

Digital Supercluster (“Supercluster”) Additional Annual Disclosures
Fiscal period ending March 31, 2020

In accordance with our annual reporting requirements for the 2019/2020 fiscal period we confirm:

1. Since their implementation:
 - a) there were no updates to our Intellectual Property Strategy or the Data Strategy,
 - b) the financial controls operated as intended, and
 - c) the intellectual property strategy operated as intended and supports the objectives set out in the Corporate Plan.

2. Since our last fiscal year, we have implemented or updated the following policy, procedures or standards:
 - a) the Advance Policy to support members in pursuing their projects,
 - b) the Payment Policy to protect the Supercluster’s assets,
 - c) the Co-investment Guidelines to communicate what types of project expenses we co-invest in, and
 - d) the Claims Procedures to outline our review method to approve payment of co-investment of project expenses.

3. There were no:
 - a) Instances where Foreground Intellectual Property was not included on the Member accessibility registry,
 - b) Member disputes referring to the dispute resolution mechanism regarding ownership of and access to Foreground Intellectual Property, and
 - c) Audits or evaluations carried out during the year except the audit of the Supercluster annual financial statements.

4. The Supercluster held three workshops during 2019-20 totaling more than 120 attendees including SMEs that focussed on various elements of IP including, the development, protection, potential sharing and leveraging of IP in the context of the development of projects. In addition to these workshops, we provided IP support to SMEs and other Members in the development of projects. We estimate that at least 20 SME’s accessed legal advice in relation to the negotiation of Project Agreements including advice in relation to IP.

5. Staff are paid a salary, short term incentive based on personal and organisational performance, and benefits according to our Board approved compensation policy. Funding of these salaries is from various sources including industry and ISED. For the fiscal period ending March 31, 2020 and in regard to ISED funding, one employee was paid in excess of \$300,000 and the ranges of salaries for senior employees were:
 - Officers: \$250,000 - \$410,000
 - Directors and Vice-Presidents: \$120,000 - \$250,000

6. Consistent with our prior submissions, financial items requiring disclosure are:
 - a) Supercluster Funded Eligible Costs incurred and paid in the Fiscal Year were \$9,681,346
 - b) Unfunded Eligible Costs incurred and paid in the Fiscal Year were \$763,052
 - c) Industry Matching Funds in the Fiscal Year are \$5,628,734
 - d) Total funding for operating and administrative expenses was \$6,496,930
 - e) Total Supercluster funding for project investment was \$4,022,935
 - f) Total ISI funding for project investment was \$3,287,565

7. The steps taken to protect network and data security are included in our Data Strategy.

8. Ecosystem Development occurs in both our technology leadership and capacity building programs. In technology leadership, our collaborative innovation model builds partnerships between industry partners and post-secondary institutions, integrates SMEs into supply chains with market leaders and brings government, industry and academia together to find innovative solutions to big challenges. While technology is certainly an important component of success, the ability to convert the potential in these opportunities, relies on the strengths of our people.

Thus, our core strategy in ecosystem development, beyond the obvious relationship building exercises in technology leadership projects, is to encourage investment in people. Our capacity building program helps Canadians acquire the digital skills, leadership and opportunities that grow innovative Canadian enterprises. This year we launched eight pilot projects totalling \$5.4M focused on building talent to support the development of our digital ecosystem. These 8 projects include a total of \$2.7M in Supercluster project co-investment comprised of: workforce development projects helping reduce the time and cost it takes to make people job ready in the digital economy, leadership projects aiming at building diverse, creative leadership for ground-breaking digital ventures

and exploring ways to grow regional talent pools. This includes building diverse, inclusive teams with a particular focus on women and indigenous peoples. We have allocated up to \$10M in future investment in capacity building with a particular emphasis on rapid skilling systems to help Canadians acquire skills quickly and cost effectively in a post-COVID economy. This includes the development of assessment tools, standards and approaches around diversity and inclusion, so that innovation creates opportunities and pathways to success for all Canadians. We are also investing in leadership development to help entrepreneurs build fast growing digital ventures that can be catalysts in the economic recovery and become a source of well-paying jobs for Canadians.

9. Our programs with the underlying projects at March 31, 2020 were as follows:

***Indicate projects that were selected but not yet contracted as of March 31, 2020*

CAPACITY BUILDING	DATA COMMONS	DIGITAL TWINS	PRECISION HEALTH
<ul style="list-style-type: none"> • Athena Pathways • Future Capital • Women’s Entrepreneurship Program • Autonomous Systems Technician • HyperTalent • CAMPFIRE • Design for Startups • Diversifying Talent in Quantum Computing 	<ul style="list-style-type: none"> • Earth Data Store • Forest Machine Connectivity • Precision Agriculture to Improve Crop Health • Fresh Water Data Commons • **Protecting our Oceans • **Satellite-based Climate Change Monitoring 	<ul style="list-style-type: none"> • Predictive Analytics for Manufacturing • The Learning Factory • Augmented Reality for Maintenance and Inspection • Applied Analytics for Flood Mitigation • **Wellness.ai 	<ul style="list-style-type: none"> • Tailored Health-Pharmacogenetics • Dermatology Point-of-Care • Secure Health and Genomics Platform • Intelligent Point-of-Care Ultrasound Network • Personal Health Wallet • Reducing Opioid Use for Pain Management • **Workplace Brain Health • **Autism Sharing Initiative • **TRUSTSPHERE • **Healthcare to Homecare • **WayfindER

CAPACITY BUILDING

Partnering with employers, educators and community organizations to build job ready, world leading talent.

Athena Pathways

Project Lead: Artificial Intelligence Network of BC (AINBC)

Partners: Careteam, D-Wave, KPMG, MetaOptima, Microsoft, Society for Canadian Women in Science and Technology, Teck Resources Limited, British Columbia Institute of Technology, Northeastern University, Simon Fraser University, University of British Columbia

Partner Co-Investment: \$616K

Digital Technology Supercluster Co-Investment: \$250K (Total ISI funding - \$56K)

Total Investment: \$866K

Athena Pathways is helping Canadian women see the potential of the tech sector, and how a career in Artificial Intelligence aligns with their skills and interests. This 18-month program is providing girls and women, from middle through post-secondary students to professionals and leaders, training in computing science and gender diversity in AI. In addition, dozens of internships and mentorships in AI will be made available to women across the tech ecosystem. The program formally launched on March 5, 2020 in advance of International Women’s Day with its website and scholarship applications release. The project had to pause on the education offerings due to impact of the COVID-19 pandemic on the operations of the Consortium Members. Classes are expected to resume in Fall 2020.

Future Capital

Project Lead: Female Funders

Partners: Microsoft, Simon Fraser University

Partner Co-Investment: \$696K

Digital Technology Supercluster Co-Investment: \$500K (Total ISI funding - \$112K)

Total Investment: \$1.2M

Future Capital provides investment education that enables women to lead and shape the future of the economy. Through the Future Capital program, 500 Canadian women will gain access to a new platform for education, become members of an emerging network of women decision-makers in the tech and innovation ecosystem, and gain new opportunities to lead innovation within Canada. Content development, wireframing for the platform and securing corporate custom and open enrollment registrants is underway. The project had to pivot in its launch due to impact of the COVID-19 pandemic on the operations of the Consortium Members. A series of digital webinars with industry thought leaders in lieu of the face-to-face education programs will be rolling out in April 2020 and the corporate custom and open enrollment registrations are expected to resume in Fall 2020.

Women's Entrepreneurship Program

Project Lead: Victoria Innovation Advanced Technology and Entrepreneurship Council (VIATEC)

Partners: Accelerate Okanagan, University of Victoria Coast Capital Savings Innovation Centre, Purpose Five, Communitech

Partner Co-Investment: \$158K

Digital Technology Supercluster Co-Investment: \$474K (Total ISI funding - \$106K)

Total Investment: \$632K

The Women's Entrepreneurship Program is building capacity for women entrepreneurs and their tech ventures. Through boot camps, workshops, mentorship and peer-sharing on leadership skills, this nine-month program is providing opportunities for women to gain entrepreneurial skills and insights in a supportive environment via 3m-month tailored learning journeys. An advisory committee has been established and progress underway in mapping programming and learner needs and creation and preparation on the three cohorts to be delivered in Victoria and Kelowna. The project had to pause on the face-to-face education programs due to impact of the COVID-19 pandemic on the operations of the Consortium Members. All three cohorts are expected to launch in Fall 2020.

Autonomous Systems Technician

Project Lead: Teck Resources Limited

Partners: College of the Rockies, British Columbia Institute of Technology

Partner Co-Investment: \$487K

Digital Technology Supercluster Co-Investment: \$335K (Total ISI funding - \$75K)

Total Investment: \$822K

The Autonomous Systems Technician program offers new training and certification as the resource sector implements new technologies networks to enhance operations with real-time data. The pilot program focuses on training women, Indigenous peoples, and youth who are currently under-represented in the field, so they can build telecommunications careers close to home, addressing the short supply of qualified industry employees. An advisory committee has been established and there are efforts underway in mapping learner needs with industry input. The project had to pause due to impact of the COVID-19 pandemic on the operations of the Consortium Members. The program is expected to launch in September 2020.

HyperTalent

Project Lead: BC Tech Association

Partners: Accenture, Microsoft, Providence Health Care, SAP, Unbounce, British Columbia Institute of Technology Indigenous Initiatives and Partnerships, Vancity, Vancouver School Board and Arrow Lakes School District 10

Partner Co-Investment: \$144K

Digital Technology Supercluster Co-Investment: \$305K (Total ISI funding - \$68K)

Total Investment: \$449K

This program focuses on K-12 educators and Indigenous youth to tackle the tech talent shortage in British Columbia. HyperTalent will connect more than 100 teachers from rural and urban school districts with educational seminars, tours of leading technology companies, and hands-on experiences building awareness of the kinds of tech careers open to students and support school curriculums with real-world examples. Two of three Lower Mainland-based K-12 teacher professional development days with the Vancouver School Board were completed in November, 2019 and January, 2020. A design-thinking workshop and professional development day for K-12 teachers in the Arrow Lakes School District (in Nakusp, BC) was completed in February 2020. The project's second focal point exposes more Indigenous youth to the tech sector through 12 four-month internship positions with leading technology

companies for students to gain hands-on work experience. The project had to pause due to impact of the COVID-19 pandemic on the operations of the Consortium Members and it is anticipated the remaining teacher PD day and internships will be completed in Fall 2020.

Competency Assessment Mapping Platform for Industry Responsive Education (CAMPFIRE)

Project Lead: British Columbia Institute of Technology
Partners: Immigrant Employment Council of BC, LifeLabs.

Partner Co-Investment: \$211K
Digital Technology Supercluster Co-Investment: \$306K (Total ISI funding - \$69K)
Total Investment: \$517K

CAMPFIRE, the Competency Assessment Mapping Platform for Industry Responsive Education pilot program, aims to provide the kind of skilled talent employers need, and rewarding employment for workers who need new skill sets. This project will help connect 600 early- and mid-career workers with the digital skills and competencies they need to transition to new work over the next 24 months. The project faced a slow down due to impact of the COVID-19 pandemic on the operations of the Consortium Members. The project is due to kickoff in May 2020.

Design for Startups

Project lead: Emily Carr University of Art + Design
Partners: A&K Robotics, CoPilot AI

Partner Co-Investment: \$185K
Digital Technology Supercluster Co-Investment: \$289K (Total ISI funding - \$65K)
Total Investment: \$474K

Design for Startups bridges the gap between technology and design for improved product development. The project brings together the technology and design communities by connecting designers with tech startups through intensive 12-week design problem-solving sessions. This is a fundamental step in building new talent capacity paving the way for a brighter future for design-led technology companies in B.C. The winter cohort launched in January 2020 with 10 selected students and employers after an extensive interview and matching process. All student participants are females, and of those, 80% are non-white. The project had to pivot near the end of the first cohort due to impact of the COVID-19 pandemic on the operations of the Consortium Members and Emily Carr University of Art + Design having to close its campus. All students successfully completed, however, unfortunately, the student and industry showcase had to be cancelled.

Diversifying Talent in Quantum Computing

Project lead: University of British Columbia
Partners: D-Wave, UBC Geering Up Engineering Outreach, Microsoft

Partner Co-Investment: \$245K
Digital Technology Supercluster Co-Investment: \$257K (Total ISI funding - \$58K)
Total Investment: \$502K

The field of quantum computing is exploding with the power to solve our most challenging problems and the demand for talent in this emerging field is high. With British Columbia emerging as a leader in quantum computing, the 24-month Diversifying Talent in Quantum Computing program will work with K-12 and Indigenous education leaders to ensure that youth and young adults are aware of the career opportunities presented by this revolutionary technology. K-12 student outreach, community workshops and beta testing of the learning kit content began in January 2020. The project had to pivot in its face-to-face and Indigenous community visits due to impact of the COVID-19 pandemic on the operations of the Consortium Members. Planning is underway for a digital activity series to include guided workshops and games, in lieu of the face-to-face education programs, will be rolling out in April and planning to be re-evaluated in summer 2020 with the Fall re-opening of schools and resuming of community activities.

DATA COMMONS

New business insights through new platforms to collect, store and analyze data.

Earth Data Store

Project Lead: Urthecast

Partners: Microsoft, Sparkgeo, University of British Columbia, University of Victoria, Geoscience BC

Partner Co-Investment: \$2.2M

Digital Technology Supercluster Co-Investment: \$1.7M (Total ISI funding - \$1.7M)

Total Investment: \$3.9M

This project has collected, standardized, and secured data from multiple sources such as earth observation satellite imagery and environmental sensors, for predictive purposes. Through interactive visual maps and running deep learning algorithms, the project has demonstrated an improved capability to observe and protect remote areas, and enable real-world applications in protecting aquatic ecosystems and predicting environmental disasters. The project is on track to complete by the end of 2020.

Forest Machine Connectivity

Project Lead: Mosaic Forest Management, Canfor

Partners: University of British Columbia, Lim Geomatics

Partner Co-Investment: \$4.5M

Digital Technology Supercluster Co-Investment: \$3.2M (Total ISI funding - \$3.2M)

Total Investment: \$7.7M

This project will use an Industrial Internet of Things (IIoT) network of 'smart' devices to monitor, collect, exchange, analyze, and deliver valuable insights to contractors, machine operators, and managers in the timber harvesting supply chain. This data will improve productivity, efficiency, and competitiveness of Canada's wood products manufacturing industry. The project start is delayed due to impact of the COVID-19 pandemic on the operations of the Consortium Members. The project is scheduled to start in 2021.

Precision Agriculture to Improve Crop Health

Project Lead: Terramera

Partners: Agriculture and Agri-Food Canada, Canada's Michael Smith Genome Sciences Centre, Compression AI, Genome BC, Sightline, Simon Fraser University, Trent University, University of Saskatchewan

Partner Co-Investment: \$4.5M

Digital Technology Supercluster Co-Investment: \$2.5M (Total ISI funding - \$2.5M)

Total Investment: \$7.0M

In the face of climate change, increasing threats from pests and pathogens are impacting our environment and food security. This project is developing new pest and pathogen controls through the application of computational biochemistry, genomics, machine learning, and robotics, to manage disease in field crops, minimize the use of pesticides, and secure export markets. The project started work in January 2020. During these early days, the project has developed a new machine learning model that has seen 60% compression rate for raw uncompressed images. This improved data compression capability will accelerate the on-going efforts to develop the algorithms to better predict active ingredients for the treatment of wheat leaf rust.

Fresh Water Data Commons

Project Lead: Carl Data Solutions (including Astra.Earth, I4C Innovation)

Partners: Genome BC, Living Lakes Canada, Microsoft, Teck Resources Limited, University of Victoria

Partner Co-Investment: \$3.3M

Digital Technology Supercluster Co-Investment: \$1.6M (Total ISI funding - \$1.6M)

Total Investment: \$4.9M

Water is a precious resource under significant pressure globally as a result of climate change, and human and industrial activities. This project is integrating various sources of data to better understand ecosystem health, specifically of major water systems such as the Columbia Basin, will better inform water use, conservation, and management. The project is developing the software platform, FlowH2O, focusing on the enhancement of data set visualization to facilitate data utilization for water resource management excellence. The project is preparing a FlowH2O alpha-version to demonstrate ingestion, analysis and presentation of solar-powered sensors installed across the Anderson creek.

DIGITAL TWINS

Creating virtual replicas of production environments for real-time operations management, simulation, modelling and training.

Predictive Analytics for Manufacturing Processes

Project Lead: D-Wave Systems Inc.

Partners: Avcorp Industries, Inc., Solid State AI, Simon Fraser University

Partner Co-Investment: \$235K

Digital Technology Supercluster Co-Investment: \$186K (Total ISI funding - \$186K)

Total Investment: \$421K

Quantum computing and advanced machine learning is analyzing chemical, temperature, volt- age and other critical data in the metal finishing manufacturing line for complex aircraft parts. This project saw new insights towards the development of a digital twins for optimized large equipment manufacturing processes such as aircraft components. The project is developing a prototype application taking the learnings to support more effective mapping, cleansing, and processing of industry data. The project is on track to complete by November 2020.

The Learning Factory Digital Twin

Project Lead: Avcorp Industries Inc.

Partners: AMPD, Boeing, Convergent Manufacturing Technologies, LlamaZOO, Microsoft, University of British Columbia

Partner Co-Investment: \$2.7M

Digital Technology Supercluster Co-Investment: \$2.1M (Total ISI funding - \$2.1M)

Total Investment: \$4.8M

A proof-of-concept to develop a digital twin of the manufacturing process of aerospace components. Having successfully deployed a digital architecture for high performance computing, the project is now focusing on the digitization of existing industrial production lines for aircraft parts to create new, digitally driven industrial tools for spatial planning, asset state determination, and Foreign Object detection. This effort is augmented through the integration of advanced materials research with emerging manufacturing technologies to bring newly defined processes into the advanced aerospace production environment.

Augmented Reality for Maintenance and Inspection

Project Lead: Boeing

Partners: Finger Food Advanced Technology Group, Simon Fraser University

Partner Co-Investment: \$335K

Digital Technology Supercluster Co-Investment: \$229K (Total ISI funding - \$229K)

Total Investment: \$564K

Imagine you are an engineer who needs to document damage on the surfaces of commercial aircraft or large shipping vessels. This project is creating a tool to enable the display of data in an augmented reality view to improve the safety, accuracy and cost of inspections of these very large objects. The project is currently integrating the improved machine learning model into Boeing's existing maintenance mobile applications to demonstrate real-world application. The project is on target to complete by November 2020.

Advanced Analytics for Flood Mitigation

Project Lead: MDA

Partners: Radical.io, Axiom Data Science, Simon Fraser University, City of Richmond, Kwantlen Polytechnique University

Partner Co-Investment: \$1.4M

Digital Technology Supercluster Co-Investment: \$1.4M (Total ISI funding - \$1.4M)

Total Investment: \$2.8M

This digital twin project will monitor water drainage infrastructure and provide real-time data to mitigate against floods and other hazards and improve community safety. This project is currently undergoing a change in scope with new municipal customers to incorporate air quality in the project contracting.

PRECISION HEALTH

Improving the prevention, early diagnosis and treatment of disease through innovative digital technologies for better health and wellness for citizens.

Tailored Health – Pharmacogenetics

Project Lead: Telus Health

Partners: Lifelabs, GenXys, Genome BC, Emily Carr University of Art+Design

Partner Co-Investment: \$2.7M

Digital Technology Supercluster Co-Investment: \$2.0M (Total ISI funding - \$2.0M)

Total Investment: \$4.7M

With a simple cheek swab and pharmacogenetic tools, physicians and pharmacists can tailor for each patient, the type and dose for any of the 900+ most commonly prescribed medications. The project has defined the architecture and the processes to effectively integrate the project members delivery solutions and services to bring pharmacogenetics to physicians and pharmacists in order to ensure patients get the right medicine, in the right dose, at the right time, thereby improving patient outcomes, reducing harmful drug interactions, and improving the cost effectiveness of our pharma system. The project team has completed an initial study to understand the barriers to pharmacogenetics in the Canadian context. The project is currently on pause due to impact of the COVID-19 pandemic on the operations of the Consortium Members. The project is scheduled to start work January 2021.

Dermatology Point-of-Care Intelligent Network

Project Lead: Change Healthcare

Partners: MetaOptima, Careteam, Providence Health Care, University of British Columbia, University of Victoria, BC Cancer Agency

Partner Co-Investment: \$5.2M

Digital Technology Supercluster Co-Investment: \$3.6M (Total ISI funding - \$3.6M)

Total Investment: \$8.8M

Imagine being able to quickly diagnose deadly skin cancer by taking a photo. Early detection of skin cancer is critical to improving the chances of survival, yet there can be up to a six month wait time to see a dermatologist. By using AI-powered medical imaging that incorporates dermatology and pathology data and images, patients can get diagnosed in days, rather than months, anywhere in Canada. The project is integrating the project members delivery solutions and initiated the first set of physician recruitments to validate the solution, patient journey and physician experience. The project faced a slow down due to impact of the COVID-19 pandemic on the operations of the Consortium Members.

Secure Health and Genomics Platform

Project Lead: Microsoft

Partners: Lifelabs, University of British Columbia, Genome BC, Provincial Health Services Authority, Deloitte, DNASTack, Molecular You

Partner Co-Investment: \$2.0M

Digital Technology Supercluster Co-Investment: \$1.4M (Total ISI funding - \$1.4M)

Total Investment: \$3.4M

This project is accelerating the ability of Canadian innovators, researchers and health providers to create innovative, more accessible precision-health treatments for all Canadians. The project completed in the spring of 2020 and resulted in a framework for technical, governance and sustainment for a pan-Canadian platform for researchers, clinicians, startups, pharmaceutical companies, academic institutions, hospitals and our health authorities

Intelligent Network for Point-of-Care Ultrasound

Project Lead: Providence Health Care

Partners: Change Healthcare, Clarius, Providence Health Care, Rural Coordination Centre of B.C., University of British Columbia

Partner Co-Investment: \$1.9M

Digital Technology Supercluster Co-Investment: \$653K (Total ISI funding - \$653K)

Total Investment: \$2.5M

Ultrasound imaging is used to provide an early diagnosis of many medical conditions, including urgent heart and pregnancy conditions. This project combines portable ultrasound devices, imaging technology, and machine learning to enable family physicians in rural British Columbia to make accurate diagnoses, regardless of where patients live. The project started work in January 2020. In response to the COVID-19 pandemics, the project pivoted to include lung ultrasounds and an acceleration of the deployment of ultrasound devices. The project will see a deployment of the 50 ultrasound devices by the end of summer 2020. The project is prioritizing the AI lung model in conjunction to developing the tools to educate and support the physicians.

Personal Health Wallet

Project Lead: Molecular You

Partners: Stone Paper Inc., University of British Columbia

Partner Co-Investment: \$834K

Digital Technology Supercluster Co-Investment: \$545K (Total ISI funding - \$545K)

Total Investment: \$1.3M

By applying blockchain technology to personal health data, individuals will have full custody of their health data in a secure environment. This allows patients to determine with whom they will share their health data, while also providing informed consent for that sharing. The project started work in January 2020 and is currently completing the solution design for the mobile platform to facilitate individuals securely share health data. Work has also started to define the requirements for research partners and insurance/payers to be brought on to the platform.

Reducing Opioid Use for Pain Management

Project Lead: Careteam Technologies

Partners: BC Children's Hospital Research Institute, Excelar Technologies, Joule, Health Canada, National Research Council of Canada, Providence Health Care, Thrive Health, University of British Columbia, Xerus Medical

Partner Co-Investment: \$2.6M

Digital Technology Supercluster Co-Investment: \$1.7M (Total ISI funding - \$1.7M)

Total Investment: \$4.3M

This active monitoring system will enable physicians to improve pain management, and proactively manage opioid prescriptions and their use in surgery patients. This technology will allow for personalized evaluation of a patient's use of opioids, response to pain, nausea, mobility, and coinciding sleep habits – all critical elements in optimizing treatment and minimizing the risk of opioid addiction. The project started work in January 2020 but faced a slow down due to impact of the COVID-19 pandemic on the operations of the Consortium Members. The project is finalizing the integration architecture and patient risk assessment and journey.