Inclusion & Diversity Initiatives Example: Indigenous Innovation Intensive Program</p> <p>Targets Audience: Indigenous leaders, Elders, and Indigenous Economic Development professionals (for half day outreach), and Indigenous Youth Entrepreneurs (for 5-day intensive training)</p> <p>Guiding Insights: Learning from outreach workshops to co-design and deliver customized i2I training for Indigenous Youth entrepreneurs interested in science and technology entrepreneurship.</p> <p>Delivery: Short, intensive innovation programs customized for Indigenous youth entrepreneurs which will include in-person workshops with customized content delivered in Indigenous communities.</p>
<p>Learning and Outcomes: Identifying unmet Indigenous community needs, matching existing technologies to unmet Indigenous needs. Developing new technologies to address unmet Indigenous community needs, developing commercialization strategies respecting indigenous traditional knowledge and IP to achieve community-oriented economic and social development.</p>
<p>Experience and Impact: EFCIE (UFV), and i2I partners UNBC and UManitoba have deep ties to surrounding Indigenous communities. Funded by the NSERC LOI in Summer 2024, EFCIE has conducted an economic development workshop for Indigenous leaders to introduce the i2I network. This has provided valuable insights into refining outreach strategies and exploring content delivery methods for Indigenous participants.</p>

The i2I program has been designed strategically, and refined over time, by award-winning educators and online pedagogy experts as a flexible, predominantly asynchronous, part-time training program that allows science and technology researchers to continue advancing their research while gaining the innovation skills and entrepreneurial mindset required to create and capture new opportunities. It guides participants through four courses with deliverables that progressively build on each other (Figure 4). This process continues to deepen their knowledge, facilitating interaction within their cohort and sector-specific mentor learning groups, culminating in a comprehensive and compelling pitch to translate their research outcomes into tangible innovation impact. In the second half of the program, participants are divided into sector-specific learning groups and matched with experienced industry mentors to foster collaborative regional and national connections. The specialized curriculum designed specifically for scientists early in their research journey, delivers key learning outcomes specific to their research that are not found in other entrepreneurship training programs (see Table 2, Learning Outcomes).

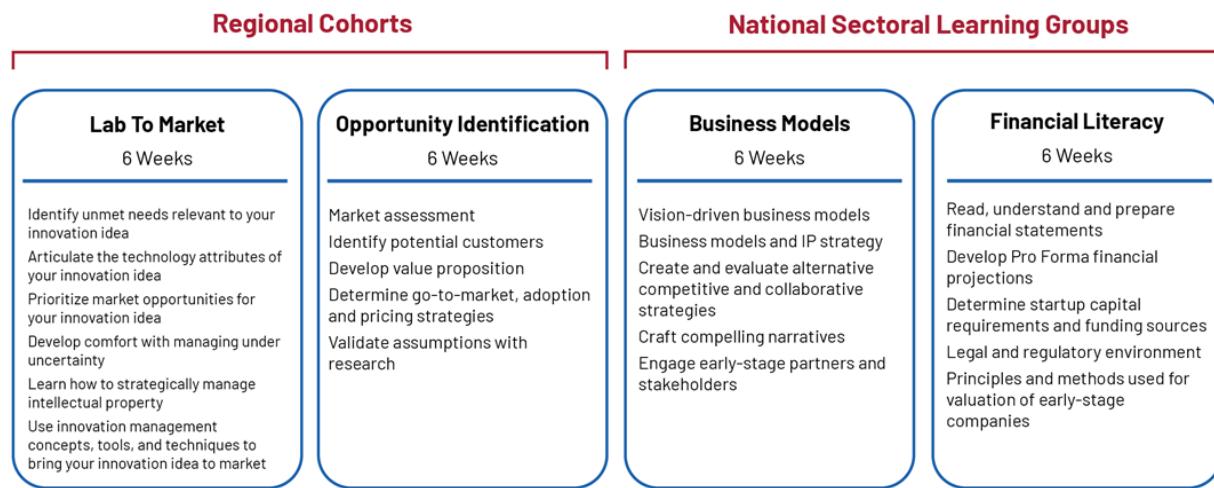


Figure 4: i2I Core Training Modules: Award-Winning Pedagogy

i2I Mentor network: Comprised of industry experts in early-stage commercialization, the mentors work with i2I training participants to provide sector-specific insights into unmet market needs, regulatory pathways and future opportunities. The mentor network will be expanded with a focus on recruiting, onboarding and supporting industry mentors that prioritize EDII and accessibility principles. Mentor selection criteria will include professional expertise in science innovation and commitment to promoting inclusive and equitable environments. Mentors will be onboarded in the Network's values, goals and EDII policies, and will be supported through regular check-ins, feedback mechanisms and a community of practice.

RESEARCH INSTITUTE 5-YEAR GOALS AND KEY PERFORMANCE INDICATORS:

The i2I Network will adopt a results measurement strategy with appropriate Key Performance Indicators (KPIs) attached to each of the expected results. Many i2I Core Programming outputs are already captured by the i2I Learning Management System (Canvas). The ODT will provide additional data gathering and analysis for overall i2I Network initiatives. Co-applicants, led by the Regional Leads, will collect, synthesize and analyze data related to their activities and their participants and share nationally through a data management and analytics platform (e.g., Tableau). At the project implementation planning stage, and in collaboration with NSERC, standardized metrics will be used within the Network. The data will be shared with the National Leadership Team and will form the basis of results measurement. Detailed data collection strategies for each of the KPIs will be outlined in an implementation plan, including: participant demographic information using best practices to encourage self-identification, exit surveys of program participants with a standardized survey tool to be reviewed and updated annually, longitudinal surveys, including career surveys of past participants, and focus groups and interviews with ecosystem and delivery partners (i.e., co-applicants) to assess performance. Beyond the entrepreneurial learning outcomes (see Table 2, and Figure 4),

over the course of the five-year funding period, the i2I Network will achieve key performance indicators as presented in **Table 3**.

Table 3. Key Performance Indicators for the i2I Network

Validated commercialization strategies created for university research labs
All i2I participants in 8-month part-time and 2-year full-time programs will create validated commercialization strategies for their innovation idea and their university research labs. <i>Long-term impact:</i> More fundamental research brought to impact to address global challenges.
Strategic patents filed and IP strategies created
Faculty, Commercialization Postdoc, and graduate researcher i2I trainees will have guided their patent applications with analysis of unmet market needs, viability of technological solutions, market prioritization, competitive analysis, and IP strategy. <i>Long-term impact:</i> Higher percentage of university patents licensed. “Build-for-scale” science-based ventures.
Scalable science-based ventures
Scalable science-based ventures having crossed the “valley of never having lived” [13] <i>Long-term impact:</i> Better Canadian pipeline for CDL and investors
Translational research grants
Compelling translational research grants Translational researchers with revised value propositions and mindset <i>Long-term impact:</i> Changed culture at universities. More impact from research.
Breakthrough industrial innovation
Science innovation new products refined with compelling value propositions and minimal technology attributes Industry innovation leaders in STEM sectors <i>Long-term impact:</i> Build industry receptor capacity. Improve Canada’s innovation record.
Commercialization postdocs with entrepreneurial capabilities, commercialization strategies for university research, advanced TRL, and strategic IP filed
Scalable science-based ventures having crossed the “valley of never having lived” [13] Translational researchers with successful translational grants Industry innovation leaders in emerging STEM sectors with a science innovation product developed <i>Long-term impact:</i> Pathway for scientist entrepreneurs to remain in Canada. Increased legitimacy of science innovation. Enable key agents of change.
i2I graduate STEM and health researchers with entrepreneurial mindset and commercialization strategy
Scalable science-based ventures laddering into other programs such as L2M, CDL, etc. Translational researchers with revised value propositions and mindset Industry innovation leaders in STEM sectors <i>Long-term impact:</i> Vital HQP bridge created from Canadian research labs to science innovation ecosystem.
Faculty from across Canada with entrepreneurial mindset and revised lab experiment priorities
Ideation and shaping of potential scalable science-based ventures Ideation and shaping of translational grant proposals Science innovation new products refined with compelling value propositions and minimal technology attributes <i>Long-term impact:</i> Culture change in academia. 15,000+ graduates from innovation-shaped PhD programs.
Collaborations with other NSERC Lab to Market initiatives
Purposeful collaborations with other short-listed NSERC Lab to Market grant recipient initiatives

<i>Long-term impact:</i> Further interconnectivity among on-ramps and off-ramps.
Pilots for training of undergrad & college students
Entrepreneurial mindset and science innovation skills
<i>Long-term impact:</i> Broadening science innovation talent.
<i>Inclusive and Regional Participation</i>
50% of participants will be from underserved communities from federally-designated groups
Active participation from all regions in Canada, with specific attention to Indigenous, Francophone & Northern communities
<i>Long-term impact:</i> Diverse, inclusive and equitable participation in the Canadian innovation ecosystem.
Indigenous innovators trained
Matching unmet needs in Indigenous communities to science innovation ideas and co-creating solutions
<i>Long-term impact:</i> Advancing economic and social reconciliation.
Science Innovation Mentors recruited and onboarded
90% i2I participants actively engaged with sector specific mentors with expertise in science innovation
<i>Long-term impact:</i> Innovation idea shaping & i2I alum steered towards off-ramps and investors.
Collaborating Organizations engaged in customized training sessions and New Collaborating Organizations
Majority of participants indicating that customized training sessions increased their awareness/skillsets
<i>Long-term impact:</i> Deep integration of research & science innovation ecosystem. Growth & Inclusion.
HQP positively impacted through i2I training experiences, including participants in customized and intensive training for collaborating organizations
<i>Long-term impact:</i> Cultural change of Canadian academia to be more innovative

CURRENT RESOURCES AND FUTURE SUSTAINABILITY:

Collaborations:

This i2I Research & Innovation Institute along with the funding from NSERC L2M competition will enable the growth and expansion of the i2I network across Canada, with tight integration of SFU and the 13 co-applicants anchoring regional ecosystems, and 55+ collaborating organizations, providing legitimacy, embeddedness and on-ramps and off-ramps into each regional ecosystem and sector. Table 4 describes the individual strengths and science innovation experience that our co-applicants bring to the regional ecosystems of the i2I network, while highlighting a sample of the collaborating organizations within each regional ecosystem.

Table 4: Regional Ecosystems, Leads and Strengths

<i>East Ontario Ecosystem:</i> Queen's University , Lead: Prof. James McLellan , Academic Director, DDQIC
Queen's was awarded “The Entrepreneurial University” by Deshpande Symposium. The Dunin-Deshpande, Queen's Innovation Centre (DDQIC) runs the Jim Leech Mastercard Foundation program for young African entrepreneurs (4000+ participants in 4 years), and has supported 485+ founders and 130+ venture through its incubator program since 2012. Queen's represents the East-Ontario ecosystem, which is anchored in the Ottawa-Toronto Corridor , and strengthened by major science and engineering universities with major medical schools, such as Queen's, Ottawa U., and UofT. Queen's is currently running their 4th i2I program cohort , and hosted and co-developed the inaugural Faculty Innovation Fellow Program in May 2024.
<i>Sample Collaborating Organizations:</i> DuPont Canada, Green Centre of Canada, Open Plastic, PnuVax Inc., CO2L Tech, Dynamiris Inc.

South-West Ontario Ecosystem: **University of Waterloo**, Lead, **Prof. Valerie Ward**, Canada Research Chair in Chemical Engineering and Engineering Innovation Lead; **Conestoga College**, Lead: **VPRI Michelle Chrétien**

The **Waterloo-Toronto Corridor** is a world-leading innovation ecosystem with Canada's greatest concentration of research universities. **Waterloo** is Canada's leading university for producing successful entrepreneurs (Pitchbook) and **Waterloo** is the only Canadian Region in the Top 20 of Startup Genome's Global Startup Ecosystem Report (2024). Companies in **Waterloo's** campus incubator "Velocity" raised over \$2.4 B USD in 2021. **Waterloo** is currently running its **first cohort of the i2I program**.

Conestoga's Venture Lab, a universal business incubator, has supported 130 founders over the past 5 years, including the only Venture Lab for Skilled Trades program in Canada backed by the RBC Foundation's Future Launch initiative. The Sales Lab is Canada's only incubator for sales careers. **Conestoga** will be **developing i2I network strategy for colleges**, will be running 1-week i2I innovation intensive programs customized for Canadian college students, and will be **co-creating and running the i2I SalesLab** program nationally.

Sample Collaborating Organizations: Perimeter Institute, Velocity, McMaster VPRI, York Y-Space, AGE-WELL NCE @ University of Toronto, CDL Lab2Unicorn.

Québec Ecosystem: Université Laval

Co-leads: **Prof. Sophie Veilleux** and **Prof. Fabiano Armellini (Polytechnique Montreal)**

ULaval reaches over 9,000 students with their entrepreneur programs and its Entrepreneurial Academy has supported more than 60 entrepreneurs, with 96% still in operation. **Laval** and our Collaborating Organizations (see below) are our gateways to the Québec entrepreneurial ecosystem with its hubs in Montréal, Québec, and Sherbrooke. Prof. Sophie Veilleux, tenured Professor of Technology and International Entrepreneurship, is a Trusted Boundary Spanner in this ecosystem. Home to a Leadership Chair in Teaching Entrepreneurship Development and an International Entrepreneurship Research Centre, **ULaval** is running their **2nd cohort of the French language i2I program**.

Sample Collaborating Organizations: AdMare Tx Accelerator, IVADO, TransMedTech, Axelys, Polytechnique Montreal, McGill Engine, McGill University Health Network

Atlantic Ecosystem: Dalhousie University and Memorial University

Co-Leads: **Prof. Aaron Newman** and **Prof. Carlos Bazan**

Dalhousie's ideaHUB is unique in Atlantic Canada as an early deeptech incubator. Their entrepreneurial centre, Dal Innovates, has guided multiple cohorts through the Lab2Market programs since 2020 and is currently co-leading its **third cohort of the i2I program**. **Memorial** has more than 30 research centres and received more than \$175 million in research funding in FY2021-22. Their four entrepreneurial centres support entrepreneurship across the disciplines and provide a strong 2i focus. Memorial is co-leading their **3rd i2I cohort** this year.

Sample Collaborating Organizations: L2M, Ocean Startup Project, CDL Atlantic, Volta, Springboard Atlantic

Prairies Ecosystem: University of Alberta (UofA) and University of Manitoba (UManitoba)

Co-Leads: **Dr. Tony Briggs** and **Dr. Loren Oschipok**

UofA is a leader in R&D with an annual research budget of \$500M+ and over 130 active spinoff companies. The eHUB Entrepreneurship Centre is ranked top 3 in entrepreneurship research in Canada, supporting 50+ founders and 250 cross-faculty students annually. eHUB collaborates with external partners, including ELITE (black youth) and the Fyrefly Institute (2SLGBTQIA+ youth) to expand entrepreneurial opportunities for marginalized groups. Alberta is currently running its **first i2I cohort**.

UManitoba's Indigenous Business Education Partner, an initiative of the Asper School of Business, has been providing Indigenous entrepreneur support for almost 20 years. **UManitoba** will participate in Alberta's i2I cohort this year and start their own in Y2. They will **run an Indigenous i2I Intensive training program in Y2**, after participating in the UFV & Stó:lō CF program in Y1.

Sample Collaborating Organizations: North Forge, Canada West Foundation, Foresight Canada, Hunter Hub

West Ecosystem: SFU, University of the Fraser Valley (UFV), University of Victoria (UVic), University of Northern British Columbia (UNBC), Providence Health Research Institute, Fraser Health

Co-Leads: **Prof. Jon Thomas**, **Prof. Andrew Park**, and **Prof. Paula Wood-Adams**

The Esposito Family Centre for Innovation & Entrepreneurship at **UFV** is an internationally reputed research centre at UFV with strong collaborations with local Indigenous communities, and with leading research institutions including IIT Madras, the Indian Institute of Science, and R-U-Bochum. **UFV** hosted an Indigenous economic development workshop in 2024, and it will **lead i2I's national EDII and Indigenous initiatives** and co-develop innovation intensive programming for undergrad students. **UVic** offers an Entrepreneurial Engineering Masters Program, its incubator has aided in co-founding startups with a market value of \$300M+. Coast Capital Innovation Centre supports emerging businesses and helps student ventures through consultations on IP. After active participation of UVic faculty and researchers, UVic will run its **first i2I cohort** in Y2. **UNBC** connects Vancouver's innovation ecosystem to the North and offers a specialized micro-credential in Indigenous Entrepreneurship. **UNBC** will **lead the North Strategy**.

and intends to collaborate with Yukon University and Lakehead. They will run an **Indigenous i2I Intensive training program in Y2**, after participating in the UFV & Stó:lō CF program in Y1. UNBC will also participate in UVic's i2I cohort in Y2 and Y3, before co-leading an i2I cohort Y4 onwards.

Providence Health Research Institute (PHRI) (Dr Darryl Knight) and **Fraser Health** (Jacqueline Per) are both West Ecosystem co-applicants, with PHRI having already benefited from customized innovation training sessions, i2I skills training, and committing in-kind contributions to the i2I Commercialization Postdoc program.

Sample Collaborating Organizations: BioProducts Institute, Mend the Gap NFRF-T, Net0MM NSERC CREATE, AdMare, StemCell

Funding and Sustainability:

We have been successful with the NSERC Lab to Market (L2M) grant, securing \$23M over five years, establishing a strong foundation for our initiatives. At the conclusion of this funding period, we will have the opportunity to apply for renewed funding to ensure the continues growth and impact of our initiatives.

To sustain and expand our efforts, we plan to pursue additional funding sources, including matching contributions from MITACS, NRC-IRAP's CtO program, and philanthropic donations.

In addition, we will actively seek research grants from various funding bodies, such as the SSHRC Partnership Grant, MITACS, Horizon Europe, and other opportunities aligned with our objectives. These efforts will ensure the long-term financial sustainability and growth of our programs, enabling continued innovation and impact.

WOULD THE ESTABLISHMENT OF THIS INSTITUTE ENABLE THE MEMBER RESEARCHERS TO ATTRACT FUNDING BEYOND WHAT THEY WOULD BE ABLE TO DO ON THEIR OWN? PLEASE EXPLAIN.

The establishment of the i2I Research & Innovation Institute would significantly enhance the ability of member researchers to attract funding beyond what they could individually secure. By fostering a collaborative, interdisciplinary environment, the Institute aligns with the requirements of major funding programs such as NSERC Transformation and NSERC CREATE initiatives, which emphasize team-based, interdisciplinary research. These types of grants typically require a demonstrated capacity for innovation that spans multiple fields of expertise, often involving collaborations between academia, industry, and government. The i2I Research & Innovation Institute's focus on bridging gaps between academia, healthcare, and industry creates a strong foundation for these types of collaborative research proposals, giving member researchers access to a broader pool of funding opportunities. For example, the collective resources and networks available through the Institute will help secure funding from programs such as CFREF, NFRF and other capstone tri-council programs, which value translational research and commercialization efforts.

Furthermore, interdisciplinary collaboration within the Institute opens up additional avenues for researchers to apply for international funding, such as Horizon Europe, as well as national programs like the SSHRC Partnership grants, which favor projects that involve diverse expertise and stakeholders. This collaborative approach ensures that the Institute's members are better positioned to meet the complex requirements of these funding sources, ultimately leading to larger and more sustainable research initiatives. By bringing together expertise from multiple fields and creating synergies between them, the Institute will position its researchers as leaders in high-impact, innovative research, increasing their ability to attract substantial funding.

COMMUNICATION PLAN:

Provide a description of a communication plan that is aligned with University Communication policies, including plans for maintaining an up-to-date web/social media presence.

The i2I Research & Innovation Institute aims to establish a clear, engaging, and consistent communication strategy to enhance its visibility, foster collaboration, and maintain strong relationships with key stakeholders. This plan will support the Institute's mission and align with SFU's University Communication policies while ensuring effective outreach and engagement both within and outside the academic community. The **Operational Delivery Team (ODT)**, illustrated in Figure 3, led by the National Executive Director, will oversee national day-to-day operations, including curricular development, operational coordination, recruitment support, and comprehensive marketing and outreach initiatives. A key focus will be on enhancing communication and marketing efforts, supported by the addition of a

dedicated Marketing and Communication Coordinator. These efforts will include targeted outreach to Francophone participants.

The primary objectives of the communication plan are to:

- **Raise Awareness:** Promote the Institute's mission, research initiatives, and milestones to external and internal audiences.
- **Support Recruitment:** Attracting STEM researchers from across the country and from diverse backgrounds.
- **Foster Engagement:** Cultivate ongoing engagement with researchers, students, industry partners, collaborating organizations and the broader community.
- **Showcase Research Impact:** Regularly update stakeholders on research outcomes, innovations, and applications emerging from the Institute's work.
- **Support Institutional Branding:** Enhances SFU's reputation and position as a leader in research and innovation. Ensure all messaging reflects SFU's values.

The communication plan will be tailored to engage the following key audiences:

- **Internal Stakeholders:** SFU faculty, students, graduate researchers, and staff members, as well as those from partner institutions involved in the i2I Network.
- **External Stakeholders:** Collaborating organizations, industry partners, government organizations, funding bodies, potential donors, community, and the general public.

To achieve the communication objectives, the Institute will utilize multiple platforms for maximum outreach:

- **University Website:** A dedicated website will serve as the primary information portal. The website will feature the Institute's leadership, vision, goals, membership affiliates, key research projects, success stories, upcoming events, and collaboration and partnership opportunities. Secondary portals are through the [SFU Centres and Institutes](#), the SFU VPRI webpages, the Chang Institute, SFU VentureLabs and the Beedie websites.
- **Social Media Platforms:** Social media channels such as LinkedIn and X will be utilized to feature stories, news and updates, engage with followers, and amplify content.
- **Annual Reports:** An annual report will be sent to stakeholders to update them on the Institute's progress, key initiatives, and research breakthroughs. It will include summary of progress on activities, success stories, research priorities, milestones and KPIs (Table 3), financial statements and outlook for future plans.
- **Press Releases:** Press releases will be distributed to regional and national media channels, highlighting major achievements, new collaborations, and funding successes.
- **Webinars and Events:** The Institute will host webinars and conferences to engage with the community, showcase research findings, and provide networking opportunities.
- **Customized Integrated Learning Experiences:** Ten or more customized Integrated Learning Experiences will be developed and delivered in partnership with collaborating organizations annually. When possible, the video from these experiences will be posted to the i2I Research & Innovation Institute website.

Monitoring and Analytics: Social media and web analytics tools will be used to track engagement, measure the success of communication campaigns, and gather feedback for continuous improvement.

The content strategy will focus on maintaining consistent, engaging, and relevant messaging:

- **Research Spotlights:** In-depth features on specific research projects and commercialization strategies and their impact on various sectors. These will be shared through social media and articles.
- **Interviews and Profiles:** Conduct interviews with key researchers, partners, and students, sharing their experiences with the Institute, innovation skills gained and their entrepreneurial mindset shift.
- **Visual Content:** Utilize high-quality images, infographics, and videos to visually represent research outcomes, events, and activities. This content will enhance the Institute's storytelling and make complex research more accessible.
- **Event Promotion:** Social media, the website, the SFU Innovates network and the national i2I Network will be used to promote events, encouraging participation and engagement. The Institute will also offer live streaming or recorded sessions of selected innovation training for broader access.

By executing this comprehensive communication plan, the i2I Research & Innovation Institute will ensure it remains visible, transparent, and connected with key stakeholders. This plan will not only enhance SFU's and the Institute's reputation and position within Canada, but also support its mission to drive research, innovation, and collaboration both regionally and nationally.

REFERENCES:

1. **Maine, E.** and Seegopaul, P. (2016). Accelerating the Commercialization of Advanced Materials. *Nature Materials* 15(5), 487-491.
2. **Maine, E.** (2013). Scientist-Entrepreneurs as the Catalysts of Nanotechnology Commercialization, *Reviews in Nanoscience and Nanotechnology*, 2(5), 301-308.
3. McDougall et al (2018). Improving Innovation through Better Management: The Expert Panel on Innovation Management Education and Training. Council of Canadian Academies
4. **Thomas, V.J.**, Bliemel, M., Shippam-Brett, C., and **Maine, E.**, (2020). Endowing University Spin-offs Preformation: Entrepreneurial Capabilities for Scientist-Entrepreneurs, *Technovation*, 96-97.
5. **Park, A.**, Goudarzi, A., Yaghmaie, P., **Thomas, V.J.**, **Maine, E.** (2022). Rapid Response through the Entrepreneurial Capabilities of Academic Scientists. *Nature Nanotechnology* 17, 802-807.
6. Joyce, P., Allen, C. J., et al (2024). A translational framework to DELIVER nanomedicines to the clinic. *Nature Nanotechnology*, 1-15.
7. Bouchard et al, (2023). Report of the Advisory Panel on the Federal Research Support System. Innovation Science and Economic Development Canada. ISBN 978-0-660-48161-6.
8. **Thomas, V.J.**, MacNab, F., Guarino Moraes, B., Goldsmith, T., **McLellan, J.**, **Maine, E.**, **Lubik, S.** (2024). Addressing Grand Challenges Through the Entrepreneurial Capabilities of Commercialization Postdocs <https://journals.aom.org/doi/abs/10.5465/AMPROC.2024.305bp>
9. **Thomas, V.J.**, MacNab, F., Guarino Moraes, B., Goldsmith, T., **McLellan, J.**, **Maine, E.**, **Lubik, S.** (2024). A Study on Commercialization Postdoctoral Fellows. White Paper prepared for Mitacs. <https://www.mitacs.ca/our-innovation-insights/from-invention-to-innovation/>
10. Cannon et al (2021). Degrees of Success: The Expert Panel on the Labour Market Transition of PhD Graduates. Council of Canadian Academies.
11. Khan, M. and Casello, J. (2023). Why Postdocs need Entrepreneurship Training. *Nature Careers*, Nov 8, 2023.
12. Gümüsay, A. & Bohné, T. (2018). Individual and organizational inhibitors to the development of entrepreneurial competencies in universities. *Research Policy*, 47(2), 363–378.
13. **Lubik, S.** (2023). The Valley of Never-Having-Lived: Canada's Innovation Talent Problem. *The Hill Times*, February 1, 2023.
14. Pisano, G., (2010). The evolution of science-based business: Innovating how we innovate. *Industrial and Corporate Change*, 19(2), 465–482.
15. **MacQuarrie, E.R.**, Simon, C., Simmons, S. and Maine, E. (2020). The Emerging Commercial Landscape of Quantum Computing. *Nature Reviews Physics* 2(11), 596-598.
16. **Ali Taleb, A.**, Maine, E. and Kjeang, E. (2014). Technical-economic Cost Modeling as a Technology Management Tool: A Case Study of Membranes for PEM Fuel Cells. *Journal of Manufacturing Technology Management* 25(2), 279-298.
17. Adner, R. (2006). Match your innovation strategy to your innovation ecosystem. *Harvard Business Review*, 84(4), 98.
18. **Maine, E.**, Soh, P.H., Dos Santos, N. (2015). The Role of Entrepreneurial Decision-Making in Opportunity Creation and Recognition, *Technovation*, 39-40 (May-June), 53-72.
19. **Maine, E.** (2021). Canada's University Science Innovation Ecosystem needs a Build-for-Scale Strategy, *Research Money*. July 14, 2021.

EVIDENCE OF SUPPORT:

Please include evidence of support from the Dean or Associate Dean, Research of the home Faculty of the proposed Institute Director (mandatory).

Please see attached letter of support from Carolyn Egri, Dean pro term, Beedie School of Business.

Date: 12/6/2024

Applicant
Signature:

Elicia Maine

By signing this form, the applicant confirms they have reviewed [SFU Policy R40.01](#) and [related Procedures](#) and agrees to conduct its activities in accordance with University policies.

December 5, 2024

Dear Senate Committee on University Priorities,

RE: i2I Research & Innovation Institute

As Dean pro tem of Beedie School of Business, I am writing to express my enthusiastic support for the i2I Research & Innovation Institute. This Institute, under Prof. Elicia Maine's leadership, is poised to become a national centre of excellence dedicated to studying and fostering entrepreneurial capacity, while supporting the translation of fundamental research from universities and research institutes across Canada into impactful economic, social and environmental value creation.

I am delighted that the SFU-led national Invention to Innovation (i2I) Network proposal, focused on delivering entrepreneurial training programs, has been selected as one of the four successful applications out of 20 invited to submit full proposals for NSERC's Lab to Market grant. The proposed i2I program suite is a key initiative in bridging the gap between fundamental research and the impactful mobilization of that research, offering revolutionary, tailored support across three distinct career pathways.

SFU Beedie is proud to have collaborated with the SFU's VPRI in developing and launching the i2I program in 2015, initially as the for-credit 16-unit **Graduate Certificate in Science and Technology Commercialization** (GCSTC), and of the hugely impactful roles that i2I alumni are playing in our BC and Canadian innovation ecosystems today. In 2019, SFU Beedie Executive Education partnered with Mitacs and our i2I faculty in co-developing and launching the **Mitacs i2I Innovation Skills Training** program. This not-for-credit, largely asynchronous, cohort-based program provides foundational entrepreneurial training, with the opportunity to ladder into the GCSTC for 8 credits upon meeting performance criteria. This collaboration enabled the expansion of i2I programming across Canada and internationally.

SFU Beedie remains committed to collaborate closely with the i2I Research & Innovation Institute on program delivery, curriculum updates, research initiatives, and the continued advancement of the GCSTC and other for-credit offerings. Dr. Sarah Lubik, serving as the National i2I Academic Director and the Academic Director of the GCSTC, along with Prof. Terri Griffith, an i2I faculty member, further reinforces the strong linkages between our innovation research, teaching and practice.

The i2I Network brings together a diverse set of stakeholders, including researchers, innovators, industry partners, collaborators and academic institutions. Integrating this network into the governance structure of the i2I Research & Innovation Institute offers a unique opportunity to create the necessary infrastructure for cross-disciplinary collaboration across academia, industry, and other ecosystem partners across Canada. Moreover, the centralized governance within the Institute provides the foundation needed for the national i2I Network to scale and sustain its initiatives. As the i2I programs continue to expand, the governance framework will allow for better tracking of progress, evaluation of outcomes, and securing continued funding and institutional

support. This structure ensures that the i2I Network operates efficiently and in alignment with the Institute's long-term strategic objectives.

In addition, embedding the i2I Network within the Institute's governance strengthens its capacity to influence the broader Canadian innovation ecosystem. The Institute will be better positioned to advocate for policy changes, attract new partners, and foster meaningful collaborations with government agencies, funding bodies, and the private sector. The integration of the i2I Network into this structure also creates a central point of contact, facilitating coordination across various stakeholders and increasing the likelihood of success in translating research into impactful innovations.

I wholeheartedly endorse this application and am excited to support the growth and success of the i2I Network and the establishment of the i2I Research & Innovation Institute. This initiative will not only foster innovation but also enhance Simon Fraser University's reputation and position it as a leader in thought leadership within the innovation ecosystem.

Sincerely,



Carolyn Egri
Dean pro term, Beedie School of Business