



SUBJECT	UBC Community Health & Wellbeing Cloud Innovation Centre, powered by AWS
SUBMITTED TO	Learning & Research Committee
MEETING DATE	February 4, 2021
SESSION CLASSIFICATION	Recommended session criteria from Board Meetings Policy: OPEN
REQUEST	For information only - No action requested
LEAD EXECUTIVE	Andrew Szeri, Provost and Vice-President Academic, UBC Vancouver
SUPPORTED BY	Simon Bates, Associate Provost, Teaching & Learning Kendall Ho, Academic Director, Cloud Innovation Centre Mariane Schroeder, Senior Associate Director, Teaching & Learning Technologies Jennifer Burns, Associate Vice-President Chief Information Officer Jack Hou, UBC Student, Computer Engineering, APSC Nicole Pereyaslavsky, UBC Student, Psychology, ARTS Colin Zhang, UBC Student, Computer Science, SCIE

EXECUTIVE SUMMARY

UBC’s opportunity to deliver on the promise of the goals of “Shaping UBC’s Next Century” rests in part on our ability to leverage technology to empower its students, faculty and staff into new ways of teaching, learning and conducting research. Technology capabilities are changing rapidly, and UBC has traditionally been at the forefront of experimenting and adopting these technologies to pursue its goals, across domains of teaching, research and operations. In 2019, UBC ITAC discussed the need for a framework to support a digital future, encompassing space for digital innovation and experimentation. Examples of this, at the teaching-research nexus, include the Emerging Media Lab (EML) established in April 2017 and, more recently, the UBC Cloud Innovation Centre (CIC).

The CIC is a partnership between UBC and Amazon Web Services (AWS). It was established in July 2019, the first of its kind in Canada (and is currently one of 12 worldwide), and is funded through the UBC budget process. The existing standard AWS NDA pre-dates the CIC (2017). The CIC provides opportunities for students, faculty and staff to work with new and emerging cloud technologies and services, and apply that knowledge into their work, studies and teaching. The over-arching theme of the CIC projects is Community Health and Wellbeing, and they take the form of real-world challenges that have the potential to materially benefit British Columbia, Canada and the world. Challenge projects can be proposed through collaboration with stakeholders within and beyond UBC, and interdisciplinary student teams work on projects as co-curricular experiential learning opportunities.

The UBC CIC is a UBC organization and reports to the Provost and Vice President Academic at UBC Vancouver. The agreement with AWS is for three years, with the possibility of extension for a further two years. It operates in accordance with the Board Policies, including (but not limited to) FM 2 (Purchasing), FM 6 (Fundraising Policy), and SC 14 (Information Systems Policy and Security Standards).

Prior to the CIC’s establishment, a UBC transition committee was struck to plan for its launch. This committee developed the mission, principles and challenge selection criteria. A UBC Advisory Committee consisting of senior faculty leaders on both campuses was formed post-launch to advise on priorities and strategy.

Combining Amazon’s innovation methodology with the depth of breadth of UBC’s academic strengths, dedicated UBC (3 FTE) and Amazon (3 FTE) staff work with students, staff and faculty, as well as community, government or not-for-profit organizations to define challenges, to engage with subject matter experts, to identify a solution and to build a Proof of Concept (PoC). All of the innovation challenge outputs, including the PoC, are published as open source using the [MIT license](#), for others to access and use. Neither UBC nor AWS claim any IP.

The selection criteria of CIC challenges are:

- **Scope and fit** – what is the challenge aiming to address? Does it address current gap(s) in community health and wellbeing? Does it contribute to the common good?
- **Feasibility** – how feasible are the challenge goals given time and resource constraints?
- **Partnerships and stakeholders** – what connections within and beyond UBC does the challenge explore, create or strengthen?
- **Impact potential** – what subsequent opportunities might the outcomes of this challenge lead to?

The relevant data is always under the control of the organization presenting the challenge (sponsor). Sponsors have used open data (e.g., Serratus), fully anonymized data (e.g., MRI), or simulated data sets (SMART on FHIR) for the purpose of creating the PoC. To date, no project has required the use of personally identifiable information or protected health information. For UBC-based projects, we consult with OUC as needed and assist sponsors with the PIA process. The PoC is handed off to the sponsor with full implementation documentation; there is no obligation for the challenge sponsor to implement the solution, or to use AWS services if they do.

UBC researchers are typically referred to ARC for cloud services for research initiatives. CIC consults with UBC faculty for their professional expertise from time to time in the creation of POCs, both as advisors and project participants. Recent UBC grads and current UBC graduate and/or undergraduate students are involved in all of the projects, either as a participant in the innovation process or as part of a work-integrated learning term. To date, 12 students have completed 4 or 8 month co-op terms, 11 students are currently employed, and 3 students continued part-time after completion of the work term.

Ten projects have been completed in the last year, including an innovative AI project to detect COVID on CT Scans and an improvement to the PHSA MRI booking system using natural language processing and machine learning. Twelve projects are currently in the prototype phase including ones for EComm 911, BC Emergency Services and UBC Vancouver campus COVID recovery. Multiple others are in various stages of discussion. (Completed projects are available at cic.ubc.ca/projects).

Through these early innovation challenges, the UBC CIC has demonstrated mutual value to UBC and AWS in creating **meaningful partnerships with collaborating organizations**, impacting community health and wellbeing in a positive way through **engagement of interdisciplinary researchers at UBC**, and offering **exceptional learning experiences for students**. Building strong networking with other organizations such as e@UBC and CDL West, PoCs may be moved to production (if desired by challenge sponsors) for **sustainable and lasting impact**. Ultimately, the UBC CIC aspires to generate meaningful knowledge to support policy makers in taking evidence-informed decisions and bring lasting benefits to UBC, and the community beyond its gates.

PRESENTATIONS

1. UBC CIC AWS Presentation



UBC Community Health & Wellbeing Cloud Innovation Centre, powered by AWS

2021 February 4

Dr Simon Bates,
Associate Provost, Teaching & Learning



What is a CIC?



- Co-innovation **collaboration**
- Innovation Challenges **sourced from the community**
- Provides **students** with the opportunity to “Learn By Doing”
- Results published as **open source**

Strategic plan alignment



People and Places:

- Expand mentorship opportunities for UBC students

Transformative Learning:

- Work with Faculties to broaden work-integrated learning opportunities

SWOT



Strengths: Bias for action; meaningful opportunities for collaboration

Weaknesses: Demand and pipeline management (challenged by COVID)

Opportunities: Broaden beyond co-op

Threats: Communicate CIC vision clearly to UBC and external groups

Presentation by UBC Students



- Mr Jack Hou, Computer Engineering, APSC
- Ms Nicole Pereyaslavsky, Psychology, ARTS
- Mr Colin Zhang, Computer Science, SCIE

Key Takeaways:



- Experimentation: Agile, continuous learning
- Know our 'customer' & adapt to their needs
- Empower your students (they are amazing)
- Engage stakeholders
- Contribute to innovation ecosystem at UBC