York University Senate

Notice of Meeting

Thursday, 17 February 2022, 3:00 pm – 5:00pm

Via Videoconference

AGENDA

Page

15min

1. **Chair's Remarks** (M. Roy)
2. **Business arising from the Minutes**
3. **Inquiries and Communications**
   - Report of the Academic Colleague to COU (B. Spotton Visano) 1

20min

4. **President's Items (R. Lenton)**
   a. Winter 2022 term update
   b. School of Medicine Planning
   c. Kudos Report 6

Committee Reports

15min

5. **Executive Committee** (C. Brushwood Rose) 9

15min

6. **Academic Standards, Curriculum and Pedagogy** (M. Bunch) 11
   a. Establishment of a Master of Biotechnology Management Degree Type: Notice of Statutory Motion (Appendix A, page 20)
   b. Establishment of a Specialized Honours Major option in Integrative Arts within BFA degree program in Creative Technologies, Markham Campus, School of Arts, Media, Performance and Design (Appendix B, page 88)

40min

7. **Academic Policy, Planning and Research** (B. Spotton Visano) 129
   a. Annual Report on Research (Vice-President Research & Innovation) (Appendix A, page 133)

10min

8. **Other Business**

P. Robichaud, Secretary

York University Senate

Consent Agenda

Consent agenda items are deemed to be approved or received unless, prior to the start of the meeting, one or more Senators ask that they be dealt with as regular business.

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10. Changes to degree requirements for the MASc and PhD degree programs in Civil Engineering (page, 15)

11. Changes to degree requirements for the BA programs in Communication & Media Studies; and closure of the Specialized Honours degree option within Communication & Media Studies (page, 16)

Report to Senate of the Academic Colleague to COU on the discussions and updates from its meetings December 7-8, 2021

7 Feb 2022

Focused Discussion

Conversation with Denise Baxter, Vice-Provost of Indigenous Initiatives, Lakehead University, on Lakehead's Indigenous Content Requirement

Denise Baxter joined the COU Academic Colleagues to discuss Lakehead University's development of an Indigenous Content Requirement (ICR). The ICR was approved in May 2014, and beginning in the 2016-17 academic year, students were required to take at least one .5 credit course comprising at least 50% Indigenous content. Each academic program is responsible for developing their own implementation plan, which allows for greater flexibility than other ICR programs, such as those that require all students to take the same course. Lakehead provides support to instructors, including an Indigenous curriculum specialist who will work 1-1 with faculty to build content of course, and Zoom events that provide the whole community with access to knowledgeable indigenous people talking in their field.

Lakehead University's Indigenous Content Requirement – Learner Outcomes*
**Academic units are encouraged to develop additional disciplinary learner outcomes.*

1. Identify Indigenous worldviews, knowledge and practices that relate to faculty specialties
2. Identify culturally appropriate ways of engaging Indigenous communities in faculty specialties
3. Demonstrate knowledge of the effects of stereotyping, prejudice, and racism on interactions between First Nations, Inuit, and Métis and others in Canadian society
4. Demonstrate knowledge of Canadian Indigenous peoples' history
5. Analyze the impact of legal decisions on Aboriginal and treaty rights, including the duty to consult
6. Identify approaches to reconciliation between First Nations, Inuit, and Métis and others in Canadian society
7. Demonstrate knowledge of the impacts of colonialism on Indigenous peoples and strategies to resist assimilation
8. Articulate the relationship between land, culture, language and identity in Indigenous communities
9. Demonstrate knowledge of the nature of the relationship between the Crown and Indigenous peoples, as defined by treaties and agreements, or lack of them
10. Contribute to strategies for improving Indigenous communities' well-being.

COU updates

Steve Orsini provided an update on COU's current projects and priorities, including pre-election strategy, SMA3, micro-credentials, *eCampusOntario's* new portal, and the Auditor General's inquiry. Additional information from the Quality Council Update is included here.

Pre-Election Strategy

COU's advocacy is focused on the vital role the sector has to play in helping the province rebuild after COVID-19 and drive a robust economic recovery, framed around four key pillars:

1. helping rebuild a world-class healthcare system;
2. developing job-ready graduates;
3. driving regional economic development and
4. supporting a globally competitive economy.

The fifth pillar then outlines the support universities need to continue supporting the province.

COU is launched its public-facing campaign in December.

Strategic Mandate Agreements (SMA3)

Performance-based funding for Ontario universities is scheduled to be activated for 2022-23.
This is after the government delayed activation for the first two years of SMA3 to mitigate the impacts of COVID on performance evaluation.

Ministry staff has started the process of engagement with the sector and indicated a willingness to work collaboratively to determine COVID-19 impacts on performance-based funding and develop policy for future years. The sector is developing policy options to engage with the ministry.

The Faculty Activity and Faculty Compensation reporting metrics are scheduled to be implemented for 2022-23. These metrics are not tied to performance but will be made public.

Micro-credentials

COU is continuing to work with government to ensure they have a full appreciation of universities' continuing education offerings.

From the Quality Council update:
While there is a great deal of interest in micro-credentials there continues to be a wide range of views and definitions (sometimes contradictory in scope). There is currently limited regulation and a desire for universities to maintain their own flexibility in delivery.

Questions remain on how to create a process that does not compete with Degrees, Certificates and Graduate Diplomas

Although Quality Council has previously indicated it would prohibit stacking of MCs to become a degree, it may need to be revisited/clarified as some institutions look to the creation of stackable graduate level credentials.

There is a need to define an internal framework / process associated with the development and "approval" of micro-credentials. Some parameters could include:

- only academic units can create these, and that the relevant Dean must be aware of and "approve" it
- will not allow the stacking/laddering of micro-credentials to become a degree
- looking at bridging options, pre-university admission to ladder / provide access to an undergraduate program

Micro-credentials and eCampusOntario

The micro-credential portal is available at https://micro.ecampusontario.ca/ It is expected to list OSAP-approved college and university micro-credential in the near future.

Micro-credential Pilots include:
Micro-credential in Patient Navigation
Create new content to issue stackable micro-credentials in patient navigation. *Partners: York University, Vision Loss Rehabilitation Canada.*

Micro-credential in Health Coaching and Patient Navigation
Adapt existing content to issue micro-credentials to health care workers in health coaching and patient navigation. *Partners: York University, Markham-Stouffville Hospital, Black Creek Community Health Centre, Sunnybrook Health Sciences Centre, University Health Network, Access Alliance Community Health Centre, Lassonde School of Engineering.*

Auditor General
On December 1,2021 the Auditor General released value-for-money audits of the public colleges and private career colleges. The reports raised significant concerns that

programs at some private colleges are not meeting provincial standards, and that public college non-degree programs have not been assessed for quality in many years.

The reports recommended that the Ministry:

- Develop a post-secondary education strategy to strengthen the link between labour market needs and programs offered by both public and private colleges.
- Develop a formal and comprehensive strategy for the diversification of international students for the public college sector.
- Require that public colleges establish risk mitigation plans, with clear action plans, timelines, and measurable outcomes, that align with the Ministry's strategy.
- Require public colleges to report annually on their status of achieving their goals and take corrective actions when necessary.
- Complete an assessment of whether the public colleges that received COVID-19 funding and subsequently posted surpluses met the eligibility criteria; and recover any excess of COVID-19 funding support based on the results of those assessments.

Sector Perspectives

Three-Year Degrees and public colleges
Colleagues received a briefing on developments related to the expansion of 3-year degrees, including by public colleges. Expanding degree-granting authority has been a major theme in Ontario colleges' advocacy for years. It is worth noting that three-year bachelor degrees offered by universities are an international norm.

The college sector was established in the 1960s to create a binary, differentiated system:

- Universities to offer bachelor and graduate degrees.
- Colleges to offer diploma programs more directly connected to the labour market.

This binary system was not designed to provide transfer infrastructure between colleges and universities.

Opportunities for transfer were provided through the College University Consortium Council (CUCC, est. 1996), which became the Ontario Council on Articulation and Transfer (ONCAT, est. 2011).

In 2000, the Postsecondary Education Choice and Excellence Act was introduced to bring private and offshore competition into the sector. An unintended consequence was the public colleges' leverage of the Act to offer degrees.

On October 7, 2021, the government introduced the Red Tape Bill: Supporting People and Small Businesses Act. The Bill includes government consideration of expanding colleges' degree-granting authority, as well as increasing private institutions' access to OSAP and international students. (See update to Senate December 2021)

YORK UNIVERSITÉ UNIVERSITY

PRESIDENT'S **KUDOS REPORT**

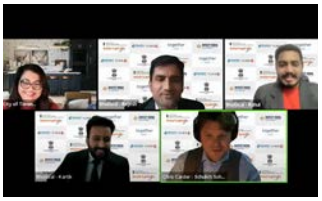
FEBRUARY 2022

Sammie Dhillon (MMGT '22 Candidate) is the recipient of the second edition of the Danone L.I.F.T. (Lead and Inspire Female Talent) Leadership Award, receiving a cash prize of $3,000 and a mentorship opportunity with Caroline Duguay, Head of Communications from Danone Canada. L.I.F.T. is an employee resource group sponsored by Danone, which is committed to highlighting and supporting women's leadership in Canada and throughout North America.

A group of students from the Schulich School of Business won the coveted title at the 2022 Jeux du Commerce Central, the largest undergraduate business school competition in Central Canada. A team of 52 undergraduate students from Schulich competed and delivered a groundbreaking performance with 17 podium finishes across categories such as debate, finance, and business strategy, in addition to the coveted 'School of the Year' title. The team was led by Co-Captains Nain Mehta and Nathan Corbett (BBA candidates '22). Faculty Advisor Kevin Lyons (MBA '99) coached the students.

First-year Bachelor of Commerce in Information Technology student Emmanuella Owusu has been awarded the Melissa Grelo Entrance Award for Black and Indigenous Excellence. The award is granted to a woman entering the first year at the School of Information Technology or the Department of Economics, in York University's Faculty of Liberal Arts & Professional Studies. Melissa Grelo (BA, psychology and French) is a celebrated alumna, well-known for her work moderating CTV's *The Social* and her other successes in television broadcasting.

York University Faculty of Science Professor Dawn Bazely and Faculty of Education Professor Don Dippo are among 30 recipients of the Minister of Colleges and Universities' Awards of Excellence. The awards, which were launched in 2020, recognize the leading work of Ontario's faculty and staff during the pandemic. Bazely is the recipient of the Minister's Award of Excellence in the Future Proofing category, while Dippo is the recipient in the Equality of Opportunity category.



Top students from the Schulich School of Business and the Lassonde School of Engineering competed at TOGETHER 2022 — a unique seven-day entrepreneurship bootcamp and venture competition hosted by Schulich and Startup India that connects 100 teams of Canadian and Indian student entrepreneurs and innovators with 200 mentors and over 50 speakers, trainers, sponsors, and donors. Team BhuGoal, consisting of Kartik Vij, Palak Bahl, Rajesh Kumar (MBA Candidate '23) and Anishka Marwah (MMKG Candidate '22), won first place.

Alumna Emily Nield (MBA '20) was awarded "Young Leader of the Year" by the Canadian Real Estate Forums. Emily helped develop Epic Investment Services' first climate change strategy, which aims to decarbonize the company's buildings while preparing them for the impacts of climate change. This strategy will be applied across the company's portfolio, which is comprised of 30+ million square feet of space in office, retail, industrial, and multi-family properties across the country.

York University's representative at the 2022 Winter Olympic Games in Beijing, China, is alumna Cynthia Appiah (BA '13). Cynthia has not only earned a spot on Canada's national bobsled team, but was also named to the Canadian Olympic Committee's "Glory from Anywhere" campaign with eight other Olympians. The campaign highlights the accomplishments of Team Canada athletes to showcase that all Canadians have the potential to inspire people, regardless of their background, upbringing, or socioeconomic status.

York's student virtual assistant, SAVY, won the 2021 Gartner Eye on Innovation Award for Higher Education, a prestigious international award recognizing higher education institutions worldwide for their innovative use of technology to drive best-in-class initiatives. SAVY was the winner in the Student Experience category.

The Faculty of Liberal Arts & Professional Studies (LA&PS) announced the 2020–21 recipients of the LA&PS Awards for Distinction in Research and the Dean's Awards for Excellence in Teaching:

LA&PS Award for Distinction in Research: David Goldstein, Established Researcher category; Margaret Schotte, Emerging Researcher category.
Dean's Award for Excellence in Teaching:
Andrea Kalmin, Teaching Assistant category; Ryan James, Contract/Adjunct/CLA category; Tsvetanka Karagyozova, Tenured/Tenure Stream category.

York alumna Jessica Parish is a recipient of the European Union's Marie Skłodowska-Curie Actions Postdoctoral Fellowship. The two-year fellowship is presented by the European Commission's Horizon 2020 competition and will support Parish's research project, "Towards a Just Climate Future? Urban sustainability, financialization, and the global housing crisis."

A research project aimed to redress ideologies and systems of anti-Black racism in the University has culminated in a first-of-its-kind database for Black Canadian readings and films. The project, titled "Teaching Against Anti-Black Racism and Toward Black Inclusion," was conducted as part of the Dean's Award for Research Excellence (DARE) program for undergraduate students enrolled in the Faculty of Liberal Arts & Professional Studies.

English Professor B.W. Powe has earned a nomination for the prestigious 2022 Medium & Light Award, which recognizes the universal dimensions of the life and work of renowned Canadian philosopher Marshall McLuhan. The award winner will be announced during the 23rd Annual Convention of the Media Ecology Association this summer.

Faculty, staff and students came together to support the York Cares United Way Campaign to raise funds to help vulnerable members of the community facing crisis. The 2021 campaign was a success, bringing in more than $183,000.

The 2021 campaign committee, Division of Advancement's Caterina Elzbet and Nadia Dar, engaged many volunteers across the University and were assisted by the following staff: Stephen Childs, Karen Furlong, Tien Do-Ky, Alexandra Lucchesi, Ashley Goodfellow Craig, Vanessa Thompson, Ayesha Amanulla, Mario So Gao, Caitlin Drake Smith, Marion Frankian, Isabelle Montagnier, Johanne Roberge, Sue Bulof, Sharon Elliot, Vina Sandher, Lyna Truong, Donna Cope, Meaghan Morris, Mike Kasaboski, Scott Labron, Amal Awini, Farah Rafiq, and 30 executive assistants across the University who engaged their teams.

APPOINTMENTS

Brad Strom has been appointed York University's new Chief Information Officer, commencing February 21. He brings more than 25 years of executive management experience and over 16 years of digital strategy and information technology expertise to the role.

Victoria Sigurdson has been appointed Media Collections Librarian at the York University Libraries, commencing February 1. Sigurdson has dedicated her career to empowering teaching, learning and research communities through the development of responsive university library services and collections. She is a graduate of York University's Bachelor of Fine Arts (Studio) program and holds a master's degree in library and information studies from Dalhousie University.

Vinitha Gengatharan, Executive Director, York International, has been appointed to the Canadian Bureau for International Education Board of Directors.

Biology Professor Tamara Kelly has been appointed the Faculty of Science's inaugural Pedagogical Innovation Chair in Science Education for a three-year term, which began in September 2021.

Executive Committee – Report to Senate

At its meeting of 17 February 2022

For Information

a. **Monitoring the Disruption**

Following its meeting on 8 February, the Executive Committee issued and circulated to Senators a communication on the 2022 Winter term providing guidance to instructors on options and responsibilities in sustaining program delivery and providing accommodation to students with extenuating circumstances tied to the pandemic. It is posted at https://www.yorku.ca/secretariat/wp-content/uploads/sites/107/2022/02/11-February-2022-Communication.pdf.

The Committee had a lengthy discussion of questions and concerns shared from members and Senators pertaining to the transition to in-person delivery of programming this term. Just as the current circumstances of York's community vary, the opinions on how best to manage them differ. The advice conveyed in the 11 February 2022 communication reflects a careful weighing and balancing of the governing principles stated in the Senate Disruptions policy, the agreed upon plan to resume in-person teaching in the Winter term as health regulations permitted, the expectations of many students to return to campuses, and the realities of the ongoing challenges of many other students and faculty members. Executive is maintaining a watchful monitoring of the term's progress.

Executive welcomes discussion at the Senate meeting.

b. **Interim Call for Expressions of Interest in Vice-Chair / Chair Position**

Senate Executive Committee has issued a call for expressions of interest in the position of Senate Vice-Chair / Chair to fill the vacancy as of 1 April 2022. Information about the opportunity and the criteria has been posted on the Senate Elections website at https://www.yorku.ca/secretariat/senate/senate-vice-chair-election/ .

Senators are strongly encouraged to assist in the process of identifying prospective candidates. An online form is available for the purpose of suggesting the names of individuals; it is posted at https://univsec.apps01.yorku.ca/forms/view.php?id=26283.

Questions on this process may be communicated directly to Cheryl Underhill of the University Secretariat (underhil@yorku.ca).

Executive Committee – Report to Senate

Approval of Members of Senate Committees Nominated by Student Senators

The Executive Committee has approved the individual listed below as nominated by student Senators to serve on a Senate committee for the 2021-2022 governance year effective immediately.

Tenure and Promotions

Yashna Manek, Undergraduate, Mathematics for Education, Faculty of Science

Mario Roy, Chair
Chloë Brushwood Rose, *Vice-Chair*

Academic Standards, Curriculum and Pedagogy Committee

Report to Senate

At its meeting of 17 February 2022

Notice of Motion

a. Establishment of the Degree of Master's of Biotechnology Management • Markham Campus • Faculty of Science

It is the intention of the Academic Standards, Curriculum and Pedagogy Committee to make the following recommendation in a statutory motion:

> **That Senate approve the establishment of the degree of Master's of Biotechnology Management.**

Rationale:

As set out in Appendix A, the Master's of Biotechnology Management is designed as a Combined Degree Program[1]. That is, it is a course-based professional graduate program that will see its graduates awarded two credentials upon successful completion of the program requirements, a Master's in Biotechnology Management degree and a Diploma in Management. The degree program is designed to provide students who hold a Bachelor of Science degree in Biology, Biological Sciences, Biotechnology, Life Science, or related discipline, and have little/no work experience in Biotechnology, with practical interdisciplinary training in Biotechnology and Management to enhance their competitiveness and employability in the biotechnology management related sectors. Typically, a professional master's degree is a terminal degree that does not lead to entry into a doctoral program. Such programs are designed to help students to prepare for a career in specific fields, such as occupational therapy, physical therapy, finance or business, among others. A professional master's degree often puts a great deal of focus

[1] A program of study involving two programs of different types in which successful completion of the requirements is confirmed by a separate and different degree document being awarded by each program. The combination may comprise two graduate programs, two undergraduate programs or a graduate and an undergraduate program. For Combined Degree Programs that involve a graduate program, the combination typically involves at least one "professionally" oriented program. Combined Degree Programs may be structured such that students pursue the two programs concurrently or consecutively.

on real-world application, with many requiring students to complete internships or projects in their field of study before graduation.

The curriculum adopts courses also offered through the Graduate Diploma in Biotechnology (being proposed in Item 6b below) to address biotechnology learning outcomes and, as such, meets the spirit of the Quality Assurance Framework definition of a Combined Degree Program. It also adopts courses offered through the Graduate Diploma in Management to establish a foundation in management. As such, this program will be a distinct program for York University, as the only dual program where students earn both a Master's degree in Biotechnology and Graduate Diploma in Management in 20 months. The curriculum is also designed so that students may opt to leave the program with the Graduate Diploma in Management upon completion of an integrated capstone course offering. The program will be housed in the Faculty of Science and offered at the Markham Campus.

Decanal statements from the Faculty of Liberal Arts & Professional Studies and the Faculty of Science confirm consultation on and support for the proposed degree. Statements from the anchor Dean and Provost confirm the resources for the new program.

Once the degree type is approved by Senate, a companion resolution to establish the Master of Biotechnology Management degree program will come forward for approval.

Approvals: Faculty of Science Faculty Council on 10 November 2021 and ASCP on 26 January 2022. The proposal received preliminary concurrence from APPRC on 10 February 2022 pending a few additional matters to be clarified.

Supporting documentation provided in ASCP Appendix A.

FOR ACTION

b. Establishment of a Specialized Honours Major option in Creative Technologies within BFA degree program in Integrative Arts, Markham Campus • School of Arts, Media, Performance and Design

ASCP recommends that,

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

Senate approve the establishment of a Specialized Honours Major option in Creative Technologies within the BFA degree program in Integrative Arts, Markham Campus, School of Arts, Media, Performance and Design, set out as Appendix B, effective FW2023-2024.

Rationale:

As outlined in Appendix B, the Specialized BFA in Creative Technologies is proposed as a major modification of the existing Integrative Arts program at Keele Campus as a new major for the Markham Campus. At Markham, the Creative Technologies major option will centre on critical entrepreneurship by blending creative practice and theory with technological expertise and experiential learning in community contexts. While overlapping in program structure and spirit, Creative Technologies offers a range of courses available only in Markham, unlike the Integrative Arts which is open to a spectrum of in-person studio and studies courses offered by AMPD departments at the Keele campus.

The Creative Technologies program will enable students to pursue courses in three broad pathways:

- **Engaging Research**: Research-Creation in Creative Technologies
- **Reshaping Industry:** Creative Technologies Industry Engagement
- **Building Community:** Participatory Creative Technologies

These pathways are not defined as separate streams, but rather as areas of emphasis from which students can opt to select courses. Crucially, students can move between these pathways as they pursue their degree. While collaboration, sustainability and social change are the core program values, innovation, decolonization, and entrepreneurship are more pronounced in certain pathways than others.
The program emphasizes collaboration, strategies for continuous learning, and effective communication across diverse settings as required for the future of work in the 21st century. Creative Technologies de-emphasizes the individual artist or creator as knowledge producer and energizes collaborative project development across all four years of study. In doing so, the program underscores the process of collaboration itself as the site of creative practice, while providing students with the foundational knowledge needed to navigate new and evolving fields, and to create new jobs for themselves and for others.

The proposed Creative Technologies BFA's emphasis on combining creative practice with technological tools, collaborative experiences at all levels of study, decolonization and social justice aligns with York University's larger academic vision in Markham: to develop a campus "centred on technology and entrepreneurship". Moreover, Creative Technologies is committed to the priorities outlined in York's University 2020-2025 Academic Plan, emphasizing in particular that "digital inter-connectivity and physical mobility of people generate complexity but also immense possibilities to accelerate collaboration and problem solving" and that "technology is simultaneously enabling, enhancing, and disrupting every sphere of life and work, as well as revolutionizing how we all learn, think, and create". Creative Technologies is equally well-aligned with AMPD's 50+ Strategic Plan.

As with other programs at Markham, Creative Technologies will enable a student to complete the entire program at the Markham Campus. The program will be facilitated through a combination of online and blended learning models to enable sufficient numbers of courses to be offered to the first cohorts, and as its teaching complement grows. An advisory council of members representing all departments in AMPD, and which also includes student representatives, will be formed in 2022 for a three-year term, Chaired by the Associate Dean Academic. After the term ends in 2025, a review of the administrative structure for this program will be undertaken.

The proposal includes decanal letters of support from the AMPD Dean, the Dean of Libraries, and the Dean of LA&PS, as well as statements of support from the Faculty of Environmental and Urban Change, and the Departments of Communication and Media Studies, and the Department of Humanities in LA&PS.

Supporting documentation is provided as ASCP Appendix B.

Approvals: School of the Arts, Media, Performance and Design Faculty Council on 10 November 2021, and ASCP 1 December 2021.

For Consent

c. Changes to the Degree Requirements for the MASc and PhD in Civil Engineering • Department of Civil Engineering • Lassonde School of Engineering

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

ASCP recommends that,

> **Senate approve the changes to the degree requirements for the MASc and PhD in Civil Engineering, housed in the Department of Civil Engineering, Lassonde School of Engineering, effective FW2022-2023.**

Rationale:

Two primary changes are being proposed:

1. Clarification of internal promotion requirements from the Master's to PhD program

It is proposed that the internal promotion requirements from the master's to the PhD program be clarified as it is unclear how many courses an MASc student must complete before they can request a transfer, and whether or not the requirement differ depending on how many terms they have completed. The changes will now specify the minimum number of courses (three one-term courses) that must be completed before a student can request an internal promotion. Note that the GPA requirement ("overall A average") and the timeline (after three but no more than five-terms remains unchanged).

In addition, under the current procedure, since a student may request to transfer after one-year without a specified number of minimum courses, the final number of courses each student may take will differ. For example, some students may transfer after three-courses and then take an additional two (for a total of five courses), whereas others may transfer after completing five courses, and then take an additional two (for a total of seven courses). The total number of courses taken by these students is also lower than those students who completed their MASc (with five courses) before starting their PhD (with three courses); these students will have to take a total of eight courses as part of their total course requirements for the two programs.

Thus, it is proposed that the total number of courses be specified for students who transfer from the MASc to PhD programs at eight one-term courses. The rationale for this change is to provide clarity for students wishing to transfer from the MASc to PhD programs and consistency by making the total number of courses the same for those who complete and those who do not complete their MASc before starting their PhD.

2. Adding limits to the number of directed reading courses for Option 1 and Option 3 PhD students

Currently, the program allows Master's students to take two of their five required courses as "directed reading courses", as specified in the calendar copy. This is also applied to PhD students in two of their three required courses though this is not specifically mentioned in the calendar copy. While the program recognizes the need for directed reading courses, having a large fraction of courses is not ideal. The current directed reading course requirements do not help students achieve the "Depth and breadth of knowledge" criterion for our master's and PhD programs and potentially limits interdisciplinary understanding of the field which is a key component of the program's learning outcomes.

To address this, a change to the directed reading course requirements for the PhD students is being proposed, specifically for students in Option 1: a PhD student with a Master's degree in Civil Engineering from York University and Option 3: a PhD student who has transferred from the MASc degree program to the PhD degree program. The proposed change is to limit the number of directed reading courses from two each for the master's and PhD programs, for a total of four, to a total of two directed reading courses for Option 1 and Option 3 students. Option 2 students, a PhD student with a master's degree in Civil Engineering not from York University will still have the ability to take two directed reading courses.

Approvals: Lassonde School of Engineering Faculty Council on 14 January 2022, and ASCP 26 January 2022.

d. Changes to the Degree Requirements and Removal of the Specialized Honours option for the Communication & Media Studies BA and BA Honours programs • Department of Communication of Communication & Media Studies • Faculty of Liberal Arts & Professional Studies

ASCP recommends that,

> **Senate approve the changes to the degree requirements and removal of the Specialized Honours option for the Communication & Media Studies BA and BA Honours programs, housed in the Department of Communication & Media Studies in the Faculty of Liberal Arts & Professional Studies, effective FW2022-2023.**

Rationale:

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

It is proposed that the Specialized Honours option be removed from the program. The Specialized Honours option is a largely a leftover from when Communication Studies was a program within Social Science and was designed to allow students to obtain a COMN degree. Since that time, the Specialized Honours has rarely been used, and no longer enrolls students. As there is no current need to revive the option, it is proposed that it be removed from the calendar copy in order to eliminate confusion for students.

A number of changes to the degree requirements are also proposed including the addition of a requirement that students take an additional three credits at the first-year level; the reduction of the credit value of the three required second-year thematic courses: Politics and Policy, Information and Technology, and Media Culture and Society from six credits to three credits; and the addition of two additional three credit required courses in Communication and Media Theory and Research Methods in Communication Studies at the second-year level. The proposed degree requirement changes are intended to improve and streamline the overall academic experience for students in Communication & Media Studies and promote student retention. They emerged after much departmental discussion, spearheaded by the Curriculum Committee in part in response to recommendations from a recent cyclical program review. The proposed changes respond to a number of interlocking concerns around student retention, program coherence, and the need for a more effective mapping of the curriculum to the program learning objectives. The proposed changes are intended to bring greater clarity to student progression through the degree, offering a more robust early engagement with Communication & Media Studies, a greater flexibility, and a more clearly articulated set of second year requirements. There are the same number of required courses in the current proposal as in the existing curriculum. Overall, the changes are intended to be interconnected and tied to the program's broader academic goals and vision, enabling a more structured and coherent distribution of learning outcomes across different courses.

Approvals: Faculty of Liberal Arts & Professional Studies Faculty Council on 11 November 2021, and ASCP 26 January 2022.

For Information

g. Minor Modifications to Curriculum

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

All of the curriculum changes are effective FW2022-2023:

Faculty of Liberal Arts & Professional Studies

Revisions to the calendar copy for the Japanese, BA program

Minor changes to the program requirements for the BCom Business Minor

Minor changes to the program requirements for the Children, Childhood & Youth BA program

Minor changes to the workshop requirement for the MA, PhD and Graduate Diploma programs in English

Faculty of Health

Minor changes to the calendar copy for the Kinesiology and Health Science BA and BSc programs

Minor changes to the calendar copy for the Psychology, Hons BSc and BSc programs

Minor changes to the degree requirements for the Global Health, BA and BSc programs

Faculty of Health / Faculty of Science

Minor changes to the qualifying period and continuation requirements for the Neuroscience Specialized Hons BSc program

Minor changes to internal transfers and re-entry requirements for the Neuroscience Specialized Hons BSc program

Lassonde School of Engineering

Minor Changes in Degree Requirements in Computer Security BA and BSc programs

Minor Changes in Complementary Studies requirements for BEng programs

Minor Changes in Degree Requirements in the BEng Space Engineering program

School of the Arts, Media, Performance and Design

Minor changes to the course requirements for the Music BFA and BA programs

Osgoode Hall Law School / Schulich School of Business

Change to admission requirements for Schulich MBA component of MBA/JD Program

Schulich School of Business

Academic Standards, Curriculum and Pedagogy Committee Report to Senate

Retirement of Public Sector (PUBL) and Social Sector Management (SOCM) Specializations

Martin Bunch, Chair

YORK UNIVERSITY
Faculty of Science

Proposal for a Master's Program in Biotechnology Management (Combined Degree)

Intended start date: Fall 2023
Location: Markham Campus

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1. Introduction

1.1 Brief Statement of the Program

The **Combined Master's degree program in Biotechnology Management** is a course-based professional graduate program designed to provide students who hold a Bachelor of Science degree in Biology, Biological Sciences, Biotechnology, Life Science, or related discipline, and have little/no work experience in Biotechnology, with practical interdisciplinary training in Biotechnology and Management to enhance their competitiveness and employability in the biotechnology management related sectors. Typically, a professional master's degree is a terminal degree that does not lead to entry into a doctoral program. Such programs are designed to help students to prepare for a career in specific fields, such as occupational therapy, physical therapy, finance, or business, among others. A professional master's degree often puts a great deal of focus on real-world application, with many requiring students to complete internships or projects in their field of study before graduation. Students that complete this combined degree program are awarded two credentials upon completion of the program requirements, a Master's in Biotechnology Management, and a Graduate Diploma in Management.

The program provides students with:

- two credentials: the Graduate Diploma in Management and a Master's in Biotechnology Management.
- Graduate courses in Biotechnology designed in collaboration with industry leaders.
- Practical laboratory training in Biotechnology
- Graduate studies in Management offered through the Graduate Diploma in Management.
- Two paid internships in Biotechnology Management
- A culminating capstone experience with the opportunity to propose solutions and implementation plans bridging Biotechnology and Management
- Course content in science writing and communication
- Interactions with Biotechnology professionals

The Master's in Biotechnology Management is a much-needed addition to York University's program offerings. The curriculum adopts courses also offered through the Graduate Diploma in Biotechnology to address biotechnology learning outcomes. It also adopts courses offered through the Graduate Diploma in Management to establish a foundation in management. As such, this program will be a distinct program for York University, as the only dual program where students earn both a Master's degree in Biotechnology and Graduate Diploma in Management in 20 months (5 semesters; Master's in Biotechnology Management students do not also receive the Graduate Diploma in Biotechnology). The curriculum is also designed so that students may opt to leave the program with the Graduate Diploma in Management upon completion of an integrated capstone course offering. Since the Master's in Biotechnology Management combines coursework from the Graduate Diploma in Biotechnology and the Graduate Diploma in Management, it aligns that of a Combined degree program as defined in the Quality Assurance Framework of the Council on Quality Assurance.

Furthermore, the Master's in Biotechnology Management is designed to address an unfilled need in the Canadian Biotechnology Industry. Throughout the COVID-19 pandemic, an enormous stress

has been put onto to Canadian society, and the biotechnology industry has been leaned on heavily to bring forward high value strategies and pharmaceutical options with many job openings remaining unfilled (BioTalent Canada, 2020). The Master's in Biotechnology Management is designed to increase the available pool of trained talent for the biotechnology industry and strengthen the biotechnology eco-system.

1.2 **Method Used to Develop the Program**

Development of Medical Biotechnology as a research and teaching discipline at York University has been a steady focus over the years. A Biotechnology Bachelor of Science has been in existence for many years at York University.

During 2015, a working group consisting of faculty members from the departments of Biology and Chemistry met to explore the possible organization and curriculum for a master's program in biotechnology. After discussions and informal polling with members of the Faculty of Science, a steering committee composed of members from various departments of the Faculty of Science reported on planning for the development of a biotechnology program. The positive response from the steering committee has resulted in a Task Force being established by the Dean of Science to develop this program.

To develop this Master's in Biotechnology Management, the Task Force obtained input from faculty deans, faculty members from the Faculty of Science, faculty members from the Faculty of Liberal Arts and Professional Studies, staff from the School of Continuing Studies, prospective students via a detailed focus group and a survey, interviews with past alumni working in the Biotechnology field, and industry leaders. Further, feedback from the Education Technology, Services, and Research (EAB), an independent advisory board company who specializes in the higher education industry, has helped shape the development of this program.

1.3 **Faculty in which the Program is Housed**

The program will be housed in the Faculty of Science and offered at the Markham Campus, York University.

2. General Objectives of the Program

2.1 **Brief Overview**

The program requires students to complete 30-credits and two (2) paid internships. Full-time studies will take 5 semesters over 20 months. At this point, a part-time option is not being offered, due the nature of the scheduling of sequential coursework, the desire to retain students in cohorts for the capstone course experience and the two consecutive paid internships. As the program grows and the possibility of offering courses more than once a year becomes more likely, the program committee plans to re-visit the option of part-time studies as part of program reflection efforts.

The program is structured to develop knowledge and skills in biotechnology and management during the first two semesters, and then extend their knowledge and understanding through two

paid internships and an experiential capstone experience in their final three semesters. The course load in semesters 3-5 are kept to a minimum so that students can focus on their paid internships and build interactions with industry and potential employers.

Overall, the main objectives of the Master's in Biotechnology Management are to provide students with insight into the latest biotechnology theories, discoveries, and laboratory techniques, while also developing managerial competencies and a practical foundation in the biotechnology industry. As a result, the program is designed to enhance their competitiveness for employment, in a variety of biotechnology related industries, whether in private, public, or non-profit organizations.

The program is designed to appeal to students who hold a Bachelor of Science degree in Biology, Biological Sciences, Biotechnology, Life Science, or related discipline, and have little/no work experience in Biotechnology.

2.2 **Alignment with University and Faculty Missions**

This program will support the University's goals as outlined in the 2020-2025 UAP as follows:

21st Century Learning: The program's design aims to increase the University's profile as a provider of innovative academic programs and strengthen York University's comprehensiveness and cross-disciplinary offerings. Currently, there are no Canadian universities offering a dual program where students can earn a professional master's degree in Biotechnology and a graduate diploma in management with a focus on career readiness. The Master's in Biotechnology Management is designed to provide professional preparation for our graduates to fill current labor needs in the biotechnology sector and strengthen the Canadian economy, which have been heavily leaned on during the COVID-19 pandemic (Canada's Biotechnology Industry, Driving Economic Growth, 2021 [i]; Growing the Bioeconomy, 2021[2]).

Knowledge for the Future: The program aims to establish York as an innovation hub in Biotechnology. Faculty for this program will focus on knowledge mobilization and advancement of exploration, innovation, and growing the bioeconomy in the ever growing $19 billion Biotechnology Canadian market of healthcare. Moreover, key components of the program are the two paid internships with industry, which will provide the student with the opportunity to be immersed in the Biotechnology industry and integrated management capacity.

From Access to Success: Paid internships will be coordinated with the centralized Markham Campus experiential education resources and will focus their efforts to achieve positive change for our students by providing timely and reliable paid internship offerings and assist with their career advising.

Advancing Global Engagement: The program will be housed in the Faculty of Science in the Markham Campus. The Markham Campus will be offering students innovative, relevant job-ready academic programing, and the Master's in Biotechnology Management will do just this. Additionally, we plan to have a robust recruitment of international students from a multitude of countries and continue to be long-term partners in learning.

Working in Partnership: This program is built around developing interdisciplinary partnerships in the Markham region and serving the needs of a growing region, one of York University's top priorities, by including two work paid internships with local industry. Over the course of two paid internships, students will work with organizations to help them review, analyze, solve, and implement biotechnology problems through their two paid internships.

Living Well Together: In searches for teaching staff for the Master's in Biotechnology Management, we will also pay close attention to mentorship, effective teaching, and curricula skills of hires to ensure the faculty complement has the depth and breadth necessary to deliver a program embracing a culture of service excellence.

University Goals

York University's Strategic Mandate Agreement (2020-2025) identifies Science as a specific target area of strength and growth. Additionally, York University's Strategic Mandate Agreement articulates a continued focus on providing unique interdisciplinary programs that respond to the needs of the global knowledge economy. This program will contribute to York University's growth at the graduate level. Biotechnology is truly interdisciplinary in nature with the intersection of biology, chemistry, physiology, genetics, therapeutic strategies, and the scientific method, and aims to fill employment gaps in the biotechnology industry responding to the COVID-19 crisis. This program is the sole program in Canada offering a rich learning experience with: (1) training in practical biotechnology theories, skills, and practices, (2) a graduate diploma in management, (3) two paid internships, and (4) an interdisciplinary capstone experience of biotechnology and management. As such, it is expected to drive demand and interest for the program.

Faculty Goals

York University's Faculty of Science Strategic Plan (2021-2025) calls for the Faculty of Science to offer distinctive and appealing programs to reflect the aspirations of students. This new program exhibits all these calls to action. The program has been specifically built around providing a unique educational offering in Biotechnology and addressing the increasing number of employment opportunities in biotechnology careers in a $19 billion industry currently employing 13 000 people directly and 30 000 people indirectly (BioTalent Canada, 2018), and under a lot of pressure due to the COVID-19 pandemic. At the same time, the Faculty of Science Strategic Plan calls for increased focus on enhanced opportunities for research and experiential learning for students. The Master's in Biotechnology Management program includes two work internships in biotechnology, and the opportunity to participate in an interdisciplinary capstone experience.

3. Need and Demand

3.1 Similar Programs Offered Elsewhere

Our Master's in Biotechnology Management would be the only one offered in Canada. There are at least eight graduate programs in biotechnology related fields across Canada. Of these programs, five (5) are offered in Ontario and three (3) outside of Ontario as shown in **Appendix A**.

Only the University of Toronto Mississauga (UTM) and Northeastern University-Toronto offer a master's level program in biotechnology in the GTA. The program at UTM is focused on both health and agriculture biotechnology, while our program would be explicitly focused on combining biotechnology and management. The program at Northeastern University-Toronto offers a solely online course-based master's in biotechnology without providing an internship/co-op/placement option. Additionally, the York program will be offered as a hybrid-learning program, emphasizing program flexibility. This includes face to face courses in addition to online learning, allowing for student flexibility and community connections. This distinguishes our program from the UTM and Northeastern programs. Furthermore, in the GTA, Ryerson, Ontario Tech, University of Toronto-St. George, University of Toronto-Scarborough, and York University do not currently offer a master's in biotechnology or related fields.

Outside of the GTA, biotechnology is a growing program of study, with McGill University, McMaster University, University of Calgary, University of Guelph, University of Lethbridge, and University of Windsor all offering masters level program in biotechnology related fields. Each of the programs differ significantly from the York program. For example, University of Guelph offers a 12-month Master's in Biotechnology with a focus on commercializing biotechnology innovations, while McGill University offers a 24-month Master's in Applied Science in Biotechnology with 15 courses and an in-house internship. On the other hand, University of Windsor offers a solely course-based program. No other program includes a strong focus on biotechnology, a graduate diploma management and two paid internships with external partners in a 20-month time. As such, this program has a stronger focus on interdisciplinary industry skill development, compared to the other programs across Canada.

The programs in Biotechnology offered at various institutions vary in scope and focus. For example: three out of eight programs (3 out 8) are focused on commercialization of biomedical science, while another two of eight (2 out 8) programs are focused on agricultural biotechnology, while another three of the eight (3 out 8) programs are focused on general biotechnology. This program is focused on general biotechnology, coupled with a strong foundation in management. Moreover, our program will emphasize its data analysis and statistical course work, as the only other program offering coursework in biotechnology related data analysis is the University of Guelph.

Additionally, the types of experiences offered to students in the biotechnology related programs vary from program to program. We have identified six (6) programs that offer work-placement/internships in biotechnology related fields, however, only two (2) of the programs offer internships with an external partner placed by the University, and one (1) program offers an in-housework-internships. Furthermore, we identified two (2) programs that are solely course-based and do not offer an internship. Of these programs, this program would be a distinctive offering as there are no programs which have a specific focus in Biotechnology and Management while offering two paid internships with external partners.

3.2 **Need and Demand**

The Master's in Biotechnology Management is designed to address an unfilled need in the Canadian Biotechnology Industry. Throughout the COVID-19 pandemic the biotechnology

industry has been leaned on heavily to bring forward high value strategies and pharmaceutical options with many job openings remaining unfilled (BioTalent Canada, 2020). The demand for health-care related biotechnology expertise has been growing in Canada. The Canadian biotechnology sector employs approximately 13 000 Canadians directly and is growing. This Master's in Biotechnology Management is designed to increase the available pool of trained talent for the biotechnology industry and strengthen the biotechnology eco-system.

Employers in industry are looking to fill many different types of jobs in health-care related biotechnology. The program emphases on the mid-level positions focusing on health-care related biotechnology. **Appendix B** contains 28 job descriptions at the mid-level from BioTalent Canada in Biotechnology. More specifically, BioTalent Canada reports that positions in manufacturing, quality control/assurance, distributions and research and development remain unfilled due a lack of trained employees. Additionally, BioTalent Canada reports that skills shortages remain a large issue in the biotechnology sector with 33.2% of companies reporting skills shortages among employees. More specifically, significant numbers of biotechnology companies are based in Ontario, with 22.4% of newly formed biotechnology companies originating from Ontario. The program in Biotechnology Management is planned to be offered at the new Markham campus, and as such training individuals living in Ontario who would be in geographic proximity to many biotechnology companies looking to hire.

Beyond the above data, the Task Force carefully examined demand for a Master's in Biotechnology Management. Specifically, we examined demand in five ways:

1. Commissioned a Program Feasibility study
2. Survey of future students
3. Focus group with potential students
4. Interview with biotechnology executive
5. Consultations with Industry Leaders

Findings from these five endeavors indicated that there is significant interest and enthusiasm for the program.

The Task Force commissioned a program feasibility study from EAB: Education Technology, Services, and Research, an independent higher education consultation firm. EAB's consultation revealed increasing employer demand alongside increasing employment opportunities, suggesting a growing market and a strong need for our program. Furthermore, other profiled academic institutions offer a curriculum in general biotechnology skills, while our program will emphasize data analytics differentiating ourselves from our competitors. Based on EAB's analysis, our Master's in Biotechnology Management would provide students with theoretical and practical training in Biotechnology and a graduate diploma in management to enhance their competitiveness and employability in Biotechnology related employment opportunities.

A survey of first-year science students was conducted regarding the Markham based Master's in Biotechnology program. Overall, there was strong interest in our program. One hundred and twenty-four science undergraduate students from the Faculty of Science responded to a survey about their intentions regarding continuing their education at the master's level in Biotechnology. The majority were interested. In fact, 67% of students stated they are very interested or somewhat interested in a professional graduate program in Biotechnology.

In addition to the survey, the task force conducted a focus group with undergraduate students at York University on April 7, 2019. Respondents showed strong interest in the program. Students were especially pleased that our program would have a management component. Furthermore, these individuals thought our program would give "students more options for what to do with their degree." Additionally, students explained "a lot of science students do not consider taking business courses as electives, a business course would be a great opportunity."

Furthermore, we interviewed a biotechnology executive to provide feedback on the program. The executive had great enthusiasm for the program and explained a balance of biotechnology and industry skills were a must. Their recommendation was to ensure that our program provided training on moving from academia to industry by including coursework on Phase 1-4 clinical trials, general terms/principles of regulations (FDA, Health Canada) phases from R&D to manufacturing and sales terms. We have incorporated this feedback into the curricula of the program.

Finally, consultations were conducted with industry leaders. Industry leaders including Sanofi, DNALabs Canada Inc., Gilead Science Inc., and BIOTECH Canada.

Overall, the Master's in Biotechnology Management is a much-needed program to position York University as a provider of innovative biotechnological programming to train the next generation of leaders.

*Statistics from: Bio HR Facts-https://www.biotalent.ca/en/bio-economy-facts

4. **Program Content and Curriculum**

4.1 **Program Requirements**

The program focuses on developing theoretical and practical training in biotechnology, laboratory techniques, managerial competencies, and practical industry skills in biotechnology through two paid internships.

The program consists of 14 required courses: 6, 3 credit courses, and 8, 1.5 credit courses, for a total of 30 credits. Students are also required to complete two paid internships in the program.

Figure 1 presents an overview of the program structure.

Figure 1: **Master's in Biotechnology Management Program Overview**

Fall Term 1

Weeks 1-6			**Week 7-12**	
Organizational Theory and Strategic Management (1.5 cr)	Manufacturing and Service Operations Management (1.5 cr)	Organizational Behavior (1.5 cr)	Management Information Systems (1.5 cr)	Financial and Management Accounting (1.5 cr)
Introduction to Biotechnology Practice (3cr)				
Science Communication and Writing (3 cr)				

Term Credit total: 13.5 credits

Winter Term 1

Weeks 1-6			**Week 7-12**
Law and Corporate Governance (1.5 cr)	Introduction to Financial Management (1.5 cr)	Principles of Marketing Management (1.5 cr)	
Research and Development in Biotechnology (3cr)			
Laboratory Skills in Biotechnology (3cr)			
Data Analysis, Product Development and Commercialization in Biotechnology (3cr)			

Term Credit total: 13.5 credits

Summer Term 1

Week 1-12
Paid Internship A

Term Credit total: 0 credits

Fall Term 2

Week 1-12
Paid Internship B
Capstone Experience (3 credits)

Term Credit total: 3 credits

Winter Term 2

Week 1-12
Paid Internship B

Term Credit total: 0 credits

Program Total: 30 credits

The program is structured to develop knowledge and skills in biotechnology and management during the first two semesters, and then extend the students' knowledge and understanding through two paid internships, and a capstone experience in their final semesters.

The two paid internships are developmental in nature. Paid Internship A is designed for students to gain relevant work experience in the biotechnology sector, while Paid Internship B is designed for students to solidify their skills and commitment to the biotechnology sector. In most cases, students will continue with the same employer from Paid Internship A to Paid Internship B to allow for a deeper dive into the work, and further develop industry relations. Together Paid Internships A & B are scheduled to be 12 months long. However, the length of the paid internship may vary depending on employer terms but shall not be less than 8 months. If a paid internship is to be less than 12 months, this will be reviewed on a case-by-case basis.

If a situation arises, where the employer or student wishes to change the placement for Paid Internship B, efforts will be made to make alternative paid internships.

Opportunities for paid internships may be with external stakeholders such as industry, non-profits, government agencies, or on-campus opportunities with internal stakeholders. We will strongly recommend our students to complete their paid internships with industry partners.

The paid internship is designed to enable students to extend their work experience in the biotechnology sector. It aims to help students expand their knowledge, analytical and professional capacity skills, as well as build industry connections for future employment in the biotechnology industry.

Exact job titles, duties and hours of work may vary. During the paid internship, students are encouraged to solidify their knowledge of the main concepts and methods in Biotechnology, integrate management competencies, communicate their work, work effectively in an industry setting and demonstrate ethical behavior, social responsibility, and professional capacity.

Topics may vary from paid internship to paid internship.

By the end of the paid internships' students are expected to:

- Integrate and apply theoretical/academic knowledge in the workplace setting.
- Integrate management competencies within the biotechnology industry
- Propose solutions and implementation plans during industry paid internships
- Develop career goals.
- Develop a professional network with employers and peer employees.
- Communicate strategically in professional contexts using a range of modes, genres, and media
- Determine strengths and weaknesses in communication and enhance interpersonal skills.

Students will be assigned a Faculty Liaison as an external supervisor, as well as an industry setting advisor (Industry Supervisor) at the place of employment. The roles of the Faculty Liaison are to coordinate the internships for the program; to assist in the matching of student candidates to their

paid internship partners; to meet with the student and the industry supervisors to ensure progress is on track; to liaise with the industry supervisors regarding their expectations, the expectations of the program and the correct submission of the Paid Internship Reports; and to compile the grades (pass/fail) for the students in the paid internships.

The role of the Industry Supervisor is supervise the paid interns they are hosting for the internships; to meet with the Faculty Liaison and the intern to ensure the nature of the internships are appropriate for the program and that they are progressing in a satisfactory manner; to assess the student's proficiency in the form of an Industry Supervisor's report and (with input from the Faculty Liaison) the intern's Paid Internship Report; and to (with input from the Faculty Liaison) grade the internships (pass/fail). The grade and the experience are acknowledged on the transcript.

The Faculty Liaison position can be filled by any faculty member who is currently associated with the Master's in Biotechnology Management York University at Markham Campus, or if appropriate, faculty members with expertise in the relevant field from the Keele Campus. At the end of the academic term, the student will submit a Paid Internship Report. This experience is understood to be an out of classroom industrial experience. As such, the course has minimal faculty oversight except for the Faculty Liaison.

4.2 **Courses**

Appendix C contains course descriptions, all of which are at the graduate level. Of the 14 required courses, 8 courses are management courses being offered as part of the Graduate Diploma in Management in conjunction with the Faculty of Liberal Arts and Professional Studies, and 6 are unique to the program in Biotechnology, which include a curated capstone Biotechnology Management course that integrates the management and biotechnology learning outcomes.

No electives are available as the program is very targeted and comprehensive and will serve the students well.

The program has adopted an interdisciplinary course structure. Starting in Term 1 (Fall 1) students will be provided with coursework on the fundamental theories of biotechnology science, latest biotechnology practices, science communication, and managerial concepts. Term 2 (Winter 1) is a deep dive into further biotechnology and management coursework. Term 2 provides training in research and development practices in the Canadian biotechnology industry, a comprehensive introduction to data analysis, product development and commercialization in biotechnology, practical laboratory skills in biotechnology, and further management training. Students will then extend their knowledge and skills through two work paid internships. This will create conditions for the students to participate in and reflect upon a paid internship that contributes to a capstone project in their final semester.

Course scheduling was carefully considered in designing this program. Courses that teach fundamentals in biotechnology, management and statistics are scheduled for the first two terms of the program. In the subsequent terms students will further develop these skills in addition to practicing these skills in industry through two work paid internships, and a capstone experience.

4.3 **Course Level**

All courses are at the graduate level.

4.4 **Calendar Copy**

Calendar copy is provided in **Appendix D.**

5. **Program Learning Outcomes and Assessment**

5.1 **Learning Outcomes**

The Master's in Biotechnology Management program learning outcomes were developed through extensive discussions with Faculty of Science faculty, staff, industry experts, an independent higher educational consultation firm, prospective students, and curriculum specialists. The Task Force used the results of this data-gathering to help us develop the learning outcomes for this degree.

The specific learning outcomes for the Master's in Biotechnology Management are shown below. **Table 4** provides a detailed map showing how program learning outcomes map to the Ontario University Graduate Degree Level Expectations (UGDLEs). **Appendix E** provides a detailed map showing how individual courses support the learning outcomes. **Appendix F** provides a detailed map showing how individual courses support program learning outcomes and Ontario University Graduate Degree Level Expectations (UGDLEs).

Detailed Program Learning Outcomes:

Graduates of the Master's in Biotechnology Management program will be able to:

1. Describe the fundamental role of biotechnology in science within a management context
2. Analyze the potential limitations, and/or ethical, political, or social implications of relevant biotechnology practices, their alternatives, as well as industry developments and trends.
3. Recognize major fields of management and key theories informing management decisions and apply them to advance organizational goals.
4. Analyze the Canadian biotechnology drug and development process, standard operating procedures, regulations, clinical trials, packaging and labeling, regulatory compliance, good manufacturing practice and clinical research.
5. Integrate management competencies within the biotechnology industry setting
6. Implement the latest laboratory techniques in biotechnology including practical laboratory skills, experimental procedures, and analysis.
7. Apply practical statistics and data analysis to biotechnology data sets.
8. Propose solutions and implementations plans for biotechnology case studies.
9. Communicate clearly and effectively through written articles, reports, oral presentations, business documents, online platforms, and interviews with varied audiences.
10. Employ appropriate strategies to work independently and in diverse teams.

11. Demonstrate initiative in new working environments relevant to Biotechnology management.
12. Demonstrate academic integrity, ethical practice, personal responsibility, limitations of one's knowledge, and accountability in biotechnology management.

Table 4: Ontario Graduate Degree Level Expectations (UGDLEs) Mapped to Master's in Biotechnology Management Program Learning Outcomes

	Master's in Biotechnology Management
PROGRAM GOAL:	Upon completion of this program, students should be ready to take on positions in biotechnology management.
EXPECTATIONS:	Graduates of the Master's in Biotechnology Management program will:
1. Depth and breadth of knowledge	• PLO1.Describe the fundamental role of biotechnology in science within a management context • PLO2. Analyze the potential limitations, and/or ethical, political, or social implications of relevant biotechnology practices, their alternatives, as well as industry developments and trends. • PLO3.Recognize major fields of management and key theories informing management decisions and apply them to advance organizational goals.
2. Research and Scholarship	• PLO3.Recognize major fields of management and key theories informing management decisions and apply them to advance organizational goals. • PLO6. Implement the latest laboratory techniques in biotechnology including practical laboratory skills, experimental procedures, and analysis. • PLO7. Apply practical statistics and data analysis to biotechnology data sets.
3. Level of application of knowledge	• PLO4.Analyze the Canadian biotechnology drug and development process, standard operating procedures, regulations, clinical trials, packaging and labeling, regulatory compliance, good manufacturing practice and clinical research. • PLO5.Integrate management competencies within the biotechnology industry setting • PLO6. Implement the latest laboratory techniques in biotechnology including practical laboratory skills, experimental procedures, and analysis.

	• PLO7. Apply practical statistics and data analysis to biotechnology data sets. • PLO 8. Propose solutions and implementations plans.
4. Professional capacity/autonomy	• PLO8. Propose solutions and implementations plans. • PLO11. Demonstrate initiative in new working environments in biotechnology management. • PLO10. Employ appropriate strategies to work independently and in diverse teams. • PLO12. Demonstrate academic integrity, ethical practice, personal responsibility, limitations of one's knowledge, and accountability in biotechnology management.
5. Level of communications skills	• PLO9. Communicate clearly and effectively through written articles, reports, oral presentations, business documents, online platforms, and interviews with varied audiences.
6. Awareness of limits of knowledge	• PLO 2. Analyze the potential limitations, and/or ethical, political, or social implications of relevant biotechnology practices, their alternatives, as well as industry developments and trends. • PLO 12. Demonstrate academic integrity, ethical practice, personal responsibility, limitations of one's knowledge, and accountability in biotechnology management.

5.2 **Achieving the Program Learning Outcomes**

The expected learning outcomes are supported via a program structure that develops students' skills and knowledge in a scaffolded manner. **Appendix E** demonstrates the learning progression by mapping how program learning outcomes are introduced, developed, achieved, and individually assessed throughout the master's degree. **Table 5** summarizes the relationship between graduate degree learning expectations, program learning outcomes and program courses. In brief, students will develop comprehensive knowledge of the Canadian biotechnology industry, emerging industry developments, roles of alternative practices in biotechnology, latest laboratory techniques in biotechnology, key theories informing management, practical statistical and data analysis skills, and professional capacity starting in the first semester of the program. Emphasis will be placed on deep learning, higher order skills such as critical thinking, and the evaluation of techniques and advances in the field. These learning outcomes will be applied, further consolidated, and extended through robust experiential learning components consisting of two internships, a practical laboratory course, and an interdisciplinary capstone experience in Biotechnology and business management.

The two paid work internships and the capstone experience provide foundational training grounded in real-world biotechnology needs. Paid Internship A is a four-month placement designed to enable students to gain relevant work experience in the biotechnology management sector, in a corporate, industrial, or academic setting. Students are encouraged to develop knowledge of the main concepts and methods in Biotechnology, integrate management competencies within the biotechnology industry, communicate their work, work effectively in an industry setting and demonstrate ethical behavior, social responsibility, and professional capacity. Paid Internship B is the concluding eight-month paid internship course in the program. It is designed to enable students to extend their experience in the biotechnology management sector and consolidate their knowledge, analytical and professional capacity skills. As such, this collaborative approach to employer and partner engagement will not only enhance the graduates' competitiveness for future employment, but also strengthen York's relationships within the community and encourage the type of innovative, interdisciplinary connections required to solve todays and tomorrow's most complex challenges.

The capstone experience encourages students to re-visit and draw upon program content as they solve complex management problems in biotechnology. A highlight of the capstone experience is that students will collaboratively identify, design, and lead their own management consulting project in biotechnology, based on the real-time needs of the organizations who visit the program or their paid internships.

Throughout both paid internships and capstone project, students will be supervised and assessed according to leading practices in work-integrated learning and experiential education. These practices will be heavily informed by a dedicated team of Work Integrated Learning and Experiential Education leadership at the Markham and Keele Campus. The programming and delivery of the M. Biotech Management degree will also be informed and revised through consultation of a M. Biotech Management Advisory Board, which will be made up of the full-time faculty delivering the courses, a group of York research-stream faculty with expertise in biotechnology, as well as leading biotechnology industry experts. Members of the board will also

assist in the admissions process. Consultations of willing members to serve on the board have been initiated.

Further integrated into the structure of each of the biotechnology courses are experiential learning opportunities such as cases studies, analyzing scientific literature, writing exercises, and problem-solving. For all the new biotechnology courses being proposed, please see the course design section in the new course proposals for detailed information on experiential learning in each course.

Table 5: Summary of Achieving the Program Learning Outcomes: Ontario Graduate Degree Level Expectations (UGDLEs) Mapped to Master's in Biotechnology Management Program Learning Outcomes and Program Courses.

UGDLEs	**Master's in Biotechnology Management**	
PROGRAM GOAL:	Upon completion of this program, students should be ready to take on positions in biotechnology management.	**Program Courses**
Depth and breadth of knowledge	• PLO1.Describe the fundamental role of biotechnology in science within a management context • PLO2. Analyze the potential limitations, and/or ethical, political, or social implications of relevant biotechnology practices, their alternatives, as well as industry developments and trends. • PLO3.Recognize major fields of management and key theories informing management decisions and apply them to advance organizational goals.	• Introduction to Biotechnology Practices • Laboratory Skills in Biotechnology • Managerial Concepts and Organization • Organizational Theory • Manufacturing and Service Operations • Organizational Behavior • Financial and Management Accounting • Law and Corporate Governance • Introduction to Financial Management • Management • Principles of Marketing • Research and Development in Biotechnology • Data Analysis, Product Development and Commercialization in Biotechnology • Strategic Planning • Paid Internship A • Paid Internship B

		• Capstone Experience
Research and Scholarship	• PLO3.Recognize major fields of management and key theories informing management decisions and apply them to advance organizational goals. • PLO6. Implement the latest laboratory techniques in biotechnology including practical laboratory skills, experimental procedures, and analysis. • PLO7. Apply practical statistics and data analysis to biotechnology data sets.	• Laboratory Skills in Biotechnology • Organizational Theory • Manufacturing and Service Operations • Organizational Behavior • Management Information Systems • Financial and Management Accounting • Law and Corporate Governance • Introduction to Financial Management • Principles of Marketing • Introduction to Biotechnology Practices • Laboratory Skills in Biotechnology • Research and Development in Biotechnology • Data Analysis, Product Development and Commercialization in Biotechnology • Science Communication and Writing • Paid Internship A • Paid Internship B • Capstone Experience
Level of application of knowledge	• PLO4.Analyze the Canadian biotechnology drug and development process, standard operating procedures, regulations, clinical trials, packaging and labeling, regulatory compliance, good manufacturing practice and clinical research. • PLO5.Integrate management competencies within the biotechnology industry setting	• Introduction to Biotechnology Practices • Laboratory Skills in Biotechnology • Research and Development in Biotechnology • Data Analysis, Product Development and Commercialization in Biotechnology • Science Communication and Writing • Paid Internship A • Paid Internship B

	• PLO6. Implement the latest laboratory techniques in biotechnology including practical laboratory skills, experimental procedures, and analysis. • PLO7. Apply practical statistics and data analysis • to biotechnology data sets. • PLO 8. Propose solutions and implementations plans.	• Capstone Experience
Professional capacity/autonomy	• PLO8. Propose solutions and implementations plans. • PLO11. Demonstrate initiative in new working environments in biotechnology management. • PLO10. Employ appropriate strategies to work independently and in diverse teams. • PLO12. Demonstrate academic integrity, ethical practice, personal responsibility, limitations of one's knowledge, and accountability in biotechnology management.	• Organizational Theory • Manufacturing and Service Operations • Organizational Behavior • Management Information Systems • Financial and Management Accounting • Introduction to Biotechnology Practices • Laboratory Skills in Biotechnology • Introduction to Financial Management • Research and Development in Biotechnology • Data Analysis, Product Development and Commercialization in Biotechnology • Science Communication and Writing • Paid Internship A • Paid Internship B • Capstone
Level of communications skills	• PLO9. Communicate clearly and effectively through written articles, reports, oral presentations, business documents, online platforms, and interviews with varied audiences.	• Organizational Theory • Manufacturing and Service Operations • Organizational Behavior • Management Information Systems

		• Financial and Management Accounting • Introduction to Biotechnology Practices • Laboratory Skills in Biotechnology • Research and Development in Biotechnology • Data Analysis, Product Development and Commercialization in Biotechnology • Science Communication and Writing • Paid Internship A • Paid Internship B • Capstone Experience
Awareness of limits of knowledge	• PLO 2. Analyze the potential limitations, and/or ethical, political, or social implications of relevant biotechnology practices, their alternatives, as well as industry developments and trends. • PLO 12. Demonstrate academic integrity, ethical practice, personal responsibility, limitations of one's knowledge, and accountability in biotechnology management.	• Organizational Theory • Manufacturing and Service Operations • Organizational Behavior • Management Information Systems • Financial and Management Accounting • Introduction to Biotechnology Practices • Laboratory Skills in Biotechnology • Law and Corporate Governance • Research and Development in Biotechnology • Data Analysis, Product Development and Commercialization in Biotechnology • Science Communication and Writing • Strategic Planning • Paid Internship A • Paid Internship B • Capstone Experience

5.3 **Assessment of Learning Outcomes**

The program has established a detailed assurance of learning (AoL) plan for the purposes of demonstrating and documenting students' achievement of the program's expected learning outcomes DLEs. Each program-level learning outcomes will be measured through constructively aligned course assessments (see **Appendix E**).

Overall, assessment in a course will be based on students' performance on various elements of the course including laboratory and simulation reports, examinations, written assignments, literature reading presentations, project presentations, group-work, and in-class participation. Student performance on these assessments will be evaluated against pre-established performance benchmarks, success criteria and rubrics. These assessment methods will be heavily informed by a dedicated team of Work Integrated Learning and Experiential Education leadership at the Markham and Keele Campus. **Table 6** maps the program learning outcomes to courses where students are individually assessed.

Documentation of students' achievement of learning outcomes will be performed through York University's learning management site, e-class. This system allows our program to grade students' work while automatically collecting data on student progress, tracking at-risk students, flagging courses where student performance is an issue, and tracking students' success (pass/fail) in their paid internships. Student progress during paid internships will also be monitored through communication with the relevant industry partners. Collectively, this performance data will guide subsequent timely educational interventions and will hence serve as our assurance of learning plan. Furthermore, we aim to engage registered students in a yearly survey on their learning to improve the designed learning experiences. The same will apply to relevant industry partners whose feedback on their experiences with our students will be key in informing the optimization of our program. To add to this, we plan to send out a yearly survey to our alumni investigating the type of work they are doing, how the program prepared them for their work, and what they recommend for the program to teach. With all these initiatives, we hope to identify student performance and curricular gaps in relation to the expected learning outcomes in an evidence-based manner and "close the loop" on continuous curricular improvement initiatives.

Table 6: Program-level Learning Outcomes and Assessments

Program Learning Outcome	Course Assessed in Individually	Assessment (Individually Completed)
• PLO1.Describe the fundamental role of biotechnology in science within a management context	Introduction to Biotechnology Practices Research and Development in Biotechnology Data Analysis, Product Development and Commercialization in Biotechnology Capstone	Midterm Final Exam Midterm Final Exam Midterms Project on biotechnology project development Live Case Exercise
• PLO2. Analyze the potential limitations, and/or ethical, political, or social implications of relevant biotechnology practices, their alternatives, as well as industry developments and trends.	Introduction to Biotechnology Practices Research and Development in Biotechnology Capstone Experience	Report on development on new and emerging practices In-class case studies Project on selected topic in biotechnology research and development Live Case Exercise
• PLO3. Recognize major fields of management and key theories informing management decisions and apply them to advance organizational goals.	Organizational Theory Manufacturing and Service Operations Organizational Behavior Law and Corporate Governance Principles of Marketing Management Financial and Management Accounting	Midterm Class Participation Midterm Final Exam Midterm Class Participation Midterm Class Participation In-class tests Class Participation Midterm Cases and problems

	Introduction to Financial Management Capstone Experience	In-class tests Assignments Live Case Exercise
• PLO4. Analyze the Canadian biotechnology drug and development process, standard operating procedures, regulations, clinical trials, packaging and labeling, regulatory compliance, good manufacturing practice and clinical research.	Introduction to Biotechnology Practices Research and Development in Biotechnology Capstone Experience	Report on development on new and emerging practices In-class case studies Project on selected topic in biotechnology research and development Live Case Exercise
• PLO5. Integrate management competencies within the biotechnology industry setting	Paid Internship A Paid Internship B Capstone	Internship report Internship report Live Case Exercise Personal Reflection
• PLO6. Implement the latest laboratory techniques in biotechnology including practical laboratory skills, experimental procedures, and analysis.	Introduction to Biotechnology Practices Laboratory Skills in Biotechnology	Report on development on new and emerging practices In-class case studies Laboratory modules Final Exam
• PLO7. Apply practical statistics and data analysis to biotechnology data sets.	Introduction to Financial Management Data Analysis, Product Development and Commercialization in Biotechnology Capstone	In-class tests Assignments Problem-solving project Tutorial assignments Live Case Exercise
• PLO8. Propose solutions and implementations plans for biotechnology case studies.	Paid Internship A Paid Internship B Capstone	Internship report Internship report Live Case Exercise Personal Reflection

• PLO9. Communicate clearly and effectively through written articles, reports, oral presentations, business documents, online platforms, and interviews with varied audiences.	Management Information Systems Financial and Management Accounting Research and Development in Biotechnology Science Communication and Writing	Class Presentation Cases and problems prepared for the class and/or solved in class Project on selected topic in biotechnology research and development Responses to in-class case study/simulations Student created science-based newspaper story or press-release
• PLO10. Employ appropriate strategies to work independently and in diverse teams.	Laboratory Skills in Biotechnology Capstone Experience	Peer and self-evaluation of collaboration experience Self-reflection of collaboration experience
• PLO11. Demonstrate initiative in new working environments in biotechnology management.	Paid Internship A Paid Internship B Capstone Experience	Internship Report Internship Report Personal Reflection
• PLO12. Demonstrate academic integrity, ethical practice, personal responsibility, limitations of one's knowledge, and accountability in biotechnology management.	Laboratory Skills in Biotechnology Introduction to Biotechnology practices Research and Development in Biotechnology Science Communication and Writing Paid Internship A Paid Internship B Capstone Experience	Laboratory modules Report on development on new and emerging practices In-class case studies Responses to In-class case study/simulations Completion of cases-studies Internship Report Internship Report Personal Reflection

5.4 **Normal Program Length**

The normal program length is 20 months of full-time study.

5.5 **Delivery Modes**

This is a course-based, professional graduate program consisting of coursework and two paid internships. We plan to offer a hybrid-learning program, emphasizing program flexibility. Our program would offer face to face courses in addition to online learning, allowing for student flexibility and community connections. We plan on mounting Science Communication and Writing and Data Analysis, Product Development and Commercialization in Biotechnology as hybrid or online courses.

In general, the other courses will be face to face lectures and laboratories with a focus on scientific exploration, scientific literature, case studies, discussions, and teamwork. The two paid internships will occur in semesters 3-5 of the program. The paid internships are a total of 12 months in duration but can be as short as 8 months depending on employer terms. Paid internships could be in-person or remote, based on industry needs. Students will engage in various experiential learning throughout the program, particularly through the intensive laboratory course, paid internships and capstone experience. The paid internships aim to help students solidify and integrate their learning and expand their knowledge, analytical and professional capacity skills and build industry connections for future employment. Additionally, mentorship is a key attribute of the program with students receiving mentorship from lab demonstrators, course instructors, supervisors (university and industry) from the paid internships.

6. **Admission Requirements**

6.1 **Program Admission Requirements**

Program Entry:

The Master's in Biotechnology Management can be completed on a full-time basis. Entry is fall term.

Program Length:

The expected degree completion time for full-time master's students is 5 terms. Students must register and pay fees for a minimum of the equivalent of 5 terms of full-time study. All requirements for a master's degree must be fulfilled within 12 terms (4 years) of registration as a full-time student in accordance with Faculty of Graduate Studies' registration policies.

The minimum admission requirements are as follows:

- □ An undergraduate degree in any area of biology, biological science, biochemistry, chemistry, life sciences or related field from a recognized post-secondary institution with a B+ average in the last two years (or equivalent) of academic work. Undergraduate degrees must include at least one course in statistics at the second-year level or above, as

well as three courses in molecular biology, cell biology, biochemistry, genetics or equivalent at the second-year level or above.

- ☐ Work experience is not required, but internships or prior work experience is encouraged.
- ☐ Alternate admission requirement: Graduates with other Science degrees or 3-year degrees may be admitted as well with at least one year of post-graduation work experience in a sector relevant to the program.
- ☐ Proof of English language proficiency if prior studies were not completed in English: a minimum TOEFL score of 577 (paper-based), or 90-91 (internet-based); and a minimum IELTS score of 7 (Academic Module).
- ☐ Two letters of recommendation. Letters can be from previous professors, employers, or other persons with whom the applicant has had interactions and who can attest to their professional and/or academic qualifications. It is recommended that one of these letters should be from a professor if you graduated in the last 3 years.
- ☐ A supplementary application form with a statement of interest providing evidence of commitment to advanced work in the biotechnology sector. The statement should include a discussion of the applicant's background, interests, skills, and career goals.
- ☐ and an up-to-date résumé or CV

Students are expected to remain in good academic standing as per Faculty of Graduate Studies (FGS) guidelines to remain in the program. Students must also have passed courses that precede the internships with a minimum grade of C+ before becoming eligible for their paid internship. FGS guidelines on academic standing are available at: https://www.yorku.ca/gradstudies/students/current-students/regulations/graduate-courses-and-grading/.

Degree Requirements:

Candidates for the Master's in Biotechnology Management must successfully complete all coursework and internships in good standing in accordance with FGS minimum grade requirements.

6.2 **Alternative Requirements**

See above.

7. **Resources**

7.1 **Areas of Faculty Strength and Expertise**

The Master's degree in Biotechnology Management at Markham Campus is a new program at a new campus. In July, 2021 the Faculty of Science hired a full-time, teaching stream faculty member that is planned to administrate the program as well as teach the Laboratory Skills in Biotechnology course. A search for a second full-time teaching stream hire that will teach the Introduction to Biotechnology Practice, the Research and Development in Biotechnology, the Data Analysis, Product Development and Commercialization in Biotechnology and the Science Communication and Writing courses is slated for 2021/22. The capstone Biotechnology/Management course will be delivered by both full-time hires in consultation with

instructors from ADMS responsible for delivering the modules for the Graduate Diploma in Management.

The hiring of these faculty members will be designed to the match the needs of the Biotechnology program and meet the program offerings in Biotechnology. For example, we will pay special attention to prospective faculty members with a strong background in pharmaceutical related biotechnology methods with a focus on pharmaceutical, diagnostic, and therapeutic strategies. We will also pay close attention to mentorship, effective teaching, and curricula skills of hires to ensure the faculty complement has the depth and breadth necessary to deliver an innovative and effective program in Biotechnology. The design and mounting of these courses have been and will be done in consultation with existing full-time faculty on the Keele campus as well as in consultation with industry stakeholders. Faculty delivering the programming will have opportunities to keep up to date with the biotechnology field and for pedagogical development through a professional expense reimbursement fund, sabbatical leaves and industry-coupled training/development opportunities accessed through the M. Biotech Management advisory board and internship relationships.

The Graduate Diploma in Management (GDM) component of the degree is already being offered by ADMS and the relevant GDM modules will be offered from their relevant faculty members.

7.2 **Role of Retired and Contract Instructors**

The program in Biotechnology Management will be a new program and as such there will be no retirees. There are no currently anticipated roles for contract teaching instructors except for filling sabbatical leave teaching needs or possibly if the 2021/22 full-time hire is not ideally qualified to deliver all the courses planned for this role.

7.3 **Laboratory Facilities/Equipment**

At the new Markham campus, brand new purpose-built laboratory facilities and equipment will be ready for the opening of the Master's in Biotechnology Management program. All Specialized laboratory facilities for teaching and research have been planned including, both wet and dry laboratory spaces. This includes:

- 120 square meter (m^2) Biology instructional laboratory for teaching 24-student sections
- 120 m^2 Chemistry lab
- 120 m^2 dry Physics lab has been designed to accommodate 24 student sections

The plans also include a robust suite of preparation and support spaces for these instructional laboratories. A list of equipment for each laboratories/equipment has been submitted to the facilities manager of the Faculty of Science. The equipment list has been determined based on: (1) pedagogical needs, (2) program course offerings including specialized laboratory equipment, (3) research needs in biotechnology and (3) providing a rich student experience including experiential learning.

There is also an Experiential Education Hub on floor 3 intended to provide administrative space and support for upper year students to work on Capstone Projects and act as an intersection for work with Industry partners, students, and faculty.

7.4 **Space**

The new building at Markham campus housing the Biotechnology Management program will have all the required space for the planned curriculum. As described above, the 120 m^2 Biology lab space will be used to house the laboratory biotechnology course. Lecture halls are located on the 1st through 3rd floors of the tower. Faculty and administrative staff will be provided with a suite of offices with access to meeting rooms of various sizes, networking lounge space, kitchenettes and various filing and storage facilities. These will occupy the 7^{th} floor along with spaces dedicated to other Faculties. All student Service functions including Advising, Counseling, Alternate Exam facilities, Supplemental Instruction and Tutoring are located on floors 1 and 2.

Active learning environments and Teaching spaces common to all faculties:

YUMCC will feature multiple lecture and active learning spaces. For large lectures, there are two 135 seat (308 m^2) tiered lecture halls with 2 rows of seats per tier (the first row of seats on a tier can rotate for group work with 2nd row). These two halls are separated by a mobile partition to allow creation of a single 270 seat, 616 m^2 tiered lecture hall.

In addition, there is a 125 seat tiered lecture hall, several 50 seat tiered lecture halls, several 50 person-occupancy flat-floored classrooms with movable tables and chairs, and several 35 person-occupancy flat-floored classrooms with movable tables and chairs. All classrooms and lecture halls have complete audio/video service, internet and whiteboards for instruction.

The YUMCC will also have numerous common areas for informal student gatherings and independent study. There are several large study areas in the Library to support varying degrees of activity and noise tolerance. Rooms are furnished and designed to permit collaborative work, quiet study and mixed-use, including study and socializing. Every floor in the building except floors 7 and 8 has informal student lounge and study space off the main corridors. On the classroom floors 4 and 5, there is also significant bench seating installed in corridors, equipped with power to allow students to connect their devices while waiting between their classes.

7.5 **Support Services**

The support services can be broken down into three categories: (1) Laboratory support, (2) IT support, and (3) general student support. See **Appendix H** for summary details.

Laboratory Support
The duties of the laboratory support will be responsible for maintaining and ensuring quality laboratory experiences for students. The laboratory support includes laboratory technicians for the "Laboratory skills in Biotechnology" course. Starting in the opening year, one Laboratory Technician will be hired to support the first cohort of students. In subsequent years additional laboratory support will be hired as needed.

Administrative Support

The program will be supported by an Operations Manager hired into the Faculty of Science Markham administrative office. There will also be an Undergraduate Program Assistant and an Undergraduate Program Secretary that may be able to contribute to the management of the program. Furthermore, a full-time teaching stream Faculty hire will receive teaching release to help administrate the program. Logistics for the paid internships associated with the program will be coordinated with the experiential education support team specific to the Markham Campus, including student success advisors, career coaches, work-integrated learning administrators, employer engagement staff, and career development and education support.

IT Support
The IT support for the program will be managed centrally and will be in place prior to opening.

Student Support
The proposed program will be supported and supplemented by a suite of academic success supports and services that contribute to the quality of the program and the success of students. These will be provided by Markham and Keele staff, in-person and online, and include: academic advising, accessibility services, general learning skills (e.g. time management, critical thinking, reading and note-taking), discipline specific supports (e.g. writing and numeracy skills), and peer-based learning supports such as peer tutoring and Supplemental Instruction. Students' sense of belonging and community within their program is strengthened through a robust first year orientation and transition program, the active involvement of peer mentors, and a program specific student club/organization. Further student services include registration services, student finances and bursaries, health and wellness support and programs, and student activities and involvement programs.

7.6 **Anticipated Class Sizes & Supervisory Capacity**
Below is a summary of total enrolment based on the course:

Course	**Term**	**Total Enrollment**	**#Students in Program/ # outside of program**
Organizational Theory and Strategic Management	Fall Term 1	24	24
Manufacturing and Service Operations Management	Fall Term 1	24	24
Organizational Behaviour	Fall Term 1	24	24
Management Information Systems	Fall Term 1	24	24
Financial and Management Accounting	Fall Term 1	24	24
Introduction to Biotechnology Practice	Fall Term 1	24	24

Science Communication and Writing	Fall Term 1	24	24
Law and Corporate Governance	Winter Term 1	24	24
Introduction to Financial Management	Winter Term 1	24	24
Principles of Marketing Management	Winter Term 1	24	24
Research and Development in Biotechnology	Winter Term 1	24	24
Data Analysis, Product Development and Commercialization in Biotechnology	Winter Term 1	24	24
Laboratory Skills in Biotechnology	Winter Term 1	24	24
Paid Internship A	Summer Term	24	24
Paid Internship B	Fall Term 2	24	24
Capstone Experience	Fall Term 2	24	24

This section will focus on technical support and capacity for supervision.

Technical Support

Section 7.5 outlined laboratory technical support staff to be hired. The role of the laboratory support will be to: (1) setup, operational and maintenance of laboratories for program courses, (2) demonstrations of experiments in laboratory courses and (3) safety training for students in laboratories.

Supervisory Capacity

Paid Internships A& B will require faculty members to supervise and mentor students while in their paid internships. Given that we project to have approximately 20 students graduating each year, this would mean 2-3 faculty members in the department will supervise student projects.

7.7 **Financial Support**

We plan to liaise with local biotechnology industry to see if we can develop a limited number need-based scholarships to help make the program accessible for students facing financial constraints. Paid internships will also constitute a form of financial aid. Eligible students will also have access to financial aid through the Ontario Student Assistance Plan (OSAP). In addition to OSAP, students have access to additional financial supports which are described on this site: https://www.yorku.ca/gradstudies/students/current-students/awards-and-scholarships/

8. **Enrolment Projections**

The enrollment projections for the program in Master's in Biotechnology Management are based on the Science Adjusted Faculty Submissions. See **Table 6** for a summary overview.
The program will start in Fall 2023, and we expect that the first cohort in the program will attract 20 students, 15 domestic and 5 international students. By the third year of the program, we project to achieve a steady state of enrollment with 40 students in each year of the program.

Table 6- Projections of Student Enrolment in the Master's in Biotechnology Management for the first ten years of the program.

Year	**Year 1**		**Year 2**		**Total**
	Domestic Students	**International Students**	**Domestic Students**	**International Students**	
2023-24	16	4	0	0	20
2024-25	19	5	16	4	44
2025-26	19	5	19	5	48
2026-27	19	5	19	5	48
2027-28	19	5	19	5	48
2028-29	19	5	19	5	48
2029-30	19	5	19	5	48
2030-31	19	5	19	5	48
2031-32	19	5	19	5	48
2032-33	19	5	19	5	48

9. **Support Statements**

- Relevant Dean with respect to the adequacy of existing human (admin and faculty), physical and financial resources necessary to support the program, as well as the commitment to new resources to implement the program. Appendix K
- Vice-President Academic and Provost with respect to adequacy of existing human (admin and faculty), physical and financial resources necessary to support the program, as well as the commitment to new resources to implement the program
- Dean of Libraries confirming the adequacy of library holdings and support. Appendix K
- University Registrar confirming the implementation schedule and any administrative arrangements
- Relevant Faculties/units/programs confirming consultation on/support for the program
- Policy body statements for the need/demand of program (BioTalent Canada)
- Support statements from private companies in biotechnology. Appendix J

Program Governance

The program will be offered through the Faculty of Science and will eventually be housed by a new Department in F.Sc. but unique to the Markham campus, although this departmental governance structure is not expected to be in place when the campus opens in 2023. The program will be administered by a dedicated teaching stream faculty member, Dr. Jade Atallah, who has been currently hired into the Department of Biology but will form part of the new Department at Markham's complement once this is established. A second teaching stream faculty member will also be hired in July, 2022 that will assist in the teaching of the M. Biotech curriculum. Until the formation of the new department at Markham, these hires that administer the degree will report to their Departmental chair (Biology) as well as the F.Sc. Associate Dean Students and the Dean of Science.

CVs of faculty associated with the program directly or through the M. Biotech Management Advisory board can be provided upon request.

References

BioTalent Canada (2018). *Mapping Potential- Profiles of Canada's Biotech Frontiers*.

Appendix A | Master's Level Biotechnology Programs in Canada

University	Degree Granted	Duration	Credits	General Approach	Internship/ Co-op/Work Placement
1. McGill University	Master's in Applied Science in Biotechnology	16 months	45 credits	Focus on techniques in molecular biology and proteomics, with an introduction to business management.	Yes-in house at Institute of Parasitology (4-8 months)
2. McMaster University	Bachelor-Master Biomedical Discovery and Commercialization	1-year Masters; goes with 4-year BSc.	18 credits	Focus on developing skills in biomedical discovery and research starting in the third year of the BSc, continuing to the fourth year and a one-year Master's.	Yes- students are required to find them independently
3. Northeastern University-Toronto	Master's in Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices	15 months	54 credits	Focus on managing global processes for organization involved in developing and seeking marketing approval for regulated healthcare and food products. (Fully online program)	No
4. University of Calgary	Master's in Biomedical Technology	12 months	33 credits	Focus on biomedical science with training in business including scientific, market, patent, and financial analysis.	Yes-Practicum paid (3 months)
5. University of Guelph	Master's in Biotechnology	12 months with an option for 16 months	40 credits	Focus on molecular approaches to biotechnology, commercializing innovations in biotechnology and business skills.	No-unpaid industry project a possibility

6. University of Lethbridge	Master's in Science in Agricultural Biotechnology	24 months	90 credits	Focus on agricultural biotechnology,	Co-op option available
7. University of Toronto Mississauga	Master's in Biotechnology	24 months	90 credits	Focus on biotechnology in health and agriculture and laboratory skills in biotechnology as well as developing business skills. Students will have an 8-12 month paid internship.	Yes- paid
8. University of Windsor	Master's in Medical Biotechnology	16 months	40 credits	Focus on theoretical concepts in medical biotechnology and practical laboratory techniques used in medical biotechnology industries.	No

Appendix B | Sample of Biotechnology Positions with Master's in Biotechnology Management

Position	Level
Bioinformatician	Mid-Level
Business Development Representative	Mid-Level
Clinical Data Collector	Mid-Level
Clinical Research Associate	Mid-Level
Clinical Research Collector	Mid-Level
Clinical Research Data Coordinator	Mid-Level
Clinical Research Project Manager	Mid-Level
Grant Writer	Mid-Level
Laboratory Researcher	Mid-Level
Laboratory Technician	Mid-Level
Manufacturing Supervisor	Mid-Level
Marketing Researcher	Mid-Level
Materials Planner	Mid-Level
Process Development Technician	Mid-Level
Production Planner/Scheduler	Mid-Level
Project Coordinator in Manufacturing	Mid-Level
Project Manager	Mid-Level
Regulatory Affairs Coordinator	Mid-Level
Regulatory Affairs Specialist	Mid-Level
Research Analyst/Associate	Mid-Level
Research Manager	Mid-Level
Research Technician	Mid-Level
Quality Assurance Analyst	Mid-Level
Quality Control Analyst	Mid-Level
Quality Control Assurance	Mid-Level
Quality Control Inspector	Mid-Level
Science Writer	Mid-Level
Technical Writer	Mid-Level

*Medical Biotechnology positions are from BioTalent Canada, the HR partner of Canada's bioeconomy, and specifically derived from BioCareer Pathways, a project funded by the Government of Canada: www.biotalent.ca

Appendix G | Overview of Faculty of Complement Hiring Plan for Master's in Biotechnology Management

			Year 1- Opening	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
Title	**2021-2022**	**2022-2023**	**2023-2024**	**2024-2025**	**2025-2026**	**2026 - 2027**	**2027 - 2028**	**2028 - 2029**	**2029 - 2030**
Department Chair - Science (full prof)		✓	✓	✓	✓	✓	✓	✓	✓
Assistant Professor - Biology (Teaching Stream) & M. Biotech administrator	✓	✓	✓	✓	✓	✓	✓	✓	✓
Assistant Professor - (Teaching Stream) - Physics			✓	✓	✓	✓	✓	✓	✓
Assistant Professor - (Teaching Stream) - Math	✓	✓	✓	✓	✓	✓	✓	✓	✓
Assistant Professor - Chemistry			✓	✓	✓	✓	✓	✓	✓
Assistant Professor – M. Biotech		✓		✓	✓	✓	✓	✓	✓

Appendix H | Overview of Support Staff Hiring Plan

	Year 1 - Opening	Year 2	Year 3	Year 4	Year 5
Title	**2023-24**	**2024-25**	**2025-26**	**2026-27**	**2027-28**
Office Support					
Operations Manager	✓	✓	✓	✓	✓
Departmental Administrative Assistant	✓	✓	✓	✓	✓
Undergraduate Program Assistant	✓	✓	✓	✓	✓
Undergraduate Program Secretary	✓	✓	✓	✓	✓
Laboratory Support					
Laboratory Technician-Biology/Biotech #1	✓	✓	✓	✓	✓
Laboratory Technician-Biology #2		✓			
Sessional biochemistry lab technician			✓		
Laboratory Technician-Physics #1	✓	✓	✓	✓	✓
Laboratory Technician-Physics #2		✓	✓	✓	✓
Laboratory Technician-Chemistry #1	✓	✓	✓	✓	✓
Laboratory Technician-Chemistry #2		✓	✓	✓	✓

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To whom it may concern,

I am glad to share my supportive feedback regarding the development of the Professional Master's in Biotechnology Management at York University Markham Campus.

I am a Regional Director at 3W Healthcare. We are a company that mainly manufactures and distributes consumer medical devices and home healthcare equipment globally. My main role is overseeing procurement, regulatory affairs and distribution operations within Canada.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Our meeting allowed me to become familiar with the structure of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two disciplines, and a Biotechnology internship component. I have also had the opportunity to explore the courses within each of the biotechnology and management components of the degree.

I am in agreement with the interdisciplinary program structure that integrates biotechnology and management. Specifically, I value introducing prospective biotechnology students to principles of manufacturing and service operations management. This primes biotechnology trainees with a foundation of essentials in that domain without necessarily having to pursue an extensive post graduate program such as Lean Six Sigma. I also highly value exposing students to principles of marketing management, where employers such as ourselves can benefit from such skills down the road, especially pertaining to digital marketing.

I am also supportive of the Research and Development in Biotechnology course. Companies such as us are in need of improved skills supporting the formulation of SOPs and GMP drafts. The same applies to the Science Communication and Writing course, an area of struggle for many of our hires.

Overall, I believe that this interdisciplinary program will greatly improve the competence and employability of graduates. Furthermore, this is especially exciting for us as the launch of the program is aligned with our planned expansion of our manufacturing capabilities in the near future.

Please feel free to reach out to me if you have any questions or concerns in regards to this letter.

Thank you,

Waleed Mushfiq

BenchSci

September 28, 2021

Yuan (Alvin) Liu
Senior Business Analyst
BenchSci
59 Belvia Drive, Concord, ON L4K5J6
yalvinliu@gmail.com

To whom it may concern,

I hereby present my supportive feedback regarding the development of the Professional Master's in Biotechnology Management at York University Markham Campus.

I am a Senior Business Analyst at BenchSci in Toronto. We are a company that mainly provides a machine-learning based software solution to accelerate research and reduce wastage for top pharmaceutical companies in the world. My main role is to provide business analytics and advisory on performance and efficiency improvements for these pharmaceutical companies.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Our meeting allowed me to become familiar with the structure of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two disciplines, and a Biotechnology internship component.

I would like to express my agreement with the program structure. I believe that the interdisciplinary approach integrating biotechnology and management, and especially the finance/accounting/business aspects, will greatly benefit the competence and employability of the graduates. The same applies to project management fundamentals that would provide leverage for graduates landing manufacturing-related opportunities.

I have also had the opportunity to explore the courses within each of the biotechnology and management components of the degree. Specifically, I support the inclusion of Good Manufacturing Practices (GMP) regulations but also encourage the team to include fundamentals of Good Laboratory Practice (GLP) testing regulations. I also support the inclusion of Research and Development (R&D) principles and encourage the inclusion of quality-cost evaluation principles. I have also voiced my opinion in emphasizing essentials of manufacturing and scaling up processes.

Overall, I believe that Canadian Biotech companies can benefit from graduates of such a program, especially that it is being designed in consultation with the industry.

Thank you,

Alvin Liu

DNA Labs

DNA Labs™
GENETIC TESTING SOLUTIONS

Aaron Goldman, PhD
Chief Science Officer
DNA Labs Canada Inc.
aaron@dnalabs.ca
(416) 561-0288

To whom it may concern,

I present this letter in support of the development of the Professional Master's in Biotechnology Management at York University Markham Campus.

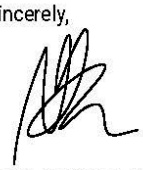
I am a co-founder and Chief Science Officer at DNA Labs Canada. We are a DNA testing company that provides state-of-the-art genetic testing services to clinicians and researchers across North America. My main role is to oversee all scientific functions of the company, including research, development, and commercialization of new genetic testing panels. In this capacity, we are always looking for high quality individuals to fill various research and development roles, and thus I am excited by the launch of this Master's in Biotechnology program.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Our meeting allowed me to become familiar with the structure of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two disciplines, and a Biotechnology internship component.

I would like to express my agreement with the program design. I believe that the interdisciplinary approach integrating biotechnology and management will greatly benefit the competence and employability of the graduates, given the evolving landscape of biotechnology in Canada. I have also had the opportunity to explore the courses within each of the biotechnology and management components of the degree. Specifically, I highly agree that a statistical/analytical component is a must and employers such as our group are in need of better trained individuals in this domain.

Overall, I believe that companies such as ours can benefit from graduates of such a program. In fact, we look forward to its launch as our growth plans align well with the timing and availability of prospective interns.

Sincerely,



Aaron Goldman, PhD

Medison

MEDISON
Delivering Innovative Healthcare

To whom it may concern,

I, Joe O'Neill, General Manager at Medison Pharma Canada.

I, Mark Gibson, Business Unit Director at Medison Pharma Canada.

Medison Canada is a pharma company with the mission to help save and improve the lives of Canadian patients across the country who suffer from the most challenging disease. Focusing solely on commercializing highly innovative therapies, Medison Canada is a pioneer in the Canadian healthcare landscape.

We are glad to share our support regarding the development of the Professional Master's in Biotechnology Management at York University Markham Campus. We have had the opportunity to meet with the York University team working on the development of this professional degree. Through our meeting, we became familiar with the design of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two, and a Biotechnology internship component.

First off, we would like to emphasize that our feedback is heavily Canadian-centered. We consistently see remarkable science driven in Canada. Yet, we repetitively see a block in translating this science into industrial-type opportunities. Even when we succeed in that regard, the success rate is minor, and we eventually lose this potential out of the Canadian infrastructure to larger corporations. We need to help anchor companies in Canada that are global. As such, our feedback regarding this degree is based on aspects that will support this goal.

One feature that the Canadian ecosystem is missing to allow such Canadian potential to flourish, is an understanding of the business aspect. In that regard, we are pleased to see a management diploma component in the proposed degree. We also highly encourage a curricular focus on **venture capital basics** and other types of funding that can sustain the development of Canadian start-ups.

Another feature that we strongly believe Canadian graduates will highly benefit from is appropriate training in **data analytics**. Such individuals would have a significant advantage in future leadership roles. For example, leaders with the appropriate fundamentals would be able to bridge data analytics and artificial intelligence with drug design. As such, we are again pleased to see a data-analytics component in the degree, and we encourage the organizing team to give this component special attention as it would provide their graduates with a leading competitive edge.

Another aspect that we think will highly enhance the employability of graduates from this degree is appropriate training on the **commercial end**. This is simply because the reality of Canadian demand is highly grounded in regulatory, reimbursement, health policy, patient engagement, quality, compliance etc. Even speaking from a Medison perspective specifically, we are highly active in these areas and regularly employ in this domain.

1176 Mt. Pleasant Rd. Unit 2
Toronto, ON M4N 2T2

MEDISON
Delivering Innovative Healthcare

Finally, and going back to the management component of this degree, we highly support this element and the inclusion of training in marketing. Specifically, we encourage future instructors to pay special attention to **omnichannel marketing**.

In summary, we are pleased to support the development of this degree especially being done in consultation with industry experts. To us, this is important since it allows catering the educational experience to benefit the future success of the Canadian landscape. We look forward to the opportunity of interacting with prospective interns and graduates.

Regards,

Joe O'Neill

Mark Gibson

Mark Gibson

1176 Mt. Pleasant Rd. Unit 2
Toronto, ON M4N 2T2

Medical Affairs Professional

James G. Burns, PhD
4464 Majestic Drive
Victoria BC Canada
burnsjamesg@gmail.com

To whom it may concern,

Please accept this letter as a brief statement of support for the Professional Master's in Biotechnology Management at York University Markham Campus.

I am currently a Medical Affairs professional at a global pharmaceutical company and have held roles in small to large pharmaceutical companies for the past nine years. My main roles include development of clinical trial protocols, delivery of fair and balanced scientific information, and pipeline therapy strategy.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Our meeting allowed me to become familiar with the structure of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two disciplines, and a Biotechnology internship component.

First, the interdisciplinary aspect of this degree along with the experiential components increase the employability of prospective graduates. This is mainly because their knowledge and skills would exceed what is gained from a typical academic training in this domain.

Second, I strongly support the science communication course that is planned for the program, as it addresses one of the biggest gaps seen in new hires – the ability to communicate science to intelligent educated non-experts and to larger groups. These are skills that can be learned but are frequently ignored. I appreciate that the program development team is taking this component seriously. I also advise that the course is designed with ample practical opportunities and continuous feedback (even from external guests) to maximize the outcomes of the training experience. In that regard, I was also pleased to see that the program development team appreciated the importance of this component and has moved the course to the first term of the degree so that students get a jump start on these skills before applying for internships.

Overall, I believe that graduates of such a program will be equipped with skills that will facilitate their success in the industry.

Thank you,

James G. Burns, PhD

Prollenium

PROLLENIUM®
MEDICAL TECHNOLOGIES INC.

Mary Avolio, Director Human Resources
Timothy Lee, Chief Scientist/Head R&D

Prollenium Medical Technologies, Inc.
29 East Wilmot Street,
Richmond Hill, Ontario
L4B 1A3
905-508-1469

To whom it may concern,

I hereby present my letter of feedback regarding the prospective Professional Master's in Biotechnology Management at York University Markham Campus.

I am a Director of Human Resources at Prollenium Medical Technologies, Inc. We are a company that manufactures and distributes dermal fillers. My main role is to oversee the administration of the human resource programs which includes, but not limited to, compensation, benefits, disciplinary matters, disputes, performance and talent management, occupational health and safety.

I am a Chief Scientist/Head of Research & Development at Prollenium Medical Technologies, Inc. My main role is to oversee the development of new class III medical devices and the regulatory approval & commercialization of these devices within the different markets globally.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Through our meeting, I became familiar with the design of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two, and a Biotechnology internship component. I have also had the opportunity to explore the courses within each of the biotechnology and management components of the degree.

First off, I am supportive of the management component of the degree as it brings in skills that prospective graduates will definitely benefit from in an interdisciplinary industry. I am also in agreement with regards to the value of an integrative capstone project that bridges both biotechnology and management. In fact, I highly recommend that students have the opportunity to bring in their own projects from their internship experiences in order to make the capstone learning component as relevant to the industry as possible.

Second, I am in support of the R&D course component. With that said, there might be a substantial amount of content to cover in one course. One option would be to split the course into two. For instance, the 1st component could focus on getting a product to market and operations. The 2nd component would cover regulatory approval of a product in different markets. Another option would be to integrate some of the content elsewhere in the program such as in the capstone project. Regardless, I consider the regulatory and quality assurance content of extreme importance, given its relevance to Prollenium and to the Canadian biotech industry in general.

I also support the data analysis component of the curriculum. With that said, I think that some of this content could potentially be integrated within clinical trials and laboratory skills. This might free up space

for covering software tools such as ERP systems and CRM or even programs for customer service and other operational software.

Finally, I highly appreciate the scientific communication and writing course since I frequently find that the writing skills of hires is not always at a level that is conducive to the industry. This is especially important given the volume of opportunities within the regulatory subfield of biotechnology in Canada.

Overall, I was pleased with the development of this program. I was also reassured with the receptivity of the group to incorporate various input from the industry.

As such, I believe that this interdisciplinary program will greatly improve the competence and employability of the future talent pool in Canada. I look forward to the opportunity of interacting with prospective graduates.

Regards,

DocuSigned by:
Mary Avolio 20-Oct-2021
91AD8094848E478...
Mary Avolio

DocuSigned by:
Timothy Lee 20-Oct-2021
E5D33E9D380E4D0...
Timothy Lee

Prollenium Medical Technologies Inc.
29 East Wilmot Street
Richmond Hill, ON L4B 1A3

Telephone: (905) 508-1469
www.prollenium.com

Sebia

Cody Mah
Service Manager
Sebia Diagnostics Canada Inc.

To whom it may concern,

I would like to provide my feedback regarding the Professional Master's in Biotechnology Management at York University Markham Campus.

I am the Service Manager at Sebia Diagnostics Canada Inc. We are a proud partner in the Medical Diagnostics space, providing electrophoresis solutions for the diagnosis of multiple myeloma, diabetes, hemoglobinopathies and alcoholism.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Our meeting allowed me to become familiar with the structure of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two disciplines, and a Biotechnology internship component.

First off, I would like to express that the management component is much needed to improve the background of hires in the field of biotechnology. However, I would like to emphasize that it would be of utmost importance to integrate as much biotechnology into this management component as possible. This sheds light on the crucial role that the capstone experience will play in bringing together both fields. I also highly recommend tailoring the capstone experience to include topics of day-to-day operations including exposure to marketing management, as well as sales processes and strategies in the world of biotechnology. This is important as I've had interactions with graduates in the past who are unfamiliar with what a tender or an RFP is. So, exposing students to such fundamental principles would be helpful.

Finally, I am also in agreement with the importance of experiential learning and internships in the program. I highly recommend securing subsidies to offset the cost of the employer and I am glad that the program developers are working on this aspect. I also encourage the developing team to set up 8 months long internships or longer to account for the onboarding process.

Overall, I believe that Canadian Biotech companies can benefit from graduates of such a program, especially that it is being designed in consultation with the industry.

Please feel free to reach out if you have any questions or wish to discuss further.

Sincerely,

Cody Mah
Service Manager
Sebia Canada

Sebia Diagnostics Canada Inc.
310 – 550 Avenue Beaumont, Montreal, QC, H3N 1V1, Canada
+1 (888) 725 3013 +1 (438) 380 3780 www.sebia.com

Eversana

Lindy Forte
Head, Market Access & Pricing
CRG-EVERSANA Canada Inc.
210B-219 Dufferin St.
Lindy.forte@eversana.com
416-453-8350

To whom it may concern,

I am glad to share my supportive feedback regarding the development of the Professional Master's in Biotechnology Management at York University Markham Campus.

I am a Head of Market Access & Pricing at CRG-EVERSANA Canada Inc. We are a company that mainly prepares Health Technology Assessment Dossiers for public and private payers across Canada and also provides pricing negotiation support to our pharmaceutical and biotechnology company clients. My main role is to lead the group of 17 employees and provide strategic insight into many of our projects based on my 20 years in Market Access.

I have had the opportunity to meet with the YorkU team working on the development of this professional degree. Through our meeting, I became familiar with the design of the program: Graduate courses in Biotechnology, a Diploma in Management, a capstone project integrating the two, and a Biotechnology internship component. I have also had the opportunity to explore the courses within each of the biotechnology and management components of the degree.
First off, I would like to say that we have had extensive experience working with interns over the years. We offer our interns opportunities in strategy-related work and even putting together health technology assessment dossiers. We often retain these students on the long term.
Through these experiences, we have come to realize that students frequently lack science communication and presentation skills along with overall professional etiquette. We have seen graduates struggle with such tasks as presenting to the CEO of a company. We are very glad to see that the Master of Biotech Management program presented to us is designed to tackle this gap and better prepare the future pool of talent for these skills.
A second common theme surfacing from our interaction with graduates from other programs over the years, is their lack of knowledge pertaining to market access, at least not to the extent required in Canada. Some programs include brief exposure to health economics, but these are more academic focused and not truly applicable to what the health technology assessment organizations are looking for (which is much more practical and rigorous). I was pleased to hear that the group working on the Master of Biotechnology Management program will ensure that students receive exposure to such topics curated by experts from the industry (type of hires and guest lectures etc.). It was also reassuring that a much more experiential approach will be adopted to as much of these topics as possible.
Yet another issue that we raised in our meeting is an additional shortfall of other programs, where excessive focus is placed on group work without ensuring accountability for learning at the individual level. This is especially important for project management and writing skills. We expressed this concern to the group and they responded with positivity that they will ensure

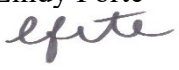
sufficient opportunities to master and assess these skills at the individual level and not only at the group level.

Overall, I was pleased with the current design of the program especially with the inclusion of professional communication training and sufficient exposure to technical skills. I was also reassured with the receptivity of the group to incorporate market access exposure and focus on individual learning along with group work.

As such, I believe that this interdisciplinary program will greatly improve the competence and employability of the future talent pool in Canada. I look forward to the opportunity of interacting with prospective graduates.

Regards,

Lindy Forte



DIVISION OF STUDENTS

Office of the University Registrar

Darran A. Fernandez
University Registrar

Bennett Centre for Student Services
4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 2100
darran@yorku.ca

November 30, 2021

To: Academic Standards, Curriculum and Pedagogy Committee

RE: Proposal for Master's in Biotechnology Management

The proposal for the Master's in Biotechnology Management program at Markham has been reviewed by the Office of the University Registrar.

We support this proposal and look forward to working collaboratively with the Faculty of Science on the implementation details in support of their requirements.

Sincerely,

Darran A. Fernandez, M.Ed.
University Registrar
York University

Appendix K: Other support letters

YORK
UNIVERSITÉ
UNIVERSITY

FACULTY OF SCIENCE

Office of the Dean

4700 Keele St.
Toronto ON
Canada M3J 1P3
T 416 736 5051
F 416 736 5950

scidean@yorku.ca
science.yorku.ca

September 10, 2021

Re: Professional Master's of Biotechnology Management for the Markham Campus

Dear Dr. Bayfield,

We have received your proposal for the creation of a Professional Master's of Biotechnology Management for the Markham Campus starting in September, 2023. We support this proposal and will support your efforts however we can, including continued assistance from the Faculty Education Development Specialist, as well as navigating through the official approval process, which includes Faculty Curriculum Committee, Faculty Council and Senate approval. We believe there will be strong demand for this Professional Master's degree, which aligns with our newly approved Strategic Objectives. We support the complement and staff requirements associated with the program as detailed in the proposal, and will discuss any additional resources that may arise as you continue to develop this degree.

Sincerely,

Rui Wang
Dean, Faculty of Science

YORK
UNIVERSITÉ
UNIVERSITY

YORK UNIVERSITY
LIBRARIES

Office of the Dean

516 Scott Library
4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 5601
F 416 736 5451
www.library.yorku.ca

Memorandum

To: Mark Bayfield

From: Joy Kirchner, Dean of Libraries

Date: October 13, 2021

Subject: Master's in Biotechnology Management Program Library Support

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York University Libraries (YUL) is strongly positioned to support the curriculum and research needs of students and faculty in the proposed Master's in Biotechnology Management program at York University's Markham Centre Campus. As noted in the Statement of Library Support, YUL provides access to an extensive array of resources and services that support the academic engagement of students and faculty in this interdisciplinary program. I draw your attention to the new Markham Centre Campus Library (MCCL) spaces that will provide immersive, technology enhanced spaces that lends itself well to your program. A dedicated graduate reading room for graduate students will also be provided in MCCL. I also highlight YUL's curriculum integration offerings and specialized programming offered through our digital scholarship centre.

We look forward to contributing to the success of students and faculty in the Master's in Biotechnology Management program.

cc: Patti Ryan, Director, Content Development and Analysis,
Jack Leong, Associate Dean of Libraries, Research and Open Scholarship
Andrea Kosavic, Associate Dean of Libraries, Digital Engagement and Strategy

YORK
UNIVERSITÉ
UNIVERSITY

FACULTY OF LIBERAL ARTS & PROFESSIONAL STUDIES

Office of the Dean

S900 ROSS BLDG.
4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 5220
F 416 736 5750
laps.yorku.ca

January 18, 2022

Mark Bayfield
Department of Biology
Faculty of Science

Email: bayfield@yorku.ca

Dear Professor Bayfield:

Re: Professional Master in Biotechnology Management

On behalf of the Faculty of Liberal Arts & Professional Studies (LA&PS), I am pleased to provide this statement of support for the Faculty of Science's proposal for a new Professional Master of Biotechnology Management program. This innovative and timely new program will give students with undergraduate degrees in Biology, Biological Sciences, Biotechnology, Life Science, and other related disciplines, hands-on experience, and critical competencies for careers in the field of biotechnology management. This new graduate program will enhance programming at our new campus in Markham and complement our Graduate Diploma in Management (GDM).

In addition to supporting this program, LA&PS is pleased to collaborate with the Faculty of Science on this unique program, which will provide students with both a Professional Master in Biotechnology and a Graduate Diploma in Management. The Graduate Diploma in Management from our School of Administrative Studies is intended to serve students without undergraduate education in business to provide them with core skills and competencies to prepare them for careers in management and potentially future graduate studies in business. This dual-credential combination offers specializations in biotechnology and management not found elsewhere in the sector.

I can confirm that the proponents from the Faculty of Science have consulted with our colleagues in the School of Administrative Studies regarding the structure of this program and the capacity of our Faculty to offer the requisite courses in the GDM program. We will continue to communicate with our colleagues in the Faculty of Science to ensure that course planning for the GDM program takes into the account enrolment demand from students in the Professional Master in Biotechnology Management program.

We wish to thank our colleagues in the Faculty of Science for their spirit of collaboration in achieving university-wide goals and developing such a novel program. We wish them every success with the launch of this new program and look forward to working together as partners and founding Faculties for Markham Campus.

Sincerely,

J.J. McMurtry
Dean
Faculty of Liberal Arts & Professional Studies

YORK
UNIVERSITÉ
UNIVERSITY

OFFICE OF THE PROVOST & VICE-PRESIDENT ACADEMIC

9TH FLOOR KANEFF TOWER
4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 5280

Memorandum

To: Martin Bunch, Chair, ASCP

From: Lisa Philipps, Provost & Vice-President Academic

Date: November 9, 2021

Subject: Master in Biotechnology Management program

I have reviewed the materials for the proposed professional Master in Biotechnology Management program. The Dean of Science has provided an unequivocal letter of support for this new program. This memo is my signal of strong support for this innovative and important program which contributes to the strength of existing programs in the Faculty of Science and York University. This new program is strongly aligned with the University's Academic Plan in its view toward experiential and professional learning, and in its focus on problem solving skills and collaboration across disciplines.

Initial programs developed for York's Markham Campus focus on new technologies and entrepreneurship, and how these are informing and changing many fields of knowledge and professional life. Strong research and academic support for students is offered by York University Libraries, and all facilities have been designed in collaboration with participating Faculties, programs and service units.

The proposed Master in Biotechnology Management is a unique professional program from which graduates will emerge with two qualifications: a Master of Biotechnology and a Graduate Diploma in Management (GDM). Taken concurrently over four semesters, this hybrid-delivery program will equip students who come from a life sciences background with little or no work experience in biotechnology with interdisciplinary career-ready knowledge and skills. This program addresses an identified need in the Canadian biotechnology industry and will train students through theoretical, practical and work-integrated learning to participate in the high-demand biotechnology and life sciences management sectors.

A standalone Graduate Diploma in Biotechnology (GDB) represents a subset of the courses taken by students in the Professional Master in Biotechnology Management program, but unlike these master's students, GDB students will take neither the Graduate Diploma in Management (GDM) nor a work placement.

I have reviewed the enrolment projections and am persuaded that the resource demands to launch this program are both appropriate and accounted for in the current proposal and can be served by our current and future faculty and staffing plans for the Markham Campus. This program will be unique in Ontario and will draw upon practice-based and scholarly expertise that York University is more than capable of delivering.

Housed at York's Markham Campus and within the University's Faculty of Science, this master's program builds on an existing undergraduate degree in biotechnology and draws

on input from the Faculties of Science and Liberal Arts & Professional Studies (through which the Graduate Diploma in Management is already offered), the School of Continuing Studies, and from alumni, biotechnology industry leaders and an external advisory board. Incorporating two paid internships in the latter semesters of the program, students will gain significant knowledge in biotechnology through hands-on lab work and courses in administrative studies and management.

The Markham Campus is being equipped for this area of study with the building of wet and dry laboratory facilities for Biology, Chemistry and Physics, and dedicated lab personnel and a work placement liaison will be recruited to support student learning and experience. While York already has significant faculty capacity in Biotechnology and Administrative Studies, additional faculty will be hired with expertise in pharmaceutical, diagnostic and therapeutic strategies to enhance program pathways. At its start in 2023, the program will be ready to accept a full capacity of 27 full-time students per year.

Throughout placements and capstone projects, students will be supervised and assessed according to leading practices in work-integrated learning and experiential education. These practices will be supported by a dedicated team of Work-Integrated Learning and Experiential Education leadership at the University. Students will be supported by a suite of academic and administrative services that are to be shared across programs at the Markham Campus and will be able to make use of the full range of existing facilities at York's Keele and Glendon campuses. Reflecting the priorities addressed in the University's 2020-2025 Academic Plan, this graduate program particularly manifests the concerns for 21st Century Learning; Knowledge for the Future; From Access to Success; Working in Partnership; and Knowledge for the Future.

On October 8, 2019, York University's Board of Governors approved the business plan for the University's new Markham Campus, situated in the heart of York Region, one of the fastest growing regions in Ontario. Following a rigorous planning process and the commitment of financial and in-kind resources from the City of Markham, York Regional Council and York University, construction began on the new campus in summer 2020 and is on track for completion in time to welcome students in September 2023.

The Markham Campus building is a $275.5m project, designed by internationally celebrated architecture firm Diamond Schmitt, that will accommodate up to 4,200 students in 400,000 square feet of light-filled space, with the potential to expand student capacity at the campus over time for as many as 10,000 students. The University's Board has approved a ten-year budget based on current enrolment projections, and the Ontario government has agreed to fund domestic student spaces.

Staffing for the campus is ramping up, with key positions in place, and additional faculty and staff hires following. Seventeen faculty dedicated to Markham programming have already been hired, with a further 16 searches have been authorized by the Provost for start in 2022, with more authorizations planned for future hiring cycles. The Deputy Provost for Markham Campus will report to both the Provost and the President of the University, and will collaborate actively with Deans of Faculties present at the campus. Key senior staff roles – in Student Services and Advancement, for example – will oversee other aspects of campus management and operations. The Executive Director and Deputy Provost together are responsible for the administrative and academic operations of the campus, and will participate in the hiring of staff and development of planning and operational committees with the Faculties offering programs onsite. In all cases, thorough searches are being undertaken to locate highly-qualified and diverse candidates who will bring excellence and expertise to this initiative.

The location of this campus is bringing York University to the downtown core of Markham, reaching out to students in this fast-growing community where they are. Markham Campus

is a purpose-built facility that will offer all the support future students will need to achieve success in their programs of study. In addition, Markham students will be able to access all York University offerings and facilities at both its Keele and Glendon campuses, including undergraduate courses and offerings that can satisfy degree requirements outside of the major area of study.

I look forward to receiving the reviewer's reports and to submitting the final proposals for approval to Senate, Quality Council and the Ministry of Colleges and Universities in due course.

York University Quality Assurance Procedures (YUQAP)
New Program Appraisal

External Appraisal Report on the Proposed New Masters in Biotechnology Management

.

External Reviewer(s)

Reviewer #1	Reviewer #2
Lory Z. Santiago-Vázquez, Ph.D. Associate Professor of Biology and Biotechnology Program Chair of Biotechnology M.S. University of Houston-Clear Lake Dept. of Biology and Biotechnology 2700 Bay Area Blvd. Houston, TX, USA 77058 Phone: +1-281-283-3776 santiago@uhcl.edu	Michael Sacher, Ph.D. Professor, Biology Director of Diploma in Biotechnology and Genomics, Biology Concordia University Richard J. Renaud Science Complex, 7141 Sherbrooke W. Montreal, Quebec H4B 1R6, Canada Phone: (514) 848-2424 ext. 5627 michael.sacher@concordia.ca

1. Outline of the Visit

- *Who was interviewed?*
  See agenda picture below.

MEETINGS
SEPTEMBER 24, 2021
Alice Pitt, Senior Advisor, Markham Academic Strategic Planning, Thomas Loebel, Dean, Faculty of Graduate Studies (FGS) Mark Hayward, Associate Dean Academic (FGS)
Mark Bayfield, Program Proponent, Associate Professor, Department of Biology, Faculty of Science Jade Atallah, Assistant Professor, Teaching Stream, Department of Biology
Gerald Audette, Associate Dean Faculty, Faculty of Science Michael Scheid, Associate Dean Students, Faculty of Science Ashley Nahornick, Educational Development Specialist, Faculty of Science

Figure 1: Participants of the 3 different meetings that Dr. Sacher and Dr. Santiago-Vázquez attended on the afternoon of September 24 via zoom.

- *What facilities were seen?*
  The meeting was virtual. However, the organizers provided a pdf document titled "**An Introduction to Markham Campus- York U**". It provided an overview of the facilities, the campus mission, and also provided a short video of the new facilities and plans for the building.

- *Any other activities relevant to the appraisal*
  N/A

2. General Objectives of the Program

- *Is/are the program name and degree designation(s) appropriate?*
  The name of the program and the degree designation are appropriate. It is our feeling that international students are more drawn to programs with the word "biotechnology" in them and we feel this will be no exception.

- *Are the general objectives of the program clear and are they consistent with University and Faculty missions and academic plans?*
  The objectives of the program were clearly stated. One objective was "to provide students with insight into the latest biotechnology theories, discoveries, and laboratory skills". The objectives aligned very well with the Faculty mission and the vision stated for the Markham campus. However, as will be discussed later, we feel that the laboratory course "*Laboratory Skills in Biotechnology*" as presented in this draft of the proposal did not fully convey this objective.

3. Need and Demand

- *Is there sufficient explanation of need/demand for the program?*
  The proposed program sounds unique to the reviewers when compared to other programs in Canada, mixing biotechnology with management skills and required internships. A thorough overview of similar Canadian programs was presented (Appendix A). While there are several master's-level programs in the greater Toronto area, one is focused on health and agricultural biotechnology, and the other is strictly online. The unique feature of this current proposal is the mixture of biotechnology, management, and work placement/internship. We were convinced by the extensive studies indicating that there is in fact a need and demand for this type of program, both from students and from industry executives.

4. Program Content and Curriculum

- *Does the curriculum reflect the current state of the discipline or area of study? If applicable, comment on the appropriateness of any unique curriculum or program innovations or creative components.*
  We found that the work placements were an excellent vehicle for exposing students to the current state of the discipline and providing them with experiential learning. Having said that, we also had concern as to how easy it will be for all students to be matched into a work placement. We stress the need for connections with biotech industry both in the greater Toronto area and elsewhere, as there is no need for solely in-person placements. This could be accomplished through subsequent targeted hires for this program as well as through enthusiastic industry executives already commissioned for their views on this program.
  In addition, the mix of management and biotechnology courses is unique when compared to other Canadian Biotech programs. The fact that students will receive not only a master's degree but a management diploma simultaneously, should position them well for any number of paths upon graduation, including further studies in management at a later time. The work placements, especially if both are done in the same company as planned, could provide graduates with an inside track for a position in the same company which is a certainly a competitive advantage.

- *For graduate programs, is there adequate evidence that each graduate student in the program will take a minimum of two-thirds of the course requirements from among graduate level courses?*

The program is designed to offer 36 credits. The course offerings are fixed, meaning there seems to be no electives other than the courses offered in this program. Thus, students will receive all 36 credits from the courses and work placements in this program and will clearly receive the minimum credits required from graduate-level courses for graduation.

5. Program Structure, Learning Outcomes and Assessment

- *Are the program requirements and learning outcomes clear, appropriate and in alignment with the relevant degree level expectations?*
  The learning outcomes were very clear. The program requirements of 36 credits, coming from courses in the diploma in management program and the biotechnology courses as well as two work placements, were also clear. Admission requirements were clear but we feel they could be more specific. While a degree in a number of biology, chemistry, or life science-related programs was listed as a requirement, we feel the program should specify how many credits and in what subjects would suffice the minimum requirements. For example, what if an applicant has a chemistry background but little in the way of biology or biotechnology? Or perhaps a Biology degree with a background in Ecology. That applicant may in fact struggle with some of the courses. Rejecting such an applicant could result in confusion on the part of the applicant. It would be useful for applicants to know what type of courses and how many credits in those types of courses would be required for this program.

- *Comment on the appropriateness of the program curriculum and structure to support the program learning outcomes. For undergraduate programs, comment on the nature and suitability of students' final-year academic achievement in the program. For research-focused graduate programs, comment on the nature and suitability of the major research requirement(s).*
  The proposal very clearly states the learning outcomes for this program. Each proposed course was linked to one or more of the outcomes. We felt that the links to the outcomes were indeed appropriate and that the courses offered in totality very nicely support all learning outcomes. Though this is not a research-focused program, there is a laboratory course offered, Laboratory Skills in Biotechnology. We felt that the course did not include enough advanced instrumentation for this level of program. The course came across as more appropriate for an undergraduate level and we strongly encourage acquisition of more advanced instrumentation or securing access to advanced instrumentation through some other location or company.

- *Are the methods and criteria for assessing student achievement of learning outcomes and documenting those are appropriate and effective?*
  Assessments are varied and include laboratory reports, exams, written assignments, presentations, and group work. These seem appropriate and fair to the students who may perform better in one type of assessment versus others. Documentation using the "e-class" system is appropriate and will allow students and instructors to be aware of and react to any issues that arise.

- *For graduate programs, comment on the appropriateness of the program length, including on how students' time-to-completion will be supported and managed to ensure that the program requirements can be reasonably completed within the proposed time period.*
  The program length was appropriate. While securing a work placement could be stressful on students who struggle to achieve this, scheduling the Scientific Communication and Writing course in the first semester, before students need to search for a work placement, is a very good idea that can help mitigate any such issues. It is our experience that may students, especially international and non-traditional students, want to be able to study part time. We feel this will also be the case for this proposed program and encourage the committee to consider and work in a part time option.

- *Comment on the appropriateness of the proposed mode(s) of delivery to meet the program learning outcomes.*
  While most courses will be offered in person, two were planned on being offered as either online or hybrid. In addition, during discussions it became apparent that work placements could also be remote if necessary. In addition, remote work placements were discussed as options to broaden the possible

companies available to students. It would appear that all courses except for the laboratory course could be offered online if the situation arises.

- *Comment on the appropriateness of the experiential education component of the program, if applicable.*
  There were multiple opportunities for experiential learning. These include the laboratory course, the two work placements and the capstone project. These are all geared towards multiple learning outcomes. We felt that these experiential components were a strong point of this program.

6. Admission Requirements

- *Are the admission requirements appropriately aligned with the program learning outcomes?*
  As mentioned above on Section 5 bullet 1, the admission requirements could be clearer on background/pre-requisites required. Some of the degrees listed, such as chemistry and some biology disciplines, would not have the required foundation courses for a student to excel in your program. The program proposers may want to consider adding a list of pre-requisite courses that can provide more direction to both applicants and evaluators.
  An item to consider when pre-requisites are adopted would be what to do if a student is mostly qualified but is missing one or a few of these courses. Would the university be able to allow them to complete those courses in their Biology program before they are admitted or after admission and how this will affect the flow of the curriculum?

- *Is there sufficient explanation of any alternative requirements, if any, for admission into an undergraduate, graduate or second-entry program, such as minimum grade point average, additional languages or portfolios, along with how the program recognizes prior work or learning experience?*
  The proposal mentions that graduates with other science degrees or 3-year degrees plus 1 year of relevant work experience may be admitted. A list of pre-requisite courses would also make it easier for a potential student that could qualify with these alternative requirements. It will allow them to judge whether they will have a good chance at admission. For these students, interviews as a requirement for admission might be an alternative.
  These pre-requisites might become very important if the program begins to observe an influx of international applicants, which has been the experience of the reviewers in their respective biotechnology programs. Their educational systems might be quite different from those in Canada and having a list of required or preferred courses might help with their admission evaluation.

7. Resources

For all programs

- *Adequacy of the administrative unit's planned utilization of existing human, physical and financial resources, and any institutional commitment to supplement those resources, to support the program.*
  This is well covered in the proposal, including the building of a brand-new purpose-built laboratory and facilities in the new Markham campus. The building is being designed with the needs of the program in mind. The proposers might want to pursue avenues to obtain more advance instrumentation to teach their Laboratory Skills in Biotechnology course.
  An item to consider would be to coordinate with York University's internships/coop office to help coordinate and manage all the internships/work terms. The office can also assist faculty in developing relationships with industry, which can be time consuming especially if these are required for all students in the program and there are only 2 faculty in the Program to teach all the courses, manage the program, and purse internships for all students.

- *Appropriateness of the collective faculty expertise to contribute substantively to the program.*
  The Faculty of Science recently hired a "full-time, teaching stream faculty member" that will administer the program and teach the Laboratory in Biotechnology course. There is a second search for a faculty member to teach the other required Biotechnology courses. The Graduate Diploma in Management already has the required faculty needed for fulfilling the teaching requirements. During our meetings with the faculty, we

also learned that local subject matter experts will be hired as adjunct instructors or as contributors to lectures or units on courses taught by another faculty. These faculty lines should be able to appropriately cover the teaching needs of the program as long as the student body does not increase too much beyond what is stated in the proposal.

- *Participation of a sufficient number and quality of faculty who are competent to teach and/or supervise in the program, including qualifications, research, innovation and scholarly record.*
  As listed above, faculty are being hired specifically for this program with the needs of the program in mind. An initial number of two might be sufficient to start the program but if the program grows, additional faculty lines might be required to support the growth. The use of adjuncts as described above will help to fulfill the teaching needs.

- *Evidence that there are adequate resources (e.g. library, laboratory, studio space, equipment) to sustain the quality of scholarship produced by undergraduate students as well as graduate students' scholarship and research activities.*
  As mentioned above and communicated during our visit, this program will have brand new facilities described in the proposal that will be built with the specific needs of this program. We also want to highlight again the need for more advanced instrumentation to teach the biotechnology laboratory.

Additional criteria for graduate programs only

- *Evidence that faculty have the recent research or professional/clinical expertise needed to sustain the program, promote innovation and foster an appropriate intellectual climate.*
  We were not provided with CV's or websites or any other information on their new hire although we met with a few faculty during our virtual visit. Their ability to understand the needs of the program was evident during our conversation. The other faculty member will be a new hire and the search committee will be in charge of reviewing the credentials to make sure they find the right candidate to fulfill their program needs.

- *Where appropriate to the program, evidence that financial assistance for students will be sufficient to ensure adequate quality and numbers of students.*
  We were informed that there will be no financial assistance provided for students, although their work experience will be paid and they will earn a valuable year of work experience to add to their resume. The proposers might want to consider need-based assistance, especially for local students. Perhaps they can establish scholarships in collaboration with the local biotech industry.

- *Evidence of how supervisory loads will be distributed, and the qualifications and appointment status of faculty who will provide instruction and supervision.*
  Out of the two faculty hired for the program, one will teach the laboratory and administer the program, and the second one will teach four courses. We do not know who will be in charge of the capstone experience. As mentioned several times, these are new hires hired specifically for the needs of this program, therefore their credentials will have to match the teaching needs of the program.

8. Quality of Student Experience

- *Is there evidence of a program structure and faculty research that will ensure the intellectual quality of the student experience?*
  The faculty teaching this program will be teaching-stream and will not have a research program. These faculty are still able to update their skills by participating in conferences, short development/continuing education courses, and their own mini-internships with local biotech industry. The proposed faculty size is small but if they bring in experts to teach, based on what was described above, we expect it to be appropriate. The ability to bring in experts remotely will also be a potential source of adding expertise to the program and enhancing the student experience.

Note: Reviews are urged to avoid using references to individuals. Rather, they are asked to assess the ability of the faculty as a whole to deliver the program and to comment on the appropriateness of each of the areas/fields of the program that the university has chosen to emphasize, in view of the expertise and scholarly productivity of the faculty.

9. Other Issues

N/A

10. Summary and Recommendations (*Note: The responsibility for arriving at a recommendation on the final classification of the program belongs to the Appraisal Committee of Quality Council. Individual reviewers are asked to refrain from making recommendations in this respect.*)

In summary, we were positively impressed with the proposed program and with the unique training opportunities that graduates will acquire. A few items that we would like the proposers to consider are listed below:

a) A part-time option
b) Need-based scholarships
c) Pre-requisites required for admission
d) Potential influx of international students
e) More advanced instrumentation for the laboratory course
f) Remote internships
g) Coordination with university's coop/internship office
h) Biotech advisory board
i) Funding to update faculty knowledge since these will be teaching-stream.

Please feel free to contact us if you have any questions about our report.

Sincerely,

Lory Z. Santiago-Vázquez, Ph.D.
Michael Sacher, Ph.D.

October 25, 2021

Dean Rui Wang
Faculty of Science
York University
Toronto, ON

Re: External assessment of Professional Master's of Biotechnology Management & Graduate Diploma in Biotechnology, York University Markham Campus

November 3rd, 2021

Mark Bayfield
Associate Professor

Department of Biology

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Dear Dean Wang,

I am writing you to update you on the progress of our revised proposals for the Professional Master's of Biotechnology Management and the Graduate Diploma in Biotechnology. Recently, we received comments from external reviewers for these programs, and we have attempted to revise the proposals accordingly before they are submitted for approval at Faculty Council and then later at ASCP and Senate.

Below, I would like to summarize the respective edits we have made to the proposals in response to the referees in a point-by-point fashion. For clarity, I am referring below to the summary list on Page 6 of the report ("*Summaries and Recommendations")*:

"In summary, we were positively impressed with the proposed program and with the unique training opportunities that graduates will acquire. A few items that we would like the proposers to consider are listed below:

a) A part-time option

We have considered a part-time option for the degree, and hope that we will be able to offer this at a later date. The following text has been added to Section 2.1 (A Brief Overview) of the proposal:

At this point, a part-time option is not being offered, due the nature of the scheduling of sequential coursework, the desire to retain students in cohorts for the capstone course experience and the two consecutive work-placements. As the program grows and the possibility of offering courses more than once a year becomes more likely, the program committee plans to re-visit the option of part-time studies as part of program reflection efforts.

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b) Need-based scholarships

While the proposed degree is a Professional Master's degree and is thus less associated with financial aid, we have added the following text to Section 7.7 (Financial Support):

We plan to liaise with local biotechnology industry to see if we can develop a limited number need-based scholarships to help make the program accessible for students facing financial constraints. Paid internships will also constitute a form of financial aid. Eligible students will also have access to financial aid through the Ontario Student Assistance Plan (OSAP). In addition to OSAP, students have access to additional financial supports which are described on this site: https://www.yorku.ca/gradstudies/students/current-students/awards-and-scholarships/

c) Pre-requisites required for admission

We have added pre-requisites that articulate a requirement for background in statistics and molecular biology/cell biology/biochemistry/genetics (Section 6.1 and Appendix D). Requirements for remaining in good standing was also added based on Faculty of Graduate Studies (FGS) guidelines.

d) Potential influx of international students

In addition to the more extensive articulation of pre-requisites that will allow us to better assess qualifications of applicants (including international ones), we have reached out to Hugo Chen (Director, International Collaborations and Partnerships Dean's Office, Faculty of Science) and Keshia Gray (Associate Registrar & Director Student Recruitment & Admissions). They have confirmed that the Registrar's office will assist us in the assessment of international applicants, which together with the M. Biotech advisory board should allow us to effectively determine the suitability of international candidates.

e) More advanced instrumentation for the laboratory course

The laboratory course description has been modified to incorporate more advanced equipment into the curriculum (Appendix I). Briefly, the laboratory course will consist of a term-long continuous and connected series of experiments that culminate towards an end goal. For instance, students will design, express, isolate, and validate biomedically relevant recombinant proteins starting from molecular cloning all the way to ending with protein functional activity assays. Although general SOPs for the individual techniques will be provided, the students will design, optimize, and troubleshoot their own experimental flow given available reagents.

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Students will communicate their results through team presentations where their findings have to also be connected with developments in the field of biotechnology. Finally, examples of more advanced equipment that will be needed have also been included. It is important to note that these are based on the current general course plan. As the course design develops in more detail, this list will evolve and become more comprehensive.

f) Remote internships

The text of Section 5.5 (Delivery Modes) has been updated: *Work placements could be in-person or remote, based on industry needs.* The course proposals for Work Placement A and Work Placement B have also been modified: *Work placements may be conducted remotely or in-person depending on the employer's needs.*

g) Coordination with university's coop/internship office

We continue to reach out to York's Co-op/Experiential education support staff, including staff that have been assembled for the Markham Campus. The following text has been added to Section 7.5 (Support Services) of the proposal: *Logistics for the work placements associated with the program will be coordinated with the experiential education support team specific to the Markham Campus, including student success advisors, career coaches, work-integrated learning administrators, employer engagement staff, and career development and education support.*

h) Biotech advisory board

This was a very helpful suggestion and we have initiated reaching out to research-stream Faculty and potential industry partners to form an advisory board that will meet regularly in order to assess the suitability of the curriculum as well as to assist with the admissions process. Several research-stream faculty have already agreed to this. The following text has been added to Section 5.5 (Delivery Modes):

The programming and delivery of the M. Biotech Management degree will also be informed and revised through consultation of a M. Biotech Management Advisory Board, which will be made up of the full-time faculty delivering the courses, a group of York research-stream faculty with expertise in biotechnology, as well as leading biotechnology industry experts. Members of the board will also assist in the admissions process. The role of the board might also involve providing an industry perspective to certain topics upon student request. Consultations of willing members to serve on the board have been initiated.

i) Funding to update faculty knowledge since these will be teaching-stream.

The following text has been added to the proposal in Section 7.1 (Resources):

Faculty delivering the programming will have opportunities to keep up to date with the biotechnology field and for pedagogical development through a professional expense reimbursement fund, sabbatical leaves and industry-coupled training/development opportunities accessed through the M. Biotech Management advisory board and internship relationships.

We are hopeful that our revisions have addressed all the concerns of the external reviewers, and in so doing have strengthened the proposals substantially.

Warm regards,

Mark Bayfield, Ph.D.
Program Lead, F.Sc. @ Markham

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November 5, 2021

Re: Professional Master's of Biotechnology Management for the Markham Campus

Dear Dr. Bayfield,

We have received your revised proposal for the creation of a Professional Master's of Biotechnology Management for the Markham Campus starting in September, 2023. We were pleased to see that the external reviewers were so positive about the program. We support this proposal, including the external reviewer request for relevant lab instrumentation, and will support your efforts however we can, including continued assistance from the Faculty Education Development Specialist, as well as navigating through the official approval process, which includes Faculty Council and Senate approval. We believe there will be strong demand for this Professional Master's degree, which aligns with our newly approved Strategic Objectives. We support the complement and staff requirements associated with the program as detailed in the proposal, and will discuss any additional resources that may arise as you continue to develop this degree.

Sincerely,

Rui Wang
Dean, Faculty of Science

School of the Arts, Media, Performance & Design

Major Modification Proposal
BFA in Creative Technologies
Markham Campus

November 2021

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Major Modifications to Existing Programs
Proposal Template

Major Modifications to Existing Programs fall under Section 5 of the York University Quality Assurance Procedures (YUQAP):
https://yuqap.info.yorku.ca/home/procedures/protocols/major-modifications-to-existing-programs/

The following changes are considered to be major modifications:

a) Substantive changes to learning outcomes and/or approved requirements that comprise up to approximately one-third of the program serve as a guideline for inclusion under the major modification guideline.
b) Major changes to courses comprising a significant proportion of the program and making an important contribution to meeting program learning outcomes (approximately one-third of courses).
c) The addition of a new major (undergraduate) where a similar major exists.
d) A new specialization at the graduate level.
e) Addition or deletion of streams.
f) The addition of a new option (e.g., location or part-time/full-time) within an existing program.
g) Establishment of undergraduate certificates.
h) The merger of two or more programs.
i) Establishment of a minor program or option.
j) The offering of an existing program substantially online where it had previously been offered in face-to-face mode, or vice versa.
k) At the master's level, the introduction or deletion of a major research paper or thesis, course-only, co-op placement, internship, or practicum option.
l) The introduction or deletion of a field in a graduate program.
m) The creation of a collaborative specialization at the graduate level.
n) The creation of combined degrees (existing programs), either undergraduate, graduate, or undergraduate/graduate.
o) Any change to the requirements for graduate program candidacy examinations or residence requirements

Note: *Separate templates exist for the remaining types of Major Modifications, specifically:*

New undergraduate certificates
Closure of undergraduate certificates *(see Program Closure template)*

Major Modifications Proposal

1. Faculty: AMPD
2. Department: Governance at Markham is still TBD, but we recommend an Interdisciplinary Council of AMPD departments at the outset of the program.
3. Program: Creative Technologies
4. Degree Designation: BFA
5. Type of Modification: Revision of the Integrative Arts program as a Markham-specific, pan-faculty program in Creative Technologies, requiring changes to program requirements and content that affect the learning outcomes.
6. Location: Markham Campus
7. Effective Date: September 2023

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8. Provide a general description of the proposed changes to the program.

   The Specialized BFA in **Creative Technologies** is proposed as a major modification of Integrative Arts as a new major for the Markham Campus. The pan-faculty BFA in Integrative Arts places an emphasis on creative methodologies, interdisciplinary study of the arts, and engagement in the creative industries by combining arts and technical skills with a special focus on community engagement and social justice.

   At Markham, Creative Technologies will centre on critical entrepreneurship by blending creative practice and theory with technological expertise and experiential learning in community contexts. As with Integrative Arts, Creative Technologies does not require a portfolio, which can be an obstacle for students who do not have access to arts training prior to university. This major will enable students to pursue courses in three broad pathways (See Appendix E – Creative Technologies Pathways & Community Resources):

   - **Engaging Research**: Research-Creation in Creative Technologies
   - **Reshaping Industry:** Creative Technologies Industry Engagement
   - **Building Community:** Participatory Creative Technologies

By pathways, we are not referring to separate streams, but rather areas of emphasis from which students can opt to select courses. Crucially, students can move between these pathways as they pursue their degree. While collaboration, sustainability and social change are the core program values, innovation, decolonization, and entrepreneurship are more pronounced in certain pathways than others.

There are several points of distinction between Creative Technologies and Integrative Arts: the new program's adoption of the 1.0 credit course model; an emphasis on entrepreneurship in creative fields; a commitment to social engagement and experiential educational opportunities including a pilot Co-op program; and the program's site-specificity in Markham and York Region. In keeping with Integrative Arts' commitment to C4: Cross-Campus Capstone Classroom, Creative Technologies also has much in common with the C4 project through new initiatives envisioned at Markham. They share a foregrounding of collaboration, strategies for continuous learning, and effective communication across diverse settings as required for the future of work in the 21st century. Creative Technologies de-emphasizes the individual artist or creator as knowledge producer and energizes collaborative project development across all four years of study. In doing so, the program underscores the process of collaboration itself as the site of creative practice, while providing students with the foundational knowledge needed to navigate new and evolving fields, and to create new jobs for themselves and for others.

While overlapping in program structure and spirit, Creative Technologies offers a range of courses available only in Markham (unlike Integrative Arts which is open to a spectrum of in-person studio and studies courses offered by AMPD departments at Keele); a series of 1.0 credit courses focused on "tech-know" and career-building skills; an emphasis on entrepreneurship in creative fields; specialized courses in community-engagement by experts in this field, and a commitment to experiential learning by emphasizing collaboration as a necessary creative mindset of the 21st century. This program orientation will be facilitated through experiential education opportunities, including participation in the C4 Project and a pilot Co-op option.

In a report provided by Higher Education Strategy Associates, *Options and Analysis of Creative Technologies,* there is a wide variety of program designs under the program title **Creative Technologies**. The HESA report further notes that this program modification proposal is both rooted in critical inquiry into contemporary technologies and modular in the sorts of technologies that students can study.

Notably, the report indicates that "something of an outlier for CT programs, particularly in that many of the core courses has students interrogate different socio-economic themes, understand the role of digital art in colonial structures in thinking about how art can contribute to and shape conversations and efforts around decolonization, and get practical training in using arts technologies and coding in sustainable and ethical ways."[1]

Our aim in developing this program at York's Markham Campus is two-fold:

(1) the program can develop its own identity and distinct approaches free from an existing nomenclature that is already associated with a known institution;

(2) the program can develop an understanding in the minds of incoming students, as a connection among learners seeking work in an entrepreneurial mode, acquiring a diverse skills base, and connecting emerging arts and media with public engagement.

The program's distinct approach will further support student enrollment and cement prospective students' understanding of AMPD's unique offerings in this area, as Creative Technologies is developed in coordination with the complementary Integrative Arts program. These two programs stand to help define one another through a range of cross-listings.

We believe York's Creative Technologies program will carve a new niche within these comparable and competing programs in Ontario, Canada, the United States, and other international centres. In the immediate vicinity within Ontario are several offerings at the Ontario College of Art and Design University and at Ryerson University that must be considered. Both of these institutions are significant as they draw on students considering public universities, especially those immediately local to Toronto. The programs range from "Art Media and Design," "Strategic Foresight and Innovation," "Digital Futures," "Integrated Media," and "Games and Play" at OCADU to "New Media" and "Creative Industries" at Ryerson. The number and breadth of these programs indicate a high demand for degrees covering these topics, practices and skills training, and a commensurate job market to support those skills.

1. "Options and Analysis of Creative Technologies." *Higher Education Strategy Associates*. 2021: 4.

9. Provide the rationale for the proposed changes.

The AMPD Markham Working Group resumed its work in Fall 2020 by developing a Vision Statement for the proposed curriculum. Central to the committee's vision for Creative Technologies is that the new Markham program will provide modular and flexible learning pathways that are post-disciplinary, outward-facing, and connected to communities and industry (see Appendix E – Creative Technologies Pathways & Community Resources.

As with our Integrative Arts program, Creative Technologies courses will be pedagogically innovative and oriented to open learning and experiential education while emphasizing a decolonial understanding of world affairs at all stages. The Markham program draws on strengths of all departmental areas in AMPD, including a range of online and blended courses that can support all campuses. For this reason, a modification to the pan-faculty Integrative Arts program is the most sensible way to develop new course offerings at Markham.

Creative Technologies overlaps with but is distinct from other AMPD programs. The Media Arts stream of the BFA Film in the Department of Cinema and Media Arts is keenly oriented to digital narration and storytelling, and several 1.0 credit options and other courses offered by this program will be integral to a Creative Technologies student's flexible pathways. Likewise, the Digital Media program in the Department of Computational Arts, in conjunction with Computer Science in the Lassonde School of Engineering, offers clear combinations of creative practice and digital technical skills. The Department of Design offers a BDes with specializations in visual communication, information design, and interaction design. Together, these differ from other undergraduate offerings from AMPD and the proposed Creative Technologies program, although areas of strength could serve a vital role in the new program's future curriculum. These are several points of possible expansion and cross-listing for new and existing faculty to explore where they may want to offer new transdisciplinary teaching. Specialized courses in Markham in community-engagement, decolonizing arts and technologies, creative technologies in industry engagement, and entrepreneurship will also be of interest to Keele/AMPD students as electives. Moreover, the Creative Technologies program can support existing graduate degrees in AMPD, as it is expected that students interested in professional arts careers and/or ongoing research pathways would be encouraged to pursue graduate programs in AMPD at the Keele campus.

10. Comment on the alignment between the program changes with Faculty and/or University academic plans.

The proposed Creative Technologies BFA's emphasis on combining creative practice with technological tools, collaborative experiences at all levels of study, decolonization and social justice aligns with York University's larger academic vision in Markham: to develop a campus "centred on technology and entrepreneurship"(2).[1] Diversely finished and equipped spaces are dispersed on multiple floors of the building, leveraging adjacencies to other facilities and academic units and enabling interactions between students and faculty of different disciplines into the daily routines of campus circulation. Planning has included outfitting studio spaces for work with a variety of emerging technologies, and also for spaces that can engage an immediate community outdoors through workshops, presentations and gallery exhibition. Creative Technologies is committed to the priorities outlined in York's University 2020-2025 Academic Plan, emphasizing in particular that "digital inter-connectivity and physical mobility of people generate complexity but also immense possibilities to accelerate collaboration and problem solving" and that "technology is simultaneously enabling, enhancing, and disrupting every sphere of life and work, as well as revolutionizing how we all learn, think, and create" (4). The need to rethink our programs to address emerging societal issues and a fluid labour market calls for flexible and forward-thinking pedagogical approaches and cross-disciplinary thinking and to "pursue inclusive excellence by decolonizing curriculum and ensuring our graduates are known for their global mindset, ethical judgment, and superior ability to integrate diverse ideas and worldviews" (6). As emerging communications and media technologies enable us to produce and transfer data at increasing rates and volumes, these data saturate our social practices, built environments, health-care systems, and aspirations for a sustainable future. Amid this context of continuous change, creative thinkers are needed to collaborate with an ethical mindset that foregrounds sustainability, equity, and decolonization. **Creative Technologies** meets this need as it offers a curriculum to begin making community-focused work while in university and as a launchpad for professional practice across a range of possible fields, including work in industries still in development. Students will graduate not only with technical and artistic skills, but also with a portfolio of collaborative real-world projects, novel team-work solutions, and individual creative works that demonstrate transferable skills and expertise.

The **BFA in Creative Technologies** is equally well-aligned with AMPD's 50+ Strategic Plan[2.] AMPD describes itself as a future-focused art and design school that connects cultural expression with evolving technologies to empower future leaders, who are ready to build more equitable and sustainable futures for themselves and their communities. Its vision is to be "Canada's leading school for socially engaged

artists, designers and thinkers committed to connecting globally recognized work with sustained local impact." Creative Technologies is, accordingly, strongly aligned with a future focus in its emphasis on emerging technologies as the basis for artistic research and invention. Further, its transdisciplinary structure and content promise to fulfill most directly the objective of connecting the arts with other fields such as health, education or technology. As with Integrative Arts, the mission of our Creative Technologies program is oriented to "connecting cultural expression with evolving technologies" in order to "collaborate with future leaders who are ready to build more equitable and sustainable futures for themselves and their communities." Through its emphasis on creative and collaborative methodologies and interdisciplinary study across the arts, Creative Technologies responds to the call "to build new connections across social divisions, and to imagine and create sustainable futures." As outlined in AMPD's strategic plan, Creative Technologies will provide a community-facing engagement with creative industries "built through connections: across departments and disciplines; across the University; across diverse industries, communities, and beyond." Creative Technologies addresses AMPD's four major theme areas by connecting **self + community, arts + technology, imagination + industry, and edge + centre**. The curriculum of the Markham Creative Technologies program will promote collaboration across all four years of study through a structure that brings students together in a common first year, encourages exploration through flexible curricular laneways in their second and third years including experiential educational opportunities such as Field Placement and a proposed Co-op program that will serve as a pilot project for all of AMPD, and a portfolio-building final year that enables graduates to emphasize both individual and teamwork-driven capstone projects.

Most importantly, as with Integrative Arts and other programs in AMPD, the decolonization of knowledge and methods which is part and parcel of the social justice framework within which this program is grounded will enable a reimagining of creative practice and theorization which does not centre white, Western approaches, but places them in dialogue with alternative epistemologies. Indeed, it is fully expected that the hybrid practices which will emerge out of the Integrative Arts and Creative Technologies programs will be significantly shaped by feminist, queer and trans, Black and Indigenous, abled and disabled perspectives, thereby opening them up to a broader world of experience.

Finally, the program will serve as infrastructure for new partnerships between AMPD and external stakeholders in local government, industry, cultural, and community groups. The emphasis on creation with emerging technologies is an

invitation to nearby tech companies of different kinds to collaborate on keystone projects, internships, class visits, guest instruction and case studies that can be of mutual benefit and serve as gateways to employment. Likewise, the social emphasis of the program will drive outreach to community groups which have evolved to service the diverse populations of the Markham region. These directly engage different cultures and languages into artmaking practices, social practices with art and design, human-centered design and user collaboration. Markham's fast-growing cultural sector, including museums, galleries, theatres, and distinct commitment to public art, is closely linked to the project to develop a new civic centre in the Markham Centre district where the MCC will be located. We see a unique opportunity to partner with local institutions, not only for work-integrated learning but also **city-integrated learning** where institutional partners and curricular pathways are deeply integrated.

[2.] *York University Academic Plan 2020-2025*, 29 June 2020.
[3.] A • M • P • D 50+, School of the Arts, Media, Performance & Design Strategic Plan, 2020-2025

11. If applicable, provide a detailed outline of the changes to the program and the associated learning outcomes, including how the proposed requirements will support the achievement of program learning outcomes. Programs should have eight to twelve program learning outcomes. Describe how the achievement of the program learning outcomes will be assessed and how that assessment will be documented. (i.e., the mapping of the courses to the program learning outcomes; graduate outcomes).

    The Markham Working Group has recommended refined and consolidated Program Learning Outcomes based in part on the Integrative Arts program. These Program Learning Outcomes have been redeveloped in the spirit of student-centred language, and are included in Appendix D. As part of this process, we both mapped the Learning Outcomes to the 6 categories proposed by the Ontario Council of Academic Vice-Presidents and to core courses, included in the Program Curriculum Template.

12. Summarize the consultation undertaken with relevant academic units, including commentary on the impact of the proposed changes on other programs. Provide individual statements from the relevant program(s) confirming consultation and their support.

    The AMPD Markham Working Group, formed in November 2019 to develop the new program, has been comprised of faculty members from departments of Visual Arts

and Art History, Computational Arts, Music, Theatre, Cinema and Media Arts, and Dance. Faculty input during the development of the program has been integral to maintaining distinct identities and minimal overlap between Creative Technologies and programs already offered through AMPD on the Keele Campus. Within AMPD, ongoing consultation with Chairs and Departments continued into the Fall of 2019 and early Spring 2020, along with monthly reports to Dean. The planning strategy integrated considerations of the planning history, discussions and research from the early "Markham 1.0" exercises that culminated under the rubrics of Visualization, Entrepreneurship, Research, Games and Entertainment (VERGE) and then <Creative Ventures>. The former of these was marked by narrower specializations in Visualization, Games and Entertainment; the latter foregrounded "Creativity and entrepreneurship for creative cultural industries" and was, by comparison to the current plan, more singularly industrially oriented and less integrally working with other York programs at Markham. A Special Project Researcher, Dr. Jordan Geiger, came on board from late October 2019 through August 2020 in a role of curricular and spatial planning lead, with the charge to define the focus of the program and its relation to Keele campus offerings in coordination with the Working Group; and to participate in coordinating AMPD's offerings and spatial planning at Markham with other academic units. During that time, he moderated meetings of the Working Group, interviewed faculty, served as liaison to coordination meetings of the Vice Provost and with the Campus Development offices, and prepared a draft program brief that has broadly influenced this modification proposal.

Dr. Michael Darroch joined the Working Group in September 2020 when he took up the position of Associate Dean Academic in AMPD. In addition to moderating meetings of the Working Group, Dr. Darroch has held regular consultations with Alice Pitt, Senior Advisor, Markham Academic Strategic Planning, and Will Gage, Associate Vice-President, Teaching and Learning, as well as members of their teams. Consultations have also been held with the Dean of Libraries and Associate Dean, Libraries Digital Engagement and Strategy in relation to the Libraries and AMPD Markham Makerspaces as well as the Associate Dean, Program, LA&PS and members of the Department of Communication Studies in relation to the proposed program stream in Social Media & Public Relations. Two new Faculty experts working in creative technologies program development and social-engagement were hired in 2021 (Dr. Rebecca Caines and Dr. Marissa Largo), who have contributed substantially to the shape of this proposal.

Dr. Darroch also Chaired one committee developing the two "Shared Curriculum" courses for the Markham Campus: "Being a Digital Citizen" and "Mobilizing Digital

Citizenship", while colleagues from other faculties are examining how a framework for shared electives and other criteria will work specifically at the Markham Campus.

13. If applicable, describe changes to any admission requirements and on the appropriateness of the revised requirements for the achievement of the program learning outcomes.

    The admission and degree requirements will be consistent with the requirements for Integrative Arts. The BFA in Creative Technologies will meet the requirements needed for admission into any program at York. An upper-level high school arts course will be encouraged, but not required. As noted previously, there is no portfolio requirement, which we have found to be a boundary for students who do not have access to traditional artistic or musical training prior to entering university. We believe this will be a significant draw for students interested in Creative Industries but whose knowledge and experience may reside outside of traditional artistic or musical training.

14. Describe any resource implications and how they are being addressed (e.g., through a reallocation of existing resources). If new/additional resources are required, provide a statement from the relevant Dean(s)/Principal confirming resources will be in place to implement the changes.

    Creative Technologies will be a 120-credit program based in part on existing course offerings within the Integrative Arts program and resources from other programs and the Shared Curriculum at the Markham Campus.

    We are proposing to include 5 existing required courses, some of which are currently under development for the Integrative Arts program:

    - FA/PANF 1100 3.0 Introduction to Creative Methodologies I (open to non-Majors)
    - FA/PANF 1110 3.0 Introduction to Creative Methodologies II (open to non-Majors)
    - FA/MUSI 2002 3.0 Introduction to Entrepreneurship for Artists
    - FA/PANF 3999 3.0 Collaborative Project
    - FA/PANF 4999 6.0 Capstone Project (C4)

    In addition, we further envisage a series of new full-term courses to be required for the Creative Technologies program at the MCC (through in-person, blended/hybrid, and online options) including:

- FA/PANF 1XXX 3.0 Foundations of Collaboration
- FA/PANF 1XXX 3.0 Histories of Applied Digital Arts
- FA/PANF 2XXX 3.0 Community Project
- FA/PANF 2XXX 3.0 Decolonizing the Arts
- FA/PANF 2XXX 3.0 Understanding Coding
- FA/PANF 3XXX 3.0 Art as Disruption: Experimentation + Decolonization
- FA/PANF 4XXX 6.0 Individual Capstone

Several other key requirements make up the foundation of our program:

- 1 3.0 course from a sequence of courses focused on the ethical transformation of technology
- 1 6.0 EE/WIL experience opportunity
- 9 credits from 1.0 credit options during the first three years of the program (3 per year).

In conversation with other faculties and libraries, we are also planning a series of 1.0 credit courses open to all students at the MCC that would provide foundational and advanced training in specific technological and professional skills through the first three years of the program, culminating in project leadership opportunities in the year four capstone projects. Examples of 1.0 credit courses may include foundational courses in:

- fabrication techniques such as 3D printing or laser cutting
- media for digital performance
- animation and visual effects
- as well as the professional communications skills needed to navigate an era of social media.

Certain 1.0 credit courses have already been launched by the Media Arts stream of the BFA Film in the Department of Cinema and Media Arts. In the longer run, we envisage that certain combinations of these 1.0 courses could be packaged as **micro-credential** offerings to non-full-time students in order to earn a certification in a certain area and digital badge.

While the Department of Computational Arts will administer the Integrative Arts program on behalf of AMPD, governance for the Creative Technologies program is still being determined in conversations with other programs at the Markham Campus. We recommend a governance structure similar to that of the Integrative Arts program, a Governing Council of members representing all departments in AMPD as well as student representatives. AMPD has hired the two aforementioned tenure-track professorial stream faculty members in Creative Technologies (July

2021) and will conduct a search for a teaching-stream faculty member to join the program in July 2022, representing 3 AMPD departments. We recommend that this Council be formed in 2022 for a three-year term, Chaired by the Associate Dean Academic. After the term ends in 2025, a review of the administrative structure will be undertaken to assess whether a Program Coordinator is required to meet student needs and to communicate directly with Markham's new Vice-Provost.

As the program grows, it will be important to hire faculty that includes diverse perspectives in order to properly address the social justice mandate of this program, including those of Black, Indigenous, Latinx, Asian, near and Middle Eastern, and perspectives by people of colour with intersectional attention to feminist, queer, trans, and critical disability studies, among others.

15. When applicable, comment on the appropriateness of the revised mode(s) of delivery for the achievement of the program learning outcomes.

    As with other programs in Markham, Creative Technologies will enable a student to complete the entire program at the Markham Campus. Out of necessity, the program cannot rely on the same range of pathways available to students across the seven AMPD departments at Keele.

    The program will also be facilitated through a combination of online and blended learning models to enable sufficient numbers of courses to be offered to the first cohorts, and as our teaching complement grows. With the likelihood that the COVID-19 pandemic is accelerating increased interest and ease with remote teaching and learning, we now expect the Creative Technologies program to benefit from a range of future online offerings that were not yet on the horizon only a few years ago. The range of courses that we propose (both 1.0 and 3.0) reflect a prediction of steady-state enrolment. We recognize that, as other Markham programs are unveiled and offer opportunities for integration with Creative Technologies, our proposed course list may necessarily change.

16. Is the assessment of teaching and learning within the program changing? If so, comment on the appropriateness of the revised forms of assessment to the achievement of the program learning outcomes.

    The Markham Campus will offer technological development through a range of exciting new facilities including the Transmedia Labs on the ground floor and the AMPD Makerspace. For the most part, we expect assessments to remain aligned with courses in the Integrative Arts program. That said, our new Markham facilities are geared towards enabling students to work with greater autonomy than in some

of our existing programs, valuing and prioritizing different benchmarks for knowledge acquisition, and new modes of presenting work deriving from experiential education and work-integrated-learning opportunities. It should be noted that most traditional art studio courses offered at AMPD Keele will not be replicated at Markham. To this end, key courses of the Creative Technologies program extend the Integrative Arts program's emphasis on collaboration and curiosity, and while Program Learning Outcomes substantially overlap, they also diverge in several ways. Core courses for Creative Technologies, including new courses oriented to the fundamentals of collaboration and team-based creative practice, have been matched with Program Learning Outcomes in the MC Program Curriculum Template.

17. Provide a summary of how students currently enrolled in the program will be accommodated.

    N/A as Creative Technologies students will be entering the program for the first time when the MCC opens in 2023.

18. Provide the following appendices:

    A) Program Learning Outcomes (eight to twelve):

    See the attached Appendices D and E for our preliminary Curriculum Map of core requirements matched with Program Learning outcomes.

    B) Provide as an appendix a side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

    A side-by-side comparison is provided in Appendix A, and breakdown of the program by year in Appendix B, an example of the course options that students can take at Markham and across AMPD in Appendix C.

    As with Integrative Arts, Creative Technologies offers core courses in every year of the program that help to develop a cohort among the students in the program, while providing context and emphasis to the courses they are taking from across the faculty. A noted distinction between the programs are the 1.0 credit courses to be offered through the Markham Centre Campus, although we anticipate that these courses can a) be open to non-majors and all students in Markham; b) offered predominantly online and, space-permitting, open to students at Keele and Glendon campuses as well. In Creative Technologies, core courses focus on methodology, transdisciplinary study of the arts, a commitment to collaborative learning, and

experiential education and work-integrated-learning opportunities in the creative industries.

In addition, students are required to take courses from other areas offered by AMPD, either in-person in Markham or remotely through Keele, in order to gain depth and breadth in AMPD disciplines. Students are required to complete courses constituting 6 credits at the 3000-level and 12 capstone credits at the 4000-level; the two 6.0 capstone courses are focused on individual and collaborative portfolio-building experience (towards fulfilling the required 24 credits at the 3000 and 4000 levels). While prerequisites will be minimized, in order to take 4000-level courses in a given area, students may be expected to complete prerequisites required for those courses.

APPENDIX A: Side-by-Side Comparison

A side-by-side comparison of the existing and proposed program requirements as they will appear in the Undergraduate or Graduate Calendar.

Integrative Arts at Keele:	Creative Technologies at Markham:
Specialized Honours BFA Program in Integrative Arts (Studio) **A program core of 30 credits that consists of the following:** • FA/PANF 1100 3.0 Creative Methodologies I • FA/PANF 1110 3.0 Creative Methodologies II • FA/PANF 2100 3.0 Research-Creation • FA/DATT 2400 3.0 Creative Coding I • FA/MUSI 2002 3.0 Introduction to Entrepreneurship in the Arts • FA/PANF 3100 3.0 Ethics in the Arts • FA/PANF 3999 3.0 Collaborative Project • FA/PANF 4999 6.0 Capstone **33 studio course credits, and 21 studies course credits** in AMPD with a minimum of 18 credits in one area (excluding core courses) [Cinema and Media Arts, Computational Arts, Dance, Music, Theatre, Visual Art and Art History], including 18 credits at 3000-level and 18 credits at 4000-level. Of the 4000-level credits, at least 6.0 should be in one area. *Note: some courses in each cluster will be required for upper-level courses.* **12 credits electives** **6 credits FA/xxxx 1900** **18 credits general education**	**Specialized Honours BFA Program in Creative Technologies (MCC)** **A program core of 42 credits that consists of the following:** • FA/PANF 1100 3.0 Creative Methodologies I • FA/PANF 1110 3.0 Creative Methodologies II • FA/PANF 1XXX 3.0 Fundamentals of Collaboration • FA/PANF 1XXX 3.0 Histories of Applied Digital Arts • FA/PANF 2XXX 3.0 Decolonizing the Arts • FA/MUSI 2002 3.0 Introduction to Entrepreneurship in the Arts • FA/PANF 2XXX 3.0 Community Project • FA/PANF 2XXX 3.0 Understanding Coding • FA/PANF 3999 3.0 Collaborative Project • FA/PANF 3XXX 3.0 Art as Disruption: Experimentation + Decolonization FA/PANF 4XXX 6.0 Individual Capstone • FA/PANF 4999 6.0 Collaborative Capstone (C4) in addition to: **9 x 1.0 credits** in years 1-3 **3 credits: 1 Ethics course** **6 credits: 1 EE/WIL experience** **18 AMPD elective credits** (ideally but not exclusively at Markham). Students should receive a minimum of 24 credits at the 3000 or 4000-level. **6 AMPD credits - FA/XXXX 1900** **18 credits free electives** **18 credits of General Education courses, 6 of which must be chosen from Markham "Shared Curriculum" courses** To graduate with a Specialized Honours degree in AMPD, students must maintain an Overall and a Major GPA of 5.00 (C+).

APPENDIX B: Program Breakdown by Year:

YEAR 1: 15 Credits

The vision for Year 1 in the program is a commitment to:

- fostering a mindset shift among our students to think differently about arts, experimentation, and collaboration
- research-creation methodologies
- the fundamentals of collaboration across the arts and creative industries
- an overview of the foundations of technological skills through 1.0 credit courses

FA/PANF 1100 3.0 Introduction to Creative Methodologies I and FA/PANF 1110 3.0 Introduction to Creative Methodologies have been redeveloped for the Integrative Arts program to only require one course director, be taught over two terms, and be open to non-majors. Students will take two new courses, FA/PANF 3.0 1XXX Fundamentals of Collaboration and FA/PANF 1XXX 3.0 Histories of Applied Digital Arts, and are required to choose three from a list of 1.0 credit courses. Several relevant 1.0 credit courses will already be offered online through the Media Arts program of the Department of Cinema and Media Arts:

- FILM 1100A 1.0 Video & Sound Editing with Davinci Resolve
- FILM 1100B 1.0 3D with Blender
- FILM 1100C 1.0 Web Coding HTML/CSS/JS

In addition, we will be working alongside our two new Creative Technologies faculty members (starting 1 July 2021) to develop a series of 1.0 courses including:

- Gateway skills - Adobe Creative Suite
- Fabrication - Textiles
- Fabrication - 3D Printing
- Fabrication - Laser Cutting/Etching
- In the Audio Studio
- Transmedia Lab Technologies
- Media for Digital Performance

- Intro to After Effects
- Processing for Visual Scripting
- Physical Computing (Arduino)
- Max MSP

YEAR 2: 18 credits

The vision for Year 2 in the program is a commitment to:

- decolonizing artistic pedagogies (an online course reinforced through collaborative projects);
- an outward-looking and community-facing experience
- developing professional skills for the creative industries
- experience in understanding coding
- learning to communicate different kinds of tech skills
- 4-week 1.0 credit "tech-know" and professional skills courses, breaking into smaller groups
- building a vocabulary and confidence through a collaborative project

The program includes a course added to the core developed by our colleagues in the Department of Music specifically for the Markham program, FA/MUSI 2002 3.0 An Introduction to Entrepreneurship for Artists. Further, we will develop an online course, FA/PANF 2XXX 3.0 Decolonizing the Arts, that is also open to non-majors. Through a new course, FA/PANF 2XXX 2.0 Understanding Coding, student will learn the essentials of learning to read, understand, and lightly modify existing code. A new course FA/PANF 2XXX 3.0 Community Project will incorporate community-engaged research-creation by bringing a range of community and industry partners into the classroom. While students will take another set of 3 1.0 credit courses, these will break down into smaller group assignments. Two further 1.0 credit courses already offered online by the Media Arts program (Department of Cinema and Media Arts) will be available to Markham students:

- FILM 2100A 1.0 Unreal Engine Introduction
- FILM 2100B 1.0 Animation & VFX with Fusion

Additional 1.0 credit courses may include:

- Media Systems/Networking
- Website development
- Strategic Communication (including email skills and professional skills in social media (a possible collaboration with Social Media & Public Relations)
- Introduction to Project Development
- Streaming Discoverability (How to get your project online)

YEAR 3: 15 credits

The vision for Year 3 in the program is a commitment to:

- the opportunity for a EE/WIL experience (including the plan to pilot a Co-op program with community and industry partners)
- further community-facing engagement by bringing in expertise from the outside
- thinking about art as disruption through experimentation and decolonizing practices and methodologies
- continuation of advanced "tech-know", professional skills, and project management 1.0 credit courses
- applying "tech-know" 1.0 credit course skill sets to smaller prototyping projects
- leadership in team-based projects
- connecting to ySpace Markham

The third-year core course, FA/PANF 3999 3.0 Collaborative Project is an experiential-education focussed course shared with Integrative Arts in which students develop a single project together as a group, with dissemination in a public forum. The course is meant to build on the complimentary skills of the students and to help them develop project management skills. They will complete their final 1.0 credit courses.

1.0 credit courses in Year 3 may include:

- Interactive Installation and Performance
- Impact producing - how to brand your program, marketing techniques
- How to Freelance
- Introduction to Project Management
- Portfolio Building
- Basics of Accounting and Insurance
- If offered, the possibility to choose a 1.0 credit course from other programs

YEAR 4: 12 Credits

The vision for Year 4 of the program is a commitment to:

- developing the students' individual portfolio projects
- practicing project management through a collaborative capstone (C4) portfolio projects that are community- and industry-integrated

Students take FA/PANF 4999 6.0 Capstone Project, a collaborative capstone course connected to the C4 network, where students work in smaller groups. Students will also complete a new FA/PANF 4XXX 6.0 Individual Capstone to build a comprehensive set of portfolios upon graduation.

APPENDIX C: List of AMPD Elective Courses

The following is a list of example courses that students in Creative Technologies can currently take across AMPD to satisfy the degree requirements for their degree. This list will be amended and updated in consultation with participating units, and as the shared framework for electives at Markham Campus is further developed. We anticipate that this list will continually grow as the program matures and becomes part of the fabric of AMPD.

PANF courses that will be available to students in Markham:

FA/PANF 1010 3.00	Introduction to Design: Practice and Appreciation (for non-majors)
FA/PANF 1800 6.00	The Biology of Story
FA/PANF 1900 3.00	Skills for Success in the Arts
FA/PANF 2000 3.00	Academic Writing in the Arts: Joining the Conversation
FA/PANF 2102 3.00	Making Digital Movies With Mobile Media
FA/PANF 3140 3.00	Production Design for Film 1
FA/PANF 3250 3.00	Screen Acting: Practical Approaches for Crafting Screen Performance
FA/PANF 3XXX 3.00	Applied Sound (in development)
FA/PANF 4140 3.00	Production Design for Film
FA/PANF 4145 3.00	Shooting the Set: Making Innovative Films on a Sound Stage
FA/PANF 4202 3.00	"When We Were Fab" Expo 67, the Arts in Canada, and the Utopian Moment

APPENDIX D. Program Learning Outcomes

As noted, the Markham Working Group recommends the following refined and consolidated Program Learning Outcomes. These Program Learning Outcomes have been redeveloped in the spirit of student-centred language.

By the end of this program, students will:

LO1. Combine technological skills with key artistic working methodologies to generate ideas, proposals, solutions, or arguments independently and/or collaboratively within an interdisciplinary professional setting.

LO2. Utilize key software and hardware in the creation of high-quality, socially-engaged digital arts and creative industry projects.

LO3. Create, critique, and evaluate applied digital arts projects against developed aesthetic, conceptual, critical, and historical criteria and frameworks.

LO4. Make informed judgements about the ethics surrounding technological development and applications of addressing real-world problems including, but not limited to, AI, financial technologies, and the fast-moving realities of climate change.

LO5. Demonstrate the skills of ethical decision-making, leadership, and effective collaboration at all stages of the design and implementation process, especially while applying a decolonial perspective to address issues of equity and the advancement of social justice frameworks.

LO6. Develop entrepreneurial initiatives and knowledge mobilization strategies, both traditional and technological, independently, and with/for organizations and the broader public in the development of projects and proposals across creative and social justice-informed industries.

LO7. Apply work-integrated learning opportunities to collaborate with community organizations, NGOs, industry partners, and other stakeholders in the city of Markham, the wider York region, and globally.

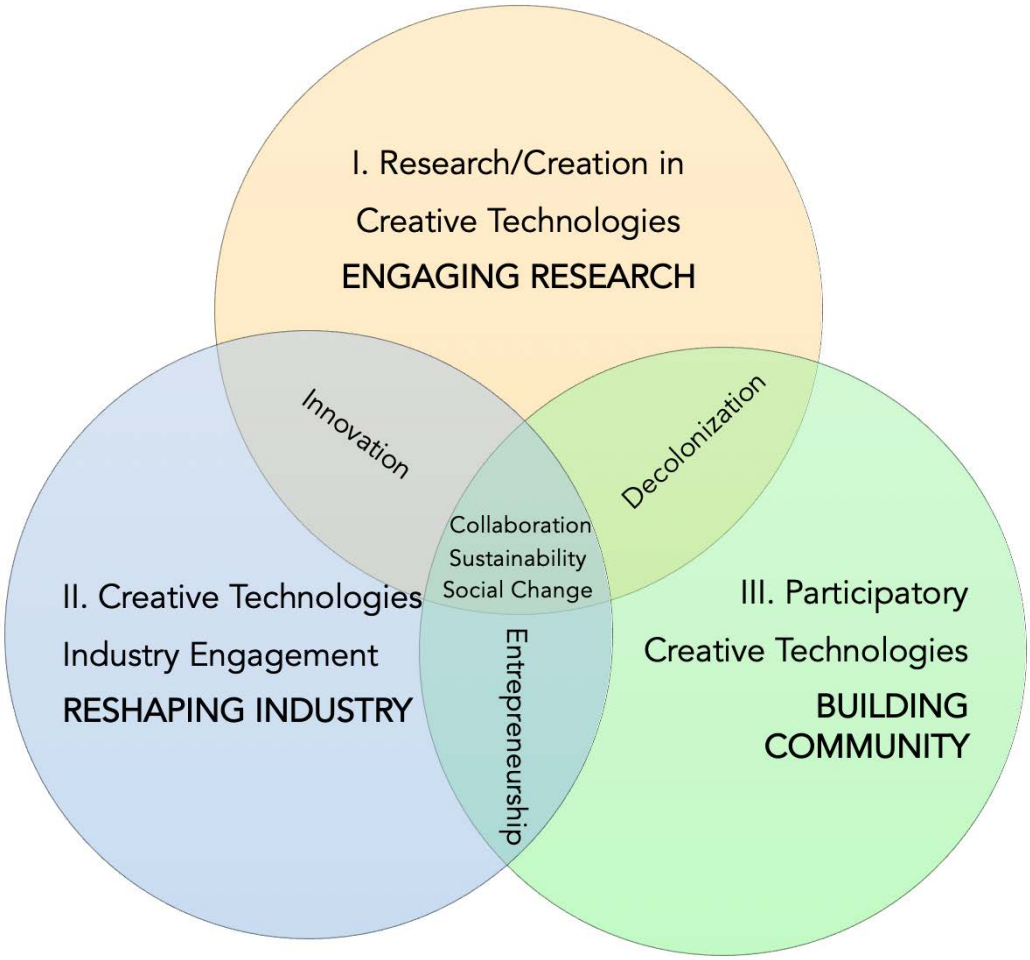
	PROGRAM LEARNING OUTCOMES	LO1	LO2	LO3	LO4	LO5	LO6	LO7
1	Depth and Breadth of Knowledge	x		x	x			
2	Knowledge of Methodologies	x		x		x		
3	Application of Knowledge	x	x	x	x	x	x	
4	Communication Skills		x			x	x	x
5	Awareness of Limits of Knowledge			x	x	x	x	
6	Autonomy and Professional Capacity	x	x	x		x	x	x

APPENDIX E: Program Brief

Students can follow one of the three flexible pathways, areas of emphasis that are not mutually exclusive. These are:

I. Research-Creation in Creative Technologies: **Engaging Research**
II. Creative Technologies Industry Engagement: **Reshaping Industry**
III. Participatory Creative Technologies: **Building Community**
IV. Students can opt to select courses from any of these pathways

The 3 pathways correspond to 3 major interest groups/sites in which Creative Technologies may emerge and/or inform.



Program values:

1) Collaboration - interdisciplinary teamwork required to solve complex problems.
2) Sustainability
3) Social Change
4) Innovation
5) Decolonization
6) Entrepreneurship

While collaboration, sustainability and social change are the core program values, innovation, decolonization, and entrepreneurship are more pronounced in certain pathways than others.

I. Research/Creation in Creative Technologies (Engaging Research)

This pathway focuses on the creative application of technology for inquiry and artistry, the use of emergent technology to enhance research-creation, and research and development in new creative technologies that spur innovation and social transformation. Guiding values include innovation in research-creation theories and methodologies and decolonization of dominant ways of knowing and making. This pathway best prepares students for post-graduate degree programs in advanced research-creation, education, analytics, and related fields of study. Careers in research-creation in creative technologies include interactive educational technologist, academic careers (teacher, researcher, professor), professional artist, policy advisor or researcher in the cultural sector or creative industries.

II. Creative Technologies Industry Engagement (Reshaping Industry)

Propelled by the values of innovation and entrepreneurship, this pathway focuses on the creative application of technology-driven digital and physical experiences to industry. Students will experiment with emerging technologies, platforms, and ideas to develop solutions (products and services) to industry needs. Careers in creative technologies in industry include creative technologist in advertising, experiential, and event marketing, data visualization specialist, VFX artist/animator, consultant in socially responsible creative industry partners, including local government, the education sector, and/or not-for-profits or building own (including areas like data visualization, sonification, web and technology solutions for festivals, live events, product demos, interactive educational content, serious games.)

III. Participatory Creative Technologies (Building Community)

Guided by the values of entrepreneurship and decolonization, this pathway focuses on the mobilization of creative technologies to engage with communities from a wide range of socio-cultural contexts for increased participation in society and positive social change**.** Through digital storytelling, digital literacies, the democratization of digital

media production and distribution, and community-led content creation, students participate in community empowerment by applying creative technologies, social practice, and participatory methodologies. Careers in participatory creative technologies include interactive exhibition designer, community artist and organizer, public event co-coordinator, and programing director in areas such as healthcare, digital humanities, citizen science, and economic development and culture.

APPENDIX F: York Region Assets and Organizations

The following is a list of governmental, arts and cultural, private sector, technology hubs, and community-based organizations in York Region. These organizations are potential partners for experiential education and/or co-operative education in the Creative Technologies program.

Aurora Cultural Centre 22 Church St, Aurora, Ontario, L4G 1G4 https://auroraculturalcentre.ca/ *Since 2010, the Centre has welcomed the community to create and participate in diverse experiences for all ages. Located in a beautifully restored 1886 schoolhouse, we proudly program four vibrant gallery exhibition spaces, a range of instructional classes for children, teens and adults, an eclectic live music series, special family events, summer arts camps, and offer stunning rental spaces for a unique experience. Partnerships – with our community, businesses, schools and more – are at the heart of our operations, and vital to our success.*
CAYR* Community Connections https://cayrcc.org/about/about-us/ CAYR Community Connections was originally founded as the AIDS Committee of York Region in 1993 and formally incorporated as a registered charitable organization in 1996.
Chippewas of Georgina Island https://www.georginaisland.com/ *Our mission is to preserve, promote and advance the culture, health, education, economic and social well-being of our community – including our language, history and spirituality. As we look towards future generations, and honor our traditional values, we will strive to provide opportunities for our First Nation, to instill pride in our membership and to promote the development of a healthy, safe and self-sufficient community.*
Flato Markham Theatre 171 Town Centre Boulevard, Markham, Ontario, L3R 8G5 https://flatomarkhamtheatre.ca/Online/default.asp *Flato Markham Theatre is one of Canada's premier theatre houses serving the York Region, the GTA and Markham residents. With over 300 live performances each year, the Theatre presents a performance calendar that showcases the cultural diversity of*

our community. Live theatre, concerts, comedy shows and family entertainment provide an ever-changing array of performing arts. Flato Markham Theatre continues to honour respected international artists and Canadian talent in performances offered throughout the annual professional entertainment season held September through May.

Georgina Arts Centre & Gallery
149 High St, Sutton, Ontario, L0E 1R0
http://gacag.com/

Located on High Street, in the heart of Sutton, the Georgina Arts Centre & Gallery is home to a rich collection of art and offers arts programming for children, youth and adults year-round. The work of Native artists and artisans is featured in the Biindigen First Nations Gallery. Also housed in the Gallery, is a gift shop which includes original creations by local artists and craftspeople.

Latcham Art Centre
2 Park Dr, Whitchurch-Stouffville, ON L4A 4K1
https://www.latchamartcentre.ca/

Latcham Art Centre hosts 5-6 curated exhibitions each year that reflect a range of artistic media and the cultural diversity of our province. Exhibitions are complemented with educational and public programs including school visits, public lectures, art workshops, classes and tours led by the curator, art educators and exhibiting artists. Additionally, the Art Centre annually hosts a juried exhibition, an exhibition of work by a local graduating high school art class, and an exhibition of work by art students from local elementary schools. The Art Centre supports artistic practices in the community by participating as a location in the annual Stouffville Studio Tour held in October, when local artists open their studios for the public to view their work.

City of Markham
101 Town Centre Boulevard, Markham, Ontario, L3R 9W3
https://www.markham.ca/wps/portal/home

More than 350,000 people call Markham home. So do hundreds of corporate head offices and more than one thousand high tech and life science companies. You'll find us in the heart of the Greater Toronto area. Founded in the 1790s, Markham is Canada's most diverse community. People who live here enjoy our rich history and heritage, award-winning community planning and services, and strong local economy.

Shared Places, Our Spaces: Markham's Public Realm Strategy *Initiated in 2011, the Public Realm Advisory Committee (PRAC) works with the City to develop strategies which enhance and animate Markham's public spaces through partnerships, community engagement and City leadership. The PRAC advocates, promotes and*

supports public realm programs and initiatives within existing communities in Markham. The PRAC reviews the annual public realm programs, encourages community involvement, establishes priorities, assists with the evaluation of submissions and recommends actions to Council for implementation of projects.

Markham Public Art *Markham's Public Art Program was first initiated in 2003 and formalized in 2012. Since 2013, five permanent artworks have been commissioned through the program, with two more currently in progress. In addition, the program has facilitated a series of community art initiatives in collaboration with the City's Public Realm section. In the fall of 2019, Markham City Council approved its Public Art Master Plan 2020-2024, and a related Implementation Plan in winter 2020. The objectives of the program are to inspire people to live, work, visit and invest in Markham; to celebrate the city's diverse cultures and heritage from multiple points of view; and to connect residents to Markham's built and natural environment.*

Markham Museum
9350 Markham Rd, Markham, ON L3P 3J3
https://www.markham.ca/wps/portal/home/arts/markham-museum

Markham Museum brings the present and past together. Learn about our city's history and the tools we use today in our changing world. The 25-acre Museum site offers exhibits, school programs, public programs, events, private event venues, and research facilities. In 2011, the Museum opened a building that is friendly to the environment. It has a large hall and a smaller one. The smaller hall has a display called "What is Markham? Discover our Evolving Community." This display shows you the changes that Markham has experienced over time. The Museum is receiving attention from around Canada for the way it connects with our community.*

Markham Public Library
https://markhampubliclibrary.ca/

Markham Public Library - where Markham's communities come together to imagine, create, learn, and grow. We are your public library providing everyone in the community with the opportunity for success. Our resources, staff, programs, and spaces enrich the lives of everyone in Markham. The library engages with the community to read, study, play, explore ideas, express their creativity and connect with each other. We help people build the life and vibrant community they desire.

MPL Makerspaces: https://markhampubliclibrary.ca/equipment-software/
Newcomer Services: https://markhampubliclibrary.ca/newcomers/#discover

Regional Municipality of York

Open Data *This is the public platform for exploring and downloading open data, discovering and building apps, and engaging to solve important local issues in York Region. You can analyze and combine Open datasets using maps, as well as develop new web and mobile applications. Let's make our great community even better, together!*

GIS Day *Past participants included government and school board officials; conservation authorities; GIS and information technology professionals; road engineers; water and wastewater engineers; planners; health service providers; and legal, finance, and human resource professionals, among others. Before the event, they submitted photos of their favorite places in the York region, which the Regional Municipality of York's GIS staff turned into story maps.*

Town of Newmarket

Art at 395 *Did you know you can view art on display at the Town of Newmarket Municipal Offices? There are 3 gallery spaces within the Town Offices for you to discover.*

Elman W. Campbell Museum *Owned by the Corporation of the Town of Newmarket and operated by the Elman W. Campbell Museum Board of Management, the museum is a non-profit, educational institution created for the purpose of collecting, preserving, researching, studying, exhibiting and interpreting artifacts related to the social, political and economic history of the Town of Newmarket and its environs from the time of the first settlers to thirty years before present, for the benefit of residents of the Town of Newmarket and visitors from outside the Town.*

Open Newmarket *In keeping with our commitment to making Newmarket even better, the Town is embracing the Open Data information movement and releasing data for free to the public.*

NewMakeIt
621 Timothy Street, Newmarket, L3Y 1R3
https://www.newmakeit.com/

This is a beautiful, spacious, multi-functional creative facility in Newmarket, Ontario. As the only industrial and digital workshops, training, and creative facility of its kind in York Region, we're helping inventors, visionaries, and innovators across York Region, in Toronto, and throughout the Greater Toronto Area, achieve their goals while changing the way people work. Our community shares tools & equipment, offers classes to the public, enjoys flexible membership and workspace, hosts speakers, special events and more.

Remington Contemporary Art Gallery (RCAG) | Downtown Markham

169 Enterprise Boulevard, Markham, ON L6G 0E7
https://downtownmarkham.ca/community/art/

The Remington Contemporary Art Gallery (RCAG) is the epicentre of The Remington Group's public art initiative in Downtown Markham. This exciting new gallery features a unique collection of work created by a distinguished and diverse group of international artists, and is integrated into all of Downtown Markham's public spaces. On the main floor of the gallery at 169 Enterprise Boulevard, visitors will experience a variety of multi-dimensional pieces of fine art intended to engage and inspire the viewer. A number of high-profile artists have been commissioned to fill the space with creations that reflect untraditional art forms and the eco-friendly values of The Remington Group.

Richmond Hill Performing Arts Centre
10268 Yonge St., Richmond Hill, ON, L4C 3B7
https://www.rhcentre.ca/

Located in the heart of the historic downtown, the Richmond Hill Centre for the Performing Arts (RHCPA) is a 4,000 square metre, 631 seat, state of the art cultural facility that offers a full season of professional entertainment celebrating the many cultures of York Region. The Centre is also home to Richmond Hill's diverse arts community, creating a major venue in the downtown core to bring Canadian and International performers to the area.

SV Robotics Academy
169 Enterprise Blvd #301, Markham, ON L6G 0E7
https://www.svrobotics.ca/

SV Online started with the idea of learning through real-world experiences. Our story begins in Toronto, Canada. Our team of instructors was mentored by Dr Vijayakumar, a University of Toronto professor. He inspired the vision of learning through doing. After his passing, we decided to carry on his vision.

*Currently in partnership with Innovation York, Y Space, and Lassonde School of Engineering

Varley Art Gallery of Markham
216 Main Street Unionville, Markham, Ontario, L3R 2H1
https://www.markham.ca/wps/portal/home/arts/varley-art-gallery

The Varley Art Gallery of Markham is a vital cultural hub for artists and diverse communities. A municipal gallery, we create critical conversations about Canadian art and society. We inspire local and national audiences to engage with art through outstanding exhibitions and rich public and educational programs relevant to the

communities we serve. We support artists from York region and seek to broaden access to the arts for diverse artists and cultural groups. We also share and celebrate the life and work of F.H. Varley, a founding member of the Group of Seven.

ventureLab
IBM Canada Limited, 3600 Steeles Ave E, Markham, ON L3R 9Z7
https://venturelab.ca/

ventureLAB is a leading technology hub that supports tech entrepreneurs and small businesses. Located in York Region, Canada's densest technology cluster, ventureLAB has supported over 2,000 entrepreneurs in a region that is home to over 4,300 technology companies and 65,000 tech jobs. ventureLAB's 50,000 square foot innovation hub is home to over 45 tech companies and innovation partners that employ over 300 people. At ventureLAB, we support tech entrepreneurs through programs focused on capital, talent, technology, and customers, to advance Canada's economy on a local, national and global scale.

York Region Arts Council
14845-6 Yonge Street, Suite 306, Aurora, ON, L4G 6H8
https://www.yorkregionartscouncil.com/

A hub for a vital and vibrant arts, culture, and tourism scene in York Region, by giving voice to the diverse artists and cultural organizations in our community through advocacy, education, programming and strategic partnerships.

YORK
UNIVERSITÉ
UNIVERSITY

SCHOOL OF THE ARTS, MEDIA, PERFORMANCE & DESIGN

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November 8, 2021

Dear colleagues,

I write to convey my enthusiastic support for a proposed major modification of the BFA Integrative Arts program to create the new Specialized BFA in Creative Technologies in the School of the Arts, Media, Performance & Design (AMPD) at the Markham Campus. This proposed program builds on and expands existing areas of strength and expertise in AMPD, while developing a distinctive approach to critical entrepreneurship with an explicit sense of creative placemaking in Markham and the North York Region.

As such, the program will provide new educational opportunities to York University students, both those situated in Markham and to those studying in existing programs at AMPD on the Keele Campus. With its emphasis on flexible learning pathways and collaborative project-based learning, this program offers a distinctive approach to education in the creative industries with an emphasis on critical entrepreneurship, technical skills, and community-focused practice.

The proposed program aligns with the stated goals of the York University Academic Plan, especially **21st-Century Learning** and the related call for . programs to address emerging issues and labour market needs that call for new pedagogical approaches and cross-disciplinary thinking." It also follows the goals of the **AMPD Strategic Plan** to develop new programs that facilitate "exploration and collaboration across AMPD programs" and the "development of new programs connecting creative technologies and community-centred practice on the Markham Centre Campus." With an emphasis on collaboration and connection as highlighted in the **AMPD 50+ Strategic Plan** and building upon the current BFA in Integrative Arts, the CT-Markham program will facilitate potential collaborations and opportunities for students working at both campuses, while providing distinctive learning outcomes and opportunities defined by its location on the Markham Campus.

This proposal emerges from extensive work and consultations over the past year by the AMPD Markham Program Working Group, which included members from all current departments in the School and conducted consultations with departments within the School and beyond. To further support the program, a review of comparator programs (both at York and other institutions) was commissioned from Higher Education Strategy Associates (HESA) with a report submitted in October 2021. This report helpfully highlights the distinctive aspects of the current program proposal, including its explicit commitment to ethical community engagement and critical entrepreneurship in technologies an explicit decolonial lens.

As a School that recently celebrated its 50th anniversary, the existing programs and areas in AMPD are well-recognized and established within their respective disciplines. AMPD programs continue to recruit students pursuing careers across the respective fields within

the arts, design, and media at the highest level. At the same time, there is broad recognition that the underlying methodologies of the creative disciplines have diverse applications in fields beyond traditional artistic practices. The CT-Markham program is designed therefore to prepare students for evolving careers at the intersection of these changing domains and to equip them with skills, experiences, and opportunity to work at these intersections. To this end, CT-Markham students develop specific skills (e.g., "tech-knows"), while also learning and building connections across these areas within structures. As creative and computational economies evolve through advances in AI, social data, and communicative labour, both technical acumen and social knowledge will be necessary to successfully navigate rapidly changing domains of art and creative practice. This program aims to prepare students for a variety of careers – both existing and still emerging – within the creative industries.

In this sense, the proposed CT-Markham program meets not only the key UAP priorities in **21st-Century Learning**, but also **Knowledge for the Future**, specifically the desire to maximize "our impact by building on the success of Innovation York to expand student, faculty, and community access to entrepreneurial programming and to increase our innovation activities." As Paul Valéry wrote, "It takes two to invent anything. The one makes up combinations, the other choses." The program takes up an explicit mandate to develop ethical entrepreneurship that centres ethical technology through a decolonial lens such that its graduates can perform in both these roles: to generate new work; and to assess these creations critically and reiteratively.

To this end, the program thus advances the University's larger aims to **Answer the Call** through contributions to the United Nations Sustainable Development Goals, in particular: SDG 8 (Decent Work and Economic Growth) and its emphasis on sustainable cultural development, creation, and related tourism; SDG 9 (Industry, Innovation, Infrastructure) and its promotion of cooperative enterprise models, among others; and SDG 11 (Sustainable Cities and Communities) with its call to safeguard and promote diverse cultural heritage. In its unique combination of critical entrepreneurship, ethical deployment of technical skills and work-integrated learning, the BFA in Creative Technologies-Markham will provide cohorts of students will prepare new cohorts of students to navigate rapidly changing fields and career opportunities to come.

I therefore strongly support this proposal and am grateful to the colleagues who have proposed these major modifications.

Sincerely,

S. Bay-Cheng

Sarah Bay-Cheng
Dean

YORK UNIVERSITY LIBRARIES

Office of the Dean

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4700 KEELE ST.
TORONTO ON
CANADA M3J 1P3
T 416 736 5601
F 416 736 5451
www.library yorku.ca

Memorandum

To: **Michael Darroch**

From: Joy Kirchner, Dean of Libraries

Date: November 4, 2021

Subject: Specialized BFA in Creative Technologies Library Support

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York University Libraries (YUL) is strongly positioned to support the curriculum and research needs of students and faculty of the specialized BFA in Creative Technologies at the Markham Campus. As noted in the Statement of Library Support, YUL provides access to an extensive array of expertise, resources and services that support the professional engagement and experiential education of students and faculty in this program. I draw your attention to the new Markham Campus Centre Library (MCCL) spaces that will provide immersive, technology enhanced media creation spaces for students to practice and experience their learning. I also highlight YUL's curriculum integration offerings, digital literacy programs, data management and data visualization offerings and other specialized programming offered through our digital scholarship centre.

We look forward to contributing to the success of students and faculty in the specialized BFA in Creative Technologies major for the Markham Campus at York University.

cc: Patti Ryan, Director, Content Development and Analysis
Jack Leong, Associate Dean of Libraries, Research and Open Scholarship
Andrea Kosavic, Associate Dean, Digital Engagement and Strategy
John Dupuis, Scholarly Publishing Librarian

Specialized BFA in Creative Technologies
Library Statement of Support

October 2021

This statement of library support for the proposed major modification of the BFA Integrative Arts program to become the new Markham Campus Specialized BFA in Creative Technologies has been prepared in accordance with the guidelines outlined in the Quality Assurance Framework as set out by the Ontario Universities Council on Quality Assurance. It describes some of the services and levels of support that York University Libraries (YUL) will be able to provide to students and faculty at the Markham Centre Campus. YUL supports all programs through immersive spaces, diverse collections, instructional services, research assistance, access to knowledge resources, expertise with research dissemination and adaptive services.

This new Specialize BFA in Creative Technologies program will focus on critical entrepreneurship, blending creative practice with theory and technical expertise and experiential learning. The program will emphasize creative methodologies, interdisciplinarity in the arts, engagement with the community and creative industries and combining arts and technical skills with an emphasis on social justice. York University Libraries embraces this approach with Markham Centre Campus Library (MCCL) programs and services that support multimodal learning through program-integrated offerings of technology, space and expertise. MCCL embeds library instruction and proficiency with immersive spaces including media capture and editing suites, a makerspace, VR capabilities, a gaming lab, and a visualization wall, all developed to support creative collaborations for teaching, learning, research and community partnerships. From a rich and diverse collection of print and electronic resources and tools, to one-on-one consultation services, instructional sessions, co-curricular offerings and group study spaces, the Libraries are well-positioned to support student success in what promises to be a rich, intensive program of study.

An overview of relevant York University Libraries services and resources for students and faculty is provided in subsequent sections.

Library Curriculum Integration for Specialized BFA in Creative Technologies

Information Literacy (IL) encompasses the skills to find, retrieve, evaluate, use and produce academic and creative work. It enables students to participate fully in a university environment and a disciplinary culture. IL integration strengthens alignment with Degree Level Expectations and the seven defined categories of broad knowledge and skills integral to Ontario's Quality Assurance Framework.

Scaffolding IL instruction is most effective when organized at the program level as it eliminates duplication, improves assignment outcomes, and enables students to apply their learning. IL instruction

spans many areas including digital methods, digital tools, data visualization, copyright, privacy and security. Based on ACRL's Framework for IL for Higher Education, and years of experience, we suggest integrating library instruction into the introduction to the discipline course PANF 1100 3.0 Creative Methodologies I, the research methods course FA/PANF 2XXX 3.0 Decolonizing the Arts and the capstone courses FA/PANF 4XXX 6.0 Individual Capstone or FA/PANF 4999 6.0 Collaborative Capstone.

Instructors are encouraged to take advantage of dedicated, in-class sessions that can be tailored to course material or assignments. A wide range of programming is available, including digital and information literacy, blended learning modules, co-curricular programming, open educational resources and student seminars. In-class sessions should be organized and booked in advance of each semester's offerings, and requests can be submitted at https://classrequests.library.yorku.ca/

Two interesting opportunities for collaboration between the new program and the Libraries present themselves for this program. First of all, the facilities at the Digital Scholarship Centre and the various immersive spaces described below would be natural fits for the planned 1.0 micro-credit course that are planned. For example, the visualization wall or gaming lab could easily be the focus of individual micro-credit courses. The second opportunity could involve partnering with the Libraries for courses on topics such as copyright or intellectual property. The opportunities here could also include integrating library expertise in existing courses or creating new courses to focus on these topics.

Digital Scholarship Centre and Specialized Programming

To discuss curriculum integration in the areas of digital scholarship, digital cultures and pedagogy, data management, open education, or scholarly publishing, YUL welcomes faculty to contact the Digital Scholarship Centre. The Digital Scholarship Centre (DSC) at York University Libraries houses knowledge in a range of digital tools and methods for web crawling and scraping, data cleaning, data curation, text processing and analytics, social graph analysis, data visualization, and linked open data applications, with an emphasis on sustainable, low-barrier approaches and open-source tools. The Digital Scholarship Centre draws expertise from a variety of departments within York University Libraries. The Digital Scholarship Infrastructure (DSI) supports students and faculty seeking assistance with digital scholarship and digital humanities projects, open repositories, digitization best practices, digital preservation, research project design, eLearning, and Open Educational Resources. The department also hosts scholar-led journals and can also consult on the development of course assignments working with unique digital collections stewarded by the Libraries. The Open Scholarship department (OS) supports student and faculty needs around open access publishing, retaining author rights, improving research visibility, research data management, and adopting open science workflows. The department also hosts a data services team that can provide guidance on how to find and evaluate aggregated data and microdata sources for research projects as well as on how to document, publish, and preserve research data objects.

Immersive Spaces at Markham Centre Campus Library

The **Media Creation Spaces at MCCL** offer equitable access to library expertise and media creation spaces including audio and video recording equipment, audio-visual media creation spaces and editing suites, portable virtual reality headsets, and workstations for hands-on digital media production work. The Digital Scholarship Centre offers resources for faculty members seeking to integrate audio- and video-based assignments and activities into their courses and enables media literacy skills development in support of coursework and capstone projects. In addition, it serves faculty needs for equipment and recording space as they are developing their own eLearning Open Educational Resource materials.

The **Makerspace at MCCL** is a site for critical making, offering a research and learning environment where students and researchers have access to 3D printers, electronic textiles, sewing machines, electronics and robotics. This large space is configured as a teaching environment and can accommodate in-class learning. Library makerspace programming fosters key digital, social, and cross-disciplinary fluencies such as critical and creative thinking, research skills, project planning and management, professional communication, the ability to work in multidisciplinary teams, and adaptability to new contexts and circumstances.

The **Visualization Wall, Gaming Lab and Virtual Reality (VR) Lab** are in a single dynamic, configurable space, with the Visualization Wall augmenting VR and gaming experiences. The Visualization Wall, with a massive viewable area of 28 x 14 feet, allows for enhanced research and teaching applications such as the visualization of large data sets, engagement with sophisticated software platforms, and detailed viewing and modelling of complex structures. The gaming capabilities of the space are leveraged to factor in backwards compatibility for legacy equipment for instructors and allow multiple users to concurrently engage with the visualization wall in a variety of configurations. This infrastructure enables faculty to use VR as a teaching tool by narrating a student's VR experiences as projected on the visualization wall to a class of students. VR applications intensify connection to place and create an extraordinary opportunity to build empathy through lived experiences. Library programming includes introductory instruction in the creation of VR environments.

Library Resources

York University Libraries have robust and multidisciplinary collections that are responsive to emerging curriculum and research needs. We have adopted an "e-preferred" approach for new content, meaning that any requests for new titles will be fulfilled with e-book purchases whenever available or affordable, and with as few access restrictions as publishers will allow. YUL also participates in consortia such as the Canadian Research Knowledge Network (CRKN) and the Ontario Council of University Libraries (OCUL) Scholars Portal, both of which provide access to a growing collection of electronic content that can be discovered through OMNI, our primary search interface.

Print materials relevant to the program can also be found via OMNI, and York community members can arrange to have materials held at any of our libraries. Aside from York's collection, our partnership with the OMNI network provides students and faculty members with access to print materials housed at any of our 14 partner institutions across Ontario.

Last updated: 21/01/2020

Interlibrary Loans (RACER) Interlibrary loan and document delivery options are available through RACER for any additional information needs that may come up. There is no limit to the number of articles that a student or faculty member may order through RACER per year, and these are delivered to the desktop, free of charge. Books can also be requested through this system free of charge. Registration and requesting is available from: http://www.library.yorku.ca/cms/resourcesharing/services-for-york-faculty-and-students/illrequestform/.

Apart from print and electronic materials, York University Libraries hosts a large collection of government documents and microfilms, a wide range of audio-visual resources through the Sound and Moving Image Library, a broad collection of maps, and a rich range of primary source material at the Clara Thomas Archives & Special Collections including manuscripts, rare books and primary source materials to support research and learning by the university's faculty, students, and a community of international scholars. Archivists will host subject-specific workshops and provide individual consultations on archival material.

Open Content

As part of its commitment to Open Access and Open Education, York University Libraries is placing increased emphasis on openly licensed and public domain materials for teaching and learning, including sources of open data. In addition, an increasingly wide range of Open Educational Resources (OER) are available through York University Libraries, and we have a guide to finding and evaluating these resources at https://researchguides.library.yorku.ca/OER.

The Libraries is also pleased to provide support for members interested in creating OER for the benefit of the Specialized BFA in Creative Technologies program. Complementing our own Pressbooks publishing platform for open textbooks, we encourage faculty members to explore and use eCampusOntario's OER tools, including their Pressbooks platform and their H5P platform for creating open, interactive course content. Learn more about eCampusOntario's commitment to open education at https://www.ecampusontario.ca/open-education-resources/.

Relevant Databases, Indexes, and Data Sources

Many of the courses in the program will focus on diverse topics of video and sound editing, visual and sound effects, 3D printing, coding, arts entrepreneurship, decolonization, collaboration, digital media technologies. To inform their work, students will require access to scholarly books and articles, audio, video and images, technical manuals, mainstream and alternative news sources, archives, and sources of computer and technology data. The breadth of the program spans many disciplines, all of which can be addressed with elements of the York University Libraries collections or with openly licensed content.

The Libraries provide access to hundreds of thousands of journals, the vast majority of which are accessible online. Articles are discoverable through the Omni library catalogue or through the Libraries' extensive set of article databases such as Art & Architecture Source, Communication Source, ACM Digital Library and Design and Applied Arts Index, among others. Students in the Specialized BFA in Creative Technologies program will also benefit from a range of more domain-specific tools and platforms including ARTStor, Grove Art Online and Naxos Music Library.

Last updated: 21/01/2020

Program-Related Research Guides

York University Libraries publishes research guides related to disciplines and topics addressed by York programs. Existing guides of interest to this program are:

Digital Media: https://researchguides.library.yorku.ca/c.php?g=679789
Computer Science: https://researchguides.library.yorku.ca/cse
Science and Technology Studies: https://researchguides.library.yorku.ca/sts
Art, Architecture and Design: https://researchguides.library.yorku.ca/artarchitecturedesign
Film Studies: https://researchguides.library.yorku.ca/film
Music: https://researchguides.library.yorku.ca/music
Digital Scholarship and Digital Humanities: https://researchguides.library.yorku.ca/dsdh

Email, Chat, and Consultation Services

In-person assistance with research, citation and other information is readily available from York University Libraries. Currently, online support is available through text messaging, email or through our online chat or drop-in zoom service. Chat and reference support services are accessible every day, with some reduced availability in the quieter Spring and Summer terms. Post-pandemic, librarians and staff will be available onsite at all branches, to provide tailored support for graduate students.

Students in this program may also take advantage of our consultation service, where individuals or groups meet with a subject specialist or data services librarian to discuss specific, assignment- or research-related questions about information sources, search strategies, data storage and preservation questions, data analysis and visualization tools, and more. These consultations are available at regular hours throughout the week, and can be booked online at https://www.library.yorku.ca/web/ask-services/book-a-consultation-with-a-librarian/

Conclusion

York University Libraries welcome the opportunity to support the curricular and research needs of students and faculty in the proposed Specialized BFA in Creative Technologies. Our external partnerships program-integrated offerings of technology, space and expertise, and collaborative, multi-institutional collection building and the many programs and services mentioned above will contribute to the success of the [insert program name here] in the years to come.

Last updated: 21/01/2020

YORK
UNIVERSITÉ
UNIVERSITY

FACULTY OF LIBERAL ARTS AND PROFESSIONAL STUDIES

Department of Communication and Media Studies

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CANADA M3J 1P3
T 416 735 4262
gana@yorku.ca

To Whom It May Concern:

I am writing this letter on behalf of the Department of Communication and Media Studies in support of the Creative Technologies Program proposed by the Faculty of Arts, Media and Performance Studies.

The Department of Communication and Media Studies is proposing a stream in Social Media and PR at the Markham campus. The Social Media and PR committee had two consultation meetings representatives of the Creative Technologies Program on November 24, 2020 and on Oct. 22, 2021. It was clear in these meetings that while Social Media & PR and Creative Technologies have their own distinct curricular goals, there are some significant and potentially fruitful areas of synergies including: social justice and decolonization; digital and computer literacy; community-building as key to experiential education; and training students through projects to work in interdisciplinary teams.

We have already identified several courses in our respective programs that would benefit from cross-listing and co-teaching particularly in digital storytelling, community-based projects, professionalization, and capstone. Overall, we expect that a significant number of Social Media and PR students will be interested in taking Creative Technologies courses to round up their professional specialization as they pursue media and communication careers in public policy and public art, activism, and creative industries.

We fully support the development of the Creative Technologies Program.

Sincerely,

Ganaele Langlois

Academic Policy, Planning and Research Committee

Report to Senate

At its meeting of 17 February 2022

For Information

a. Vice-President Research and Innovation Report

Having discussed it with APPRC, Vice-President Asif will present his annual report on research to Senate this month. The presentation slides are attached as Appendix A.

The report highlights and celebrates the recent achievements of York researchers, presents the 2019-2020 comparative performance on total external research funding and other scholarship metrics, Tri-Council funding results to 2020-2021, and details research intensification initiatives aligned with the 2018-2023 Strategic Research Plan and UAP priorities.

The presentation and discussion at APPRC surfaced areas that the Committee plans to explore further with the Vice-President, including initiatives to foster research productivity across all disciplines and enhance the research culture to bolster performance on indicators that carry longer-term implications for the University. Other observations generated by the annual report included:

- The benefit of establishing smaller internal research grants (<$75K) to support growth opportunities across disciplines and outside the large-scale research funding competitions
- The increasing need for additional research space in Faculties, with solutions on a scale smaller than providing a new building
- The growing diversity of the research grant recipients this year and that, once again, York has met the annual equity, diversity and inclusivity (EDI) targets for the in the selection of the York Research Chairs and the Canada Research Chairs.

Senators are encouraged to review the report in advance to prepare comments and questions for discussion at the Senate meeting.

b. Markham Campus

At various times over the past year APPRC has updated Senate on its discussions with the Provost of academic governance models for the Markham Campus. In January 2021 the Committee shared reflections and questions about the draft plans for the academic structures at the new campus under consideration. In the ensuing months the Provost

facilitated discussions on planned academic structures and governance models for the new campus with the Faculty Councils of the four Faculties offering academic programming in Markham. Guided by the feedback from Faculties, the Provost discussed with APPRC at its meeting in January revised recommended options to integrate Markham campus representation within the membership of Senate to support academic planning and the coordination of program and policy development at the new campus. The Committee's input will be reflected in the recommendations to be proposed by the Provost to Senate Executive in conjunction with its Senate Rules review exercise this term.

c. Academic Planning Forum 2022

The Committee is working to finalize the program for this year's planning forum being held on **Thursday, 7 April 2022 from 9:30 – 12:00pm**. Emerging from the theme of the Future of Pedagogy, is a session that will be devoted to pursuing inclusive excellence within our curriculum and teaching in view of the innovations in pedagogy that have advanced our physical and virtual capacity for learning. It will provide the collegium an opportunity to examine the role of both in-person learning and on-line learning in delivering York's mission. It offers a venue to share advantages and disadvantages that emerged through the recent virtual delivery of programming that had been designed for in-person learning, and to begin discussions about how these insights might best inform our course and program delivery in the future.

The format of the forum being imagined has two components: a panel discussion at the outset with speakers on key topics of the theme, and small break-out group discussions that rely heavily on audience participation. A series of framing questions will guide the small group discussions.

An invitation to the forum will be widely distributed to the York community which will include the detailed program for the session.

d. School of Medicine Planning

Senate was briefed by APPRC at the end of the Fall term on the planning underway to prepare a prospectus for a School of Medicine at York University for submission to the Provincial government. To remind Senate, being imagined is a distinct School of Medicine for York that reflects the University's interdisciplinary approach and commitment to health and wellness within a model of integrated health learning.

The most recent update to the committee advised that work continues to develop the high-level vision for the school and broad plans for the submission to the Province. A briefing on the initiative for Senate will be provided at the February meeting by the President.

Academic Policy, Planning and Research Committee
Report to Senate (cont'd)

e. Integrating Equity Initiatives

APPRC designates a member to serve on the Senate Executive Sub-committee on Equity. In the role of liaison, the APPRC member facilitates the coordination with the Sub-committee of issues related to research, other scholarly endeavours, and teaching. Reports from the Equity Committee are transmitted to APPRC for information and discussion. The report issued in January by the Sub-committee was discussed by APPRC at a recent meeting.

A thorough discussion of the Equity Sub-committee's planned initiatives generated wide-ranging reflections on approaches to integrating equity in areas within the Senate domain. Emphasized was the need to reflect research among the equity initiatives. Suggestions were also made on resourcing various forms of academic supports to enhance equity in processes, structures and the academic culture. The Committee's input will be taken forward to the Sub-committee by its APPRC liaison, Professor Leslie Sanders.

f. Concurrence with Recommendation to Establish a Chair

The Committee concurred with the recommendation of the Provost to establish the Pedagogical Innovation Chair in Science Education, within the Faculty of Science, effective 1 August 2021. The Chair will recognize and promote leadership in pedagogical innovation in the Faculty and drive the advancement of excellence in teaching practice and teaching-related scholarship. The new Faculty-funded position aligns well with several priorities in the University's Academic Plan including especially "21st Century Learning: Diversifying Whom, What, and How We Teach" by playing a critical role in developing and implementing new pedagogical methods for delivering a leading edge, contemporary Science education.

In accordance with the joint Senate-Board *Policy on the Establishment and Designation of Research and Teaching Chairs, Professorships and Distinguished Fellowships,* the Committee is required to inform Senate of its decision and to convey confirmation to the Academic Resources Committee of the Board of Governors, which is responsible for recommending the formal establishment or renaming of chairs to the Board.

g. Welcome

The Committee is pleased to welcome two new members: Celia Haig-Brown (Faculty of Education) and Monique Herbert (Faculty of Health). They bring their considerable university experience to the already robust membership of this senior academic planning committee, and we look forward to their contributions.

Brenda Spotton Visano
Chair of APPRC

2021 VPRI Annual Research & Innovation Update

AMIR ASIF
VICE PRESIDENT RESEARCH & INNOVATION

YORK U

Senate Presentation
(February 17, 2022)

VPRI Annual Update 2021*

A. Recognition, Accolades, and Achievements
B. University Research Output - Statistics
C. Social Innovation and Entrepreneurship
D. Research Intensification Initiatives

*All research income results correspond to the 2020 fiscal year – May 1, 2019 to April 30, 2020

Research Vision

Committed to excellence in research and scholarship in all its forms.

Seek national research leadership and international recognition by building on areas of existing strength, fostering development of new opportunities, and expanding our influence.

Over the next 5 years, we will work towards increasing our research income, outputs and rankings and will seek to be one of the top ranked universities in the comprehensive grouping.

Work to broadening and deepening our external partnerships and continue to grow as an innovation hub that combines research translation and entrepreneurship with a focus on building community partnerships.

These goals will be reflected in the strengthened influence of our research, scholarship and creative work, and through the increased attraction of high-quality undergraduate and graduate students, postdoctoral fellows, and faculty members.

2018-2023 Strategic Research Plan

Royal Society of Canada

- 5 York University professors recognized by the Royal Society (Canada's National Academy) among the senior collegium of distinguished scholars, artists and scientists in the country, in the arts, the humanities and the natural and social sciences.

Philip Girard,
Osgoode Hall Law School
"Legal History of Canada"

Jennifer Hyndman,
EUC, LA&PS
"Forced Migration, Feminist Geopolitics"

Michele Johnson,
History, LA&PS
"Black History"

Christina Petrowska Quilico,
Department of Music, AMPD
"Pianist, championing Canadian music"

Jane Heffernan,
Math & Stats, Science
"Infectious Disease Modelling"

Canada Research Chairs

4 successful Canada Research Chair (CRC) appointments (New and renewals)

Alan Corbiere

Tier 2 in Indigenous History of North America

Christina Sharpe

Tier 1 in Black Studies in the Humanities

Christopher Kyriakides

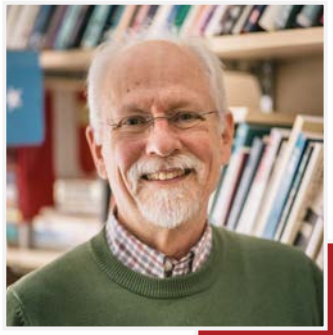
Tier 2 in Citizenship, Social Justice & Ethno-Racialization

Sean Tulin

Tier 1 in Particle Physics and Cosmology

Minister’s Awards of Excellence 2021

This year 2 exceptional York University faculty members were recognized as recipients of the Minister of Colleges and Universities’ Award of Excellence 2021. This award spotlights the incredible work being done at Ontario’s postsecondary intuitions



- Don Dippo, Faculty of Education
- Category: Equality of Opportunity
- Received the award for his work in opening postsecondary education for marginalized and underrepresented groups.

- Dawn Bazely, Biology, Faculty of Science
- Category: Future Proofing
- Received the award for adapting programming that supports new ways of learning

Recognizing Research Success - Examples

Order of Canada,
Janet Walker, Osgoode
"Commercial Arbitration & Conflict of Laws"

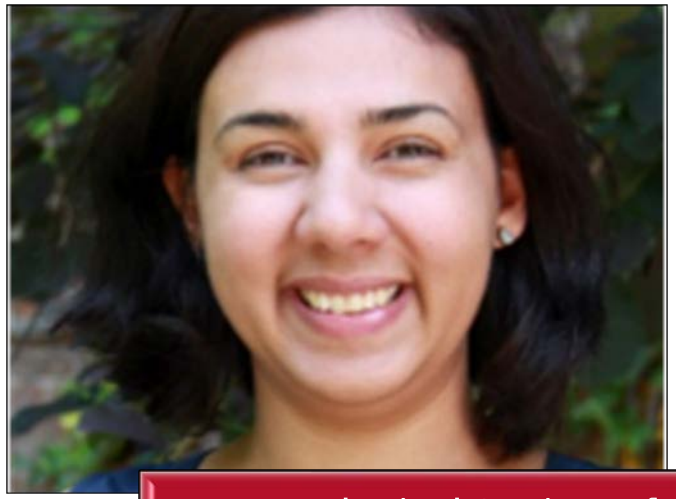
Guggenheim Fellowship,
Joan Judge, LA&PS
"East Asian Studies"

CS-Can/Infor-Can Outstanding Career CS Early Research Prize, Zhen Ming (Jack) Jiang, Lassonde
"Software Engineering"

Recognizing Research Success - Examples

Chemical Institute of Canada Environment Division Early Career Research Award,
Cora Young, Science

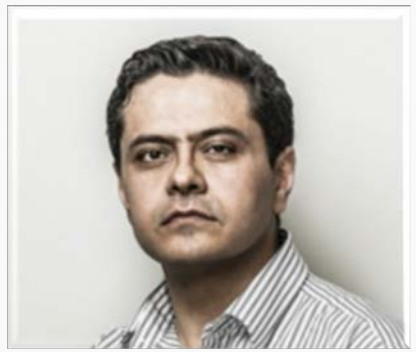
Canadian Society for Mechanical Engineering, Robert W. Angus Medal,
George Zhu, Lassonde



Entomological Society of Canada, C. Gordon Hewit Award,
Sheila Colla, EUC

President’s Research Awards 2021

Committed to the University’s mission and vision to advance academic and research excellence for the benefit of all. Recipients help to establish York among the country’s leading research-intensive universities through their visionary research, leadership and mentorship.



Pouya Rezai
Mechanical Eng, Lassonde
"Fluid Mechanics, Materials, Electronics & Microbiology”

Rebecca Bassett-Gunter
Kinesiology & Health Science, Health
"Children with Disabilities"

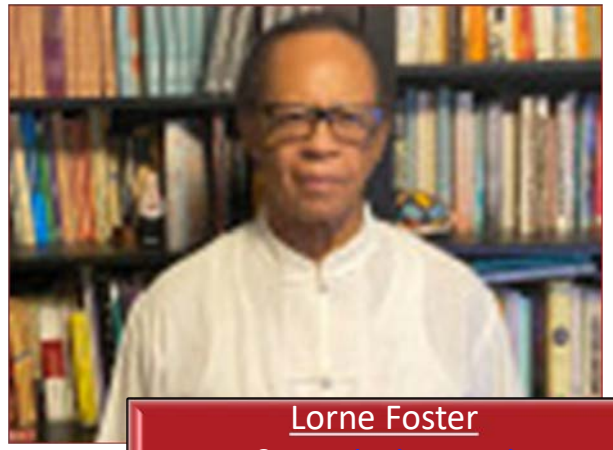
Carl E. James
Faculty of Education
“Racial Equity & Inclusivity, Community Development”

Jennifer Hyndman
EUC, LA&PS
“Forced Migration, Feminist Geopolitics”

York Research Chairs 2021 – Tier 1

Nantel Bergeron
Faculty of Science,
Applied Algebras

Doug Crawford
Faculty of Health,
Visuomotor Neuroscience



Lorne Foster
LA&PS, Black Canadian Studies & Human Rights

Kerry Kawakami
Faculty of Health,
Equity and Diversity

Chun Peng
Faculty of Science,
Women's Reproductive Health

Jennifer Steeves
Faculty of Health,
Non-Invasive Visual Brain Stimulation

York Research Chairs 2021 – Tier 2

Lyndsay Hayhurst, Health,
Sport, Gender and Development and Digital Participatory Research

Sean Hillier, Health,
Indigenous Health Policy and One Health

Ozzy Mermut, Science,
Vision Biophotonics

Carmela Murdocca, LA&PS,
Reparative and Racial JusticeResearch

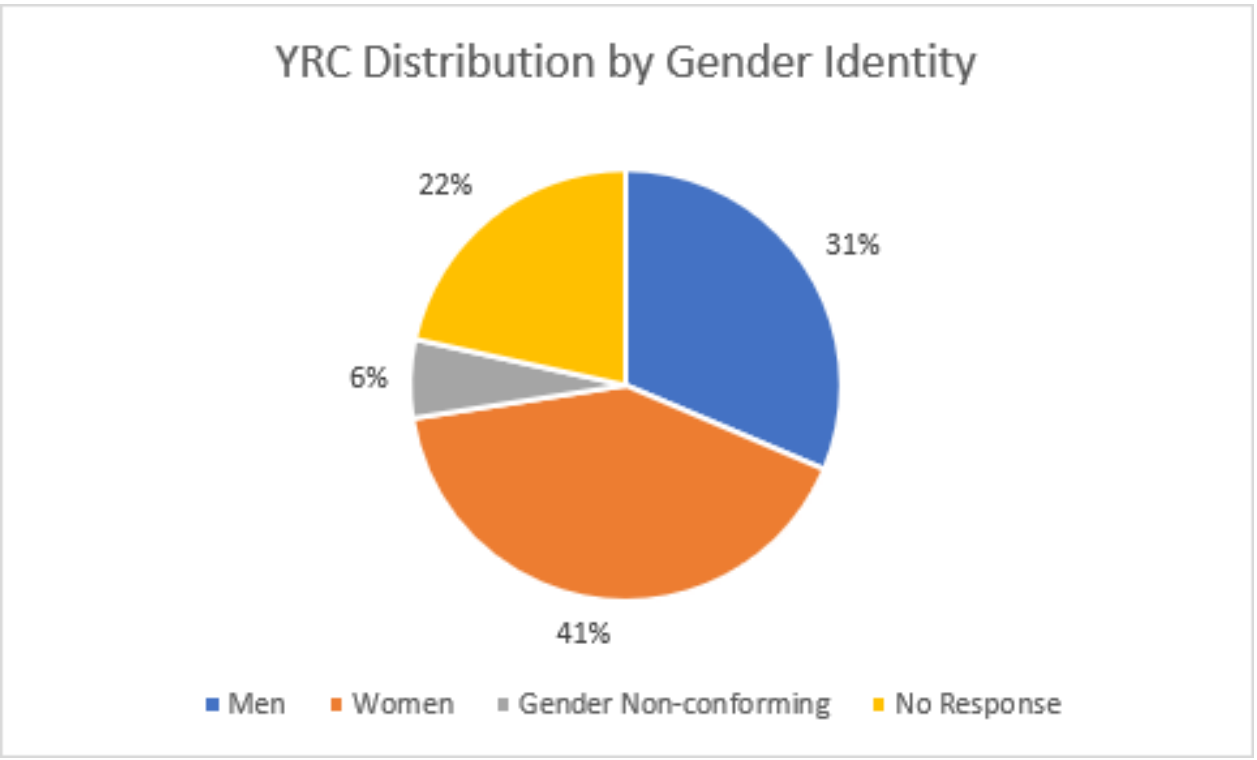
Lisa Myers, EUC,
Indigenous Art and Curatorial Practice

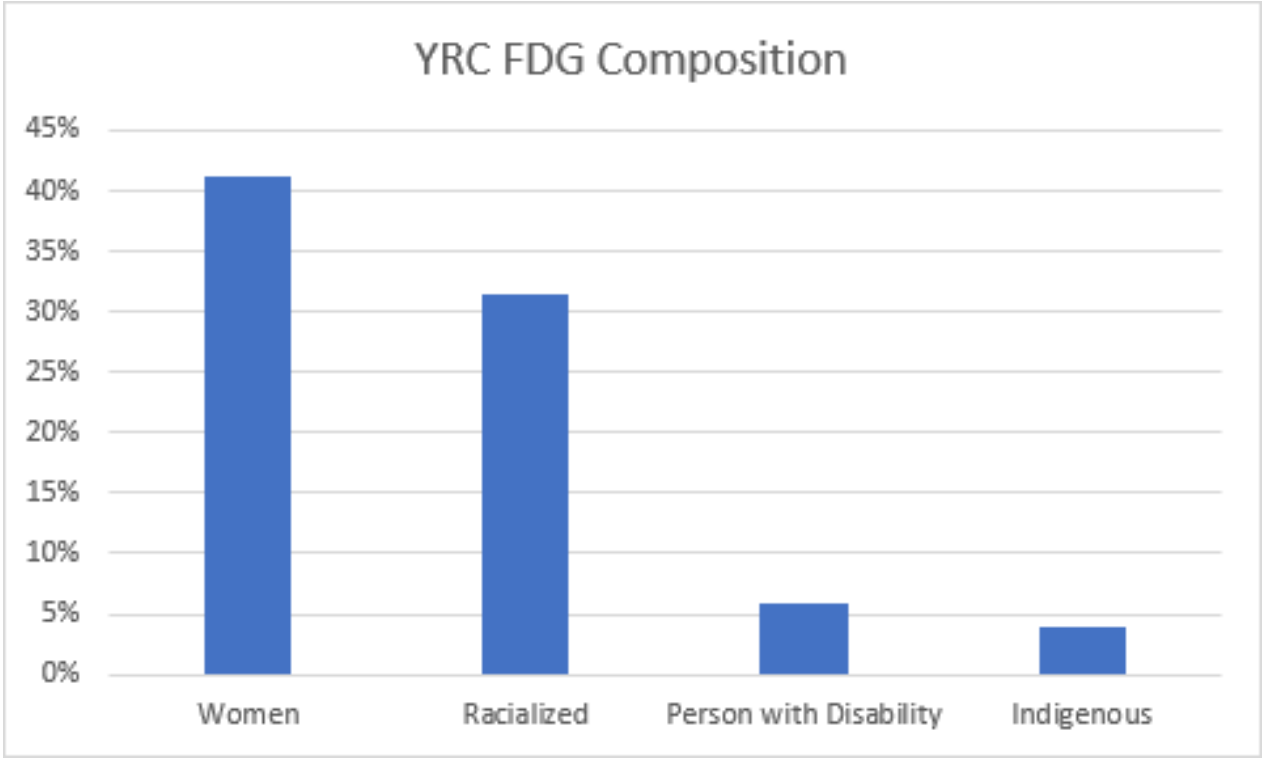
Shayna Rosenbaum, Health,
Cognitive Neuroscience of Memory

Ping Wang, Lassonde,
AI Empowered Next Gen Communication Networks

Amro Zayed , Science,
Genomics

Research Chairs: CRCs and YRCs
Equity Statistics





CRC Equity Statistics: Submitted directly by the Chair holders to the CRC Secretariat. However, at last check in (June 2021), we were "fully compliant".

Black and Indigenous Scholars: Inaugural Provost PDFs

Godwin Dzah (Osgoode Hall Law School)

Dzah comes to York having recently completed a doctorate in law at the University of British Columbia. His research proposes a fundamental re-evaluation of how international environmental law deploys concepts of crisis in ways that limit the potential for more sustained and complete forms of transformation.

Don Davis (Faculty of Science)

Davis is currently a postdoctoral researcher at St. Boniface Hospital in Winnipeg. His research investigates a novel approach to the causes of Alzheimer's disease, arguing that processes of forgetting are naturally amplified in major neurodegenerative diseases.

De-Lawrence Lamptey (Faculty of Health)

Lamptey is currently a postdoctoral Fellow at Mount Saint Vincent University in Nova Scotia. His research introduces an intersectional approach to the study of the material, social, and financial barriers Black children and their families are faced with in Canada.

Ruth Murambadoro (Faculty of Liberal Arts & Professional Studies)

Murambadoro is currently a lecturer at the Wits Schools of Governance at the University of Witswatersrand in South Africa. Her research explores how women who have experienced state-sanctioned violence in Zimbabwe deploy narratives to advance the goal of gender justice.

This annual two-year award, valued at $70,000 per year, seeks to address underrepresentation in many disciplines and fields by providing Black and Indigenous scholars with the ability to dedicate their time to pursuing new research.

Sample Expressions of York's Scholarly & Creative Leadership

- *Professor Katherine Knight*, Visual Art & Art History, AMPD, recipient of the 2021 Hot Docs Festival Rogers Audience Award

- *Associate Professor Patrick Alcedo:* earned the Best Short Documentary award at the Cannes Indies Cinema Awards for his film, titled *Call Me Dax*

- *Canadian Screen Awards*: eight nominations across various disciplines for York U alums and faculty members including Prof. Michael Greyeyes, who won Best Performance by an Actor in a Leading Role for his role in "Blood Quantum"

Professor Christina Petrowska Quilico: Album "Vintage America" is ranked the best classical albums of 2021 by CBC.

Professor Laakkuluk Williamson Bathory has earned the 2021 Sobey Art Award, one of the world's most valuable prizes for Canadian emerging visual artists.

Sample Publications: Glendon College

<u>Academic books and collections:</u>

Jacinthe Michaud

Frontiers of Feminism: Movements and Influences in Québec and Italy, 1960-80
UBC Press, April 2021

Emily Laxer

Recipient of the Canadian Sociological Association's John Porter Award in recognition of her book *Unveiling the Nation: The Politics of Secularism in France and Quebec* for its outstanding scholarly contribution to the advancement of sociological knowledge in Canada

Shirin Shahrokni

releases her latest publication *Higher Education and Social Mobility in France,* and was showcased at the 2021 Glendon Research Festival

Marie-Hélène Larochelle

Je Suis Le Courant La Vase (French Edition)
Leméac Éditeur, January 2021

Catalyzing Interdisciplinary Research Clusters (CIRC) program

Supporting formation and growth of interdisciplinary research excellence clusters in areas of strategic importance. 7 projects awarded $150,000 per year for three years

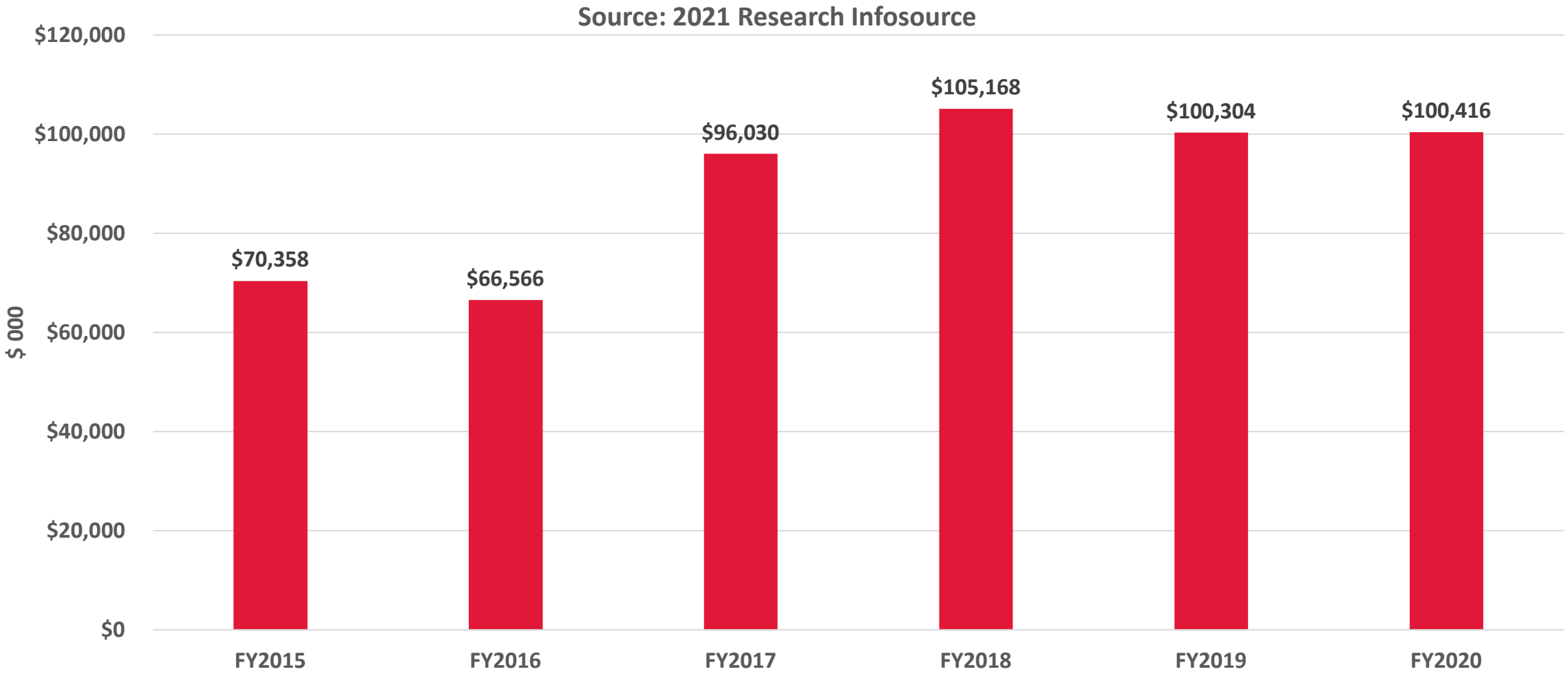
Catalyzing Interdisciplinary Research Clusters (CIRC) program

Supporting formation and growth of interdisciplinary research excellence clusters in areas of strategic importance. 6 projects have received a total of $75,000 for one year as bridge funding.

- **Sylvia Bawa** and **Mohamed Sesay**, LA&PS, with **Oghenowede Eyawok**, Health,
  Overcoming Epidemics: Transnational Black Communities' Response, Recovery and Resilience
- **Satinder Brar** and **Pouya Reza**, Lassonde,
  York-Water Urban Sustainable Ecosystem Interdisciplinary Research Cluster
- **Annie Bunting**, LA&PS,
  Youth, Gender Violence, Health and Gender Justice
- **Caitlin Fisher**, AMPD, and **Steven Hoffman**, Health and Osgoode,
  Catalyzing Collective Action at the Intersection of Global Health and the Arts
- **Luann Good Gingrich**, LA&PS, and **Heidi Matthews,** Osgoode, *From Colonial Genocide to Just Relationships: Building Interdisciplinary Research Excellence for Indigenous Futurities*
- **Jonathan Weiss**, Health,
  New Pathways for Youth Thriving in Intersecting Contexts of Marginalization

University Research Output: Statistics

York's Sponsored Research Income



Ranked #21 in Canada from 2014 onwards (Research Infosource)

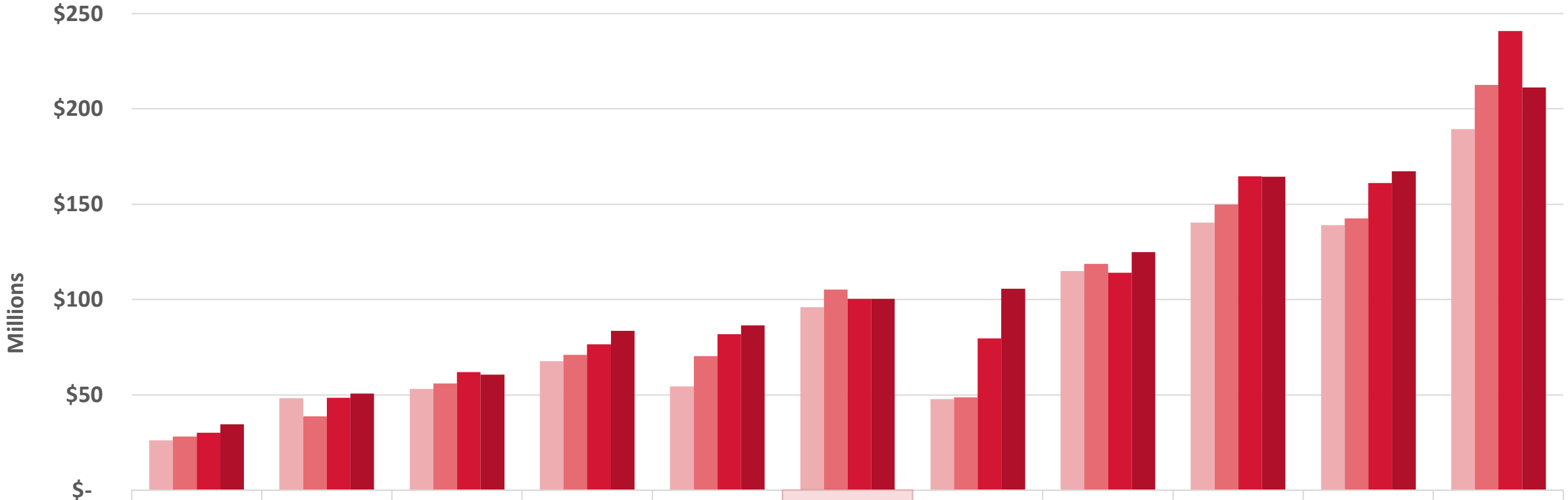
Sponsored research income: includes all funds to support research received in the form of a grant, contribution or contract from all sources external to the institution

National Rankings 2019-20 RE$EARCH Infosource

Rank		University	Sponsored Research Income		Intensity
2020	2019		FY 2020 $000	FY2019 $000	$ per Faculty $000
15	17	University of Manitoba	$193,138	$160,838	$159.2
16	16	Simon Fraser	$167,256	$160,988	$188.6
17	19	Dalhousie University	$166,368	$151,334	$150.2
18	15	University of Guelph	$164,356	$164,591	$196.6
19	18	Memorial University	$162,922	$160,636	$173.9
20	20	Victoria	$124,972	$114,083	$176.8
21	23	Ryerson	$105,605	$79,574	$123.2
22	21	York	$100,416	$100,304	$72.7
23	22	Carleton University	$86,468	$81,760	$102.5
24	24	UQAM	$83,567	$76,485	$74.7
25	25	INRS	$66,280	$71,889	$419.5
26	26	Concordia	$60,536	$61,899	$70.3
27	27	New Brunswick	$50,609	$48,474	$111.7
28	28	Laurentian	$37,794	$39,400	$96.2

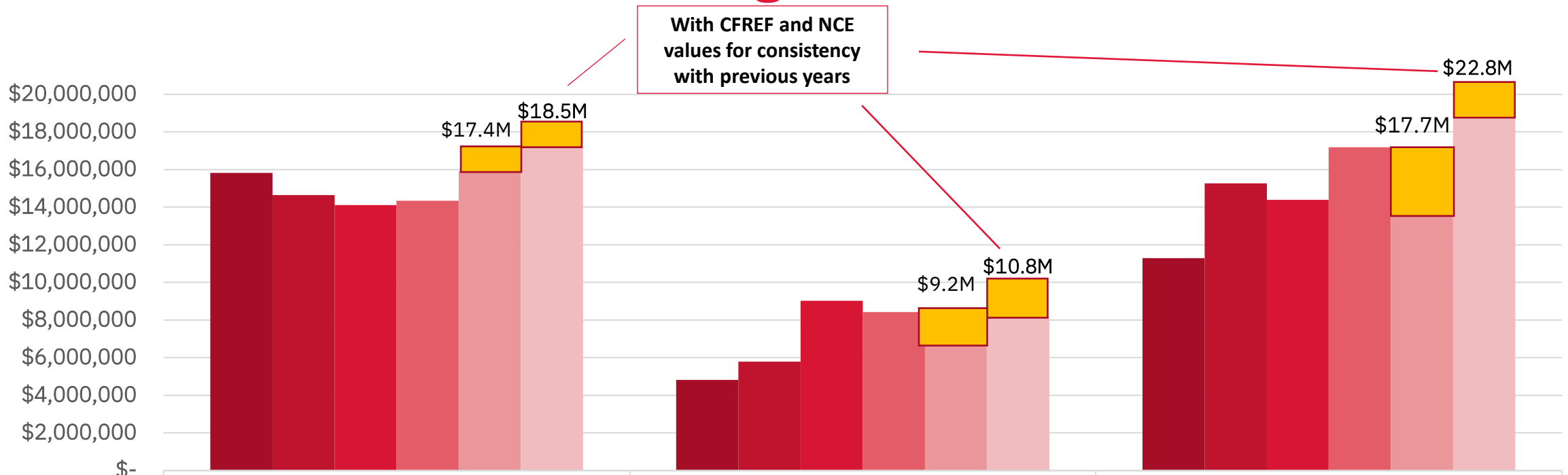
*Sponsored research income: includes all funds to support research received in the form of a grant, contribution or contract from all sources external to the institution.

Comprehensive Category Annual Research Income FY2017-2020



	Windsor	New Brunswick	Concordia	UQAM	Carleton	York University	Ryerson	Victoria	Guelph	Simon Fraser	Waterloo
FY2017	$26,198,0	$48,206,0	$53,099,0	$67,790,0	$54,369,0	$96,030,0	$47,832,0	$114,922,	$140,294,	$138,964,	$189,333,
FY2018	$28,207,0	$38,694,0	$55,999,0	$70,947,0	$70,298,0	$105,168,	$48,664,0	$118,599,	$149,829,	$142,598,	$212,649,
FY2019	$30,067,0	$48,474,0	$61,899,0	$76,485,0	$81,760,0	$100,304,	$79,574,0	$114,083,	$164,591,	$160,988,	$240,726,
FY2020	$34,469,0	$50,609,0	$60,536,0	$83,567,0	$86,468,0	$100,416,	$105,605,	$124,972,	$164,356,	$167,256,	$211,213,

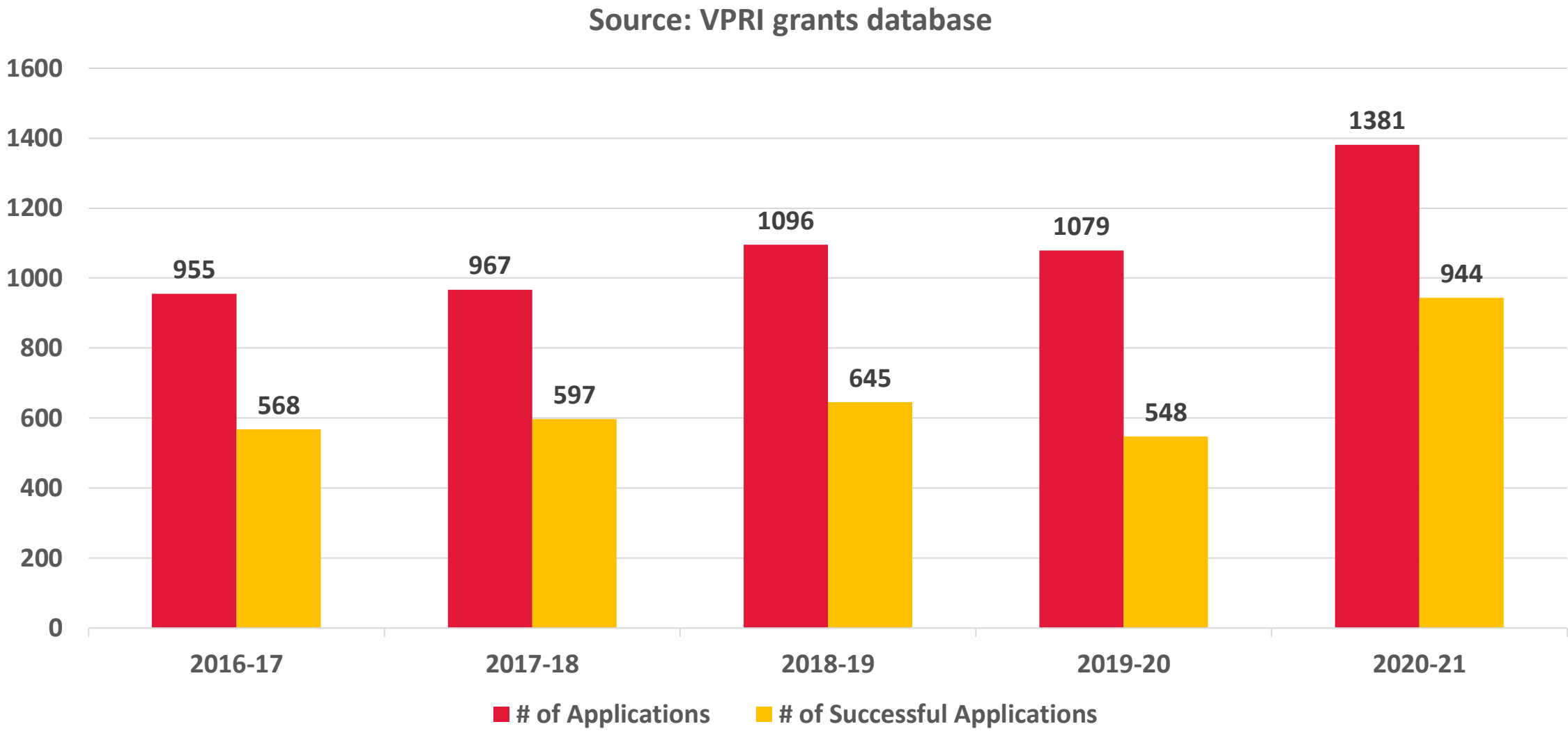
York Tri-Council Research Funding



	SSHRC	CIHR	NSERC
2015-16	$15,821,888	$4,820,227	$11,280,424
2016-17	$14,637,534	$5,793,773	$15,263,109
2017-18	$14,105,055	$9,025,416	$14,391,370
2018-19	$14,337,746	$8,418,110	$17,193,110
2019-20	$15,902,690	$6,652,595	$13,660,477
2020-21	$17,183,901	$8,154,248	$18,705,480

Total values for the three agencies under sponsored research are the amount which Research Accounting provides for fund 500 revenue plus the SSHRC and NSERC scholarships in fund 600

Number of Research Applications



Research Performance
Building Capacity for Research Success

SSHRC CRSH

- 26 Insight Development grants = $1.5M
- Partnership grant = 4 submitted in stage 2 pending decision Spring 2022
- 100% funding – 4/4 Connection Grants awarded

NSERC CRSNG

- Discovery grants results expected spring 2022
- Submitted 1 Collaborative Research & Training Experience Program (CREATE) = $1.65M – decision pending

INNOVATION.CA
CANADA FOUNDATION FOR INNOVATION | FONDATION CANADIENNE POUR L'INNOVATION

- 4 awards in the John R. Evans Leaders Fund (JELF) totaling $678k
- Ontario Research Fund SIF (provincial match to the JELF) – 9 awards totaling $1.5M
- Ontario Research Fund LIF (provincial match to Innovation Fund) -2 awards totaling $5.45M

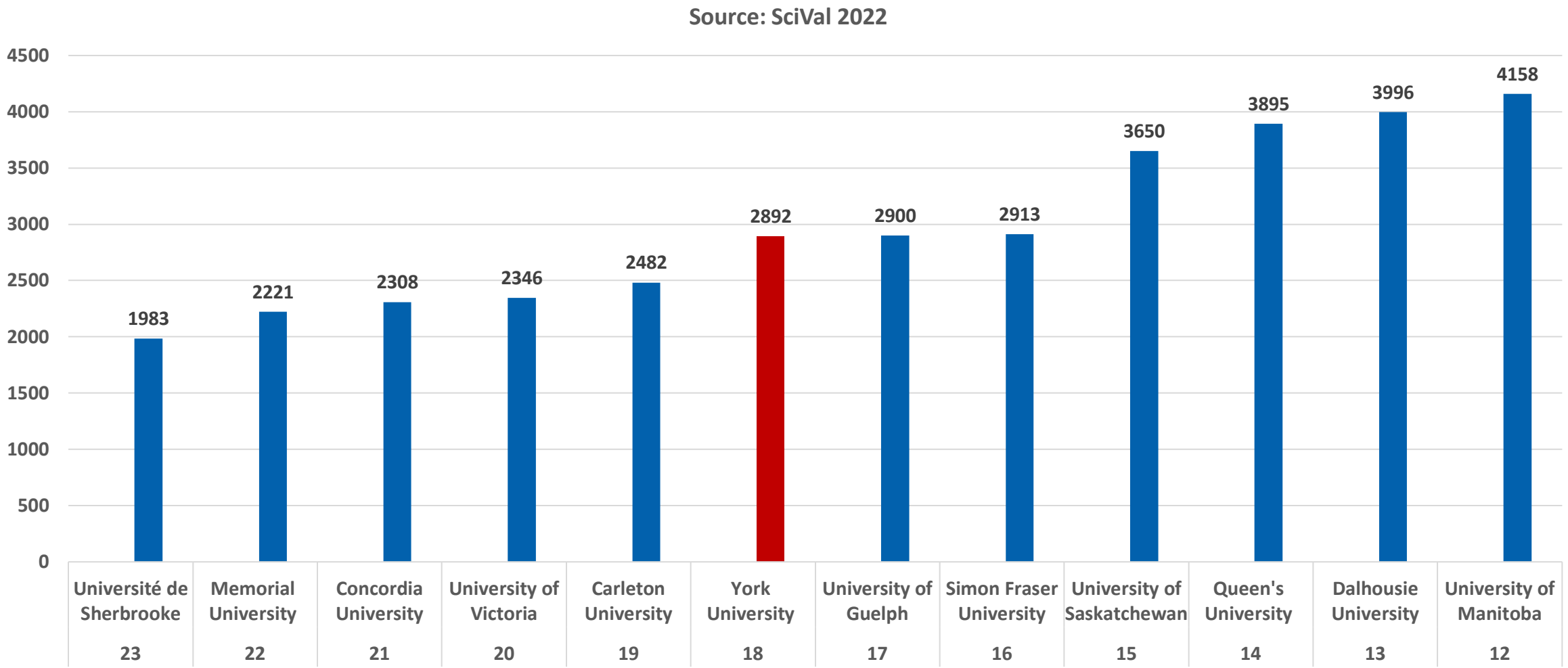
CIHR IRSC Canadian Institutes of Health Research | Instituts de recherche en santé du Canada

- 2 CIHR Project Grants totalling $2.54M

New Frontiers in Research Fund
Fonds Nouvelles Frontières en recherche

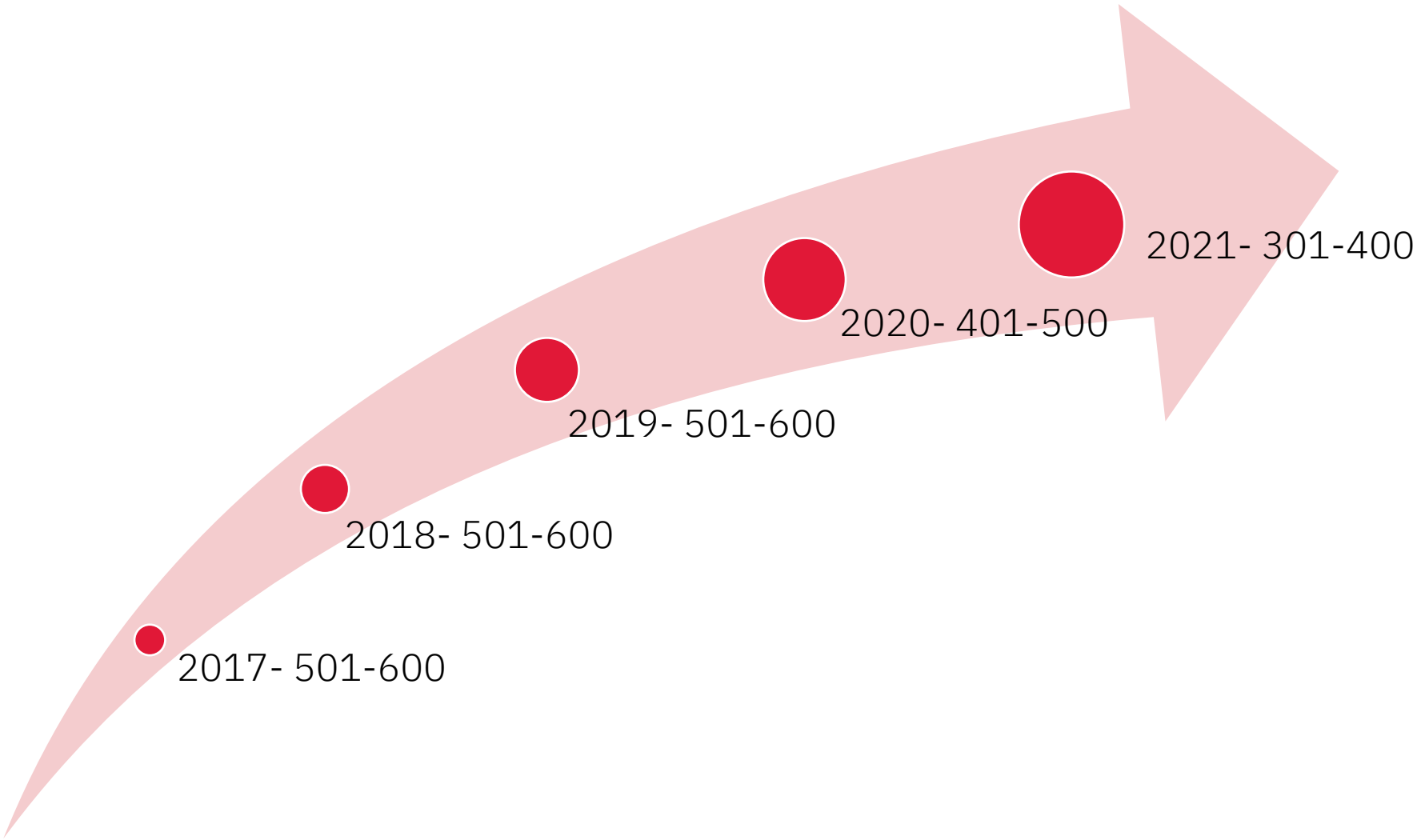
- Submitted 5 New Frontiers in Research Fund Transformation LOIs- seeking $24M each
- Submitted 16 New Frontiers in Research Fund Exploration – results expected March 2022

Research Productivity – Number of Publications 2021



Ranking out of 50 universities *SciVal publications include articles, conference papers, reviews, books and book chapters

York U International Rankings - Shanghai Ranking



Raising awareness of York University's global leadership in Research & Innovation

175% web traffic increase on yorku.ca/research

Page views on the website increased from 24K in 2020 to 65K views in 2021.

@YUResearch reached 900K people in 2021

Twitter subscribers grew by 10% in the past year for a total of 5,076 followers

More than 8K page views of York University research content

(Includes Brainstorm stories, videos news stories, announcements)

Observations

- ✓ FY 2019-20: Maintained our research income above $100M (FY 2019-20)
  (Infosource results lag by 2 fiscal years)
- ✓ FY 2020-21: Highest number of grant applications (both proposed and approved)
- ✓ FY 2020-21: Highest amount of tri-council funds ever secured in 2020-21
- ✗ FY 2019-20: Dropped 1 place to Ryerson in Research Infosource research funding ranking
- ✗ Lowest per capita research grants among comprehensive universities:
  - Top 10% of faculty account for more than 50% of applications and more than 50% of grants
  - Early/Mid career faculty (Assistant/Associate Professors) hold a relatively small share of grants
- ✗ FY 2019-20: Decrease in research $s from corporate partners and donors in last 3 years
  - Negative impact on tri-agencies partnership research grants, which have higher success rates

Social Innovation & Entrepreneurship

Innovation York Activity – 2020/21

Start-ups supported ↑ by 8.5% over last year and an increase of 47% in funding received by start-ups

Entrepreneurship

179 startup ventures supported with $16.8M investment / funding received by startups

The number of grants supported is ↑ and the value of grants supported has increased by 79% over last year

Partnership Engagement

109 new companies engaged with 128 industry-partnered grants supported, valued at $2.6M

Collaborative projects brokered ↑ with the value of grants supported has increased over $20M over last year

Knowledge Mobilization

29 collaborative projects brokered with a value of $24M in applications supported

Invention disclosures is ↓ slightly by 10.7%, but grant applications supported is ↑ 11% over last year

Commercialization

25 invention disclosures, 10 grant applications supported with $398k in grant applications

Total Agreements are ↑ by 47% over last year

Agreements

590 total agreements, with a value of $27M

YSpace Impact Since 2018

YSpace opened its doors in January 2018, and in less than a year, YSpace has experienced significant growth in all activity areas and, as a result, has more than doubled the size of its incubator.

Ventures Supported

Revenue Generated By Ventures

Funding Raised By Ventures

Jobs Created By Ventures

Work Integrated Opportunities

YSpace Digital

YSpace Digital is an online community that will offer a variety of virtual support and programming for students, faculty and ventures.

YSpace ELLA

ELLA is Ontario's first accelerator focused on supporting women-led product and service-based businesses.

YSpace Markham

YSpace Markham a physical incubator located in York Region and it operates Ontario's first Food & Beverage Accelerator program.

YSpace Vaughan and YSpace Georgina are future expansions under development

ELLA EXPRESS

ELLA Express is a one-week bootcamp for validation-stage women-led service- and product-based businesses. Through this bootcamp, founders can expect to leave with practical steps and tools they need to achieve product/market fit.

PROGRAM HIGHLIGHTS

- Hands-on Workshops
- Expert Feedback
- Founder Circle
- Solid Foundation for Growth

ELLA ASCEND

ELLA Ascend is a 5-month accelerator program focused on providing women entrepreneurs with access to a community of other women founders, top experts, and mentors to help them gain clarity on their business strategy and direction for growth.

PROGRAM HIGHLIGHTS

- Mentorship
- Founder Circles
- Hands-on Workshops
- Business Strategy
- Enhanced Product or Service Delivery

ELLA ALTITUDE

ELLA Altitude is a 4-month accelerator program that provides women-led product or service-based businesses with individualized help from mentors and experts to scale their businesses rapidly.

PROGRAM HIGHLIGHTS

- Mentorship
- Fractional Executives
- Financial Literacy Training
- Masterminds
- Growth Plan

ELLA's Impact

Women Supported

Revenue Generated By Ventures

Funding Raised By Ventures

Jobs Created By Ventures

More than one Underrepresented Group

Success Story: YOUTHREX Research & Evaluation eXchange

The Youth Research and Evaluation eXchange (YouthREX) is a province-wide initiative based at York University that promote the integration of research evidence and evaluation in the development and delivery of Ontario's youth programs.

YouthREX regional hubs engage local grassroots youth serving organizations, academic partners, youth and policy stakeholders in capacity building, knowledge mobilization, research and evaluation opportunities.

YouthRex has 5 regional hubs across Ontario that implement and deliver YouthRex's Youth programs

YORK U

Success Story:PREVNet

York University's co-led program, PREVNet, is a national research and knowledge mobilization hub that brings together researchers and national organizations to build research capacity, assess youth relationship problems, including bullying and dating violence, and promote evidence-based programs and effective policies across Canada. This program has trained adults working in youth and child serving organizations to create healthy relationships and reduce victimization

PREVNet supported the development of the Healthy Relationships Training Module (HRTM). This program trained adults working in youth and child serving organizations to create healthy relationships and reduce victimization.

PREVNet's training program has been scaled across Canada and is calculated to yield 18:1 social return on investment. This includes +3,500 adults trained and impacting +300,000 children and youth.

Partner Organizations include Big Brother Big Sister Canada, Canadian Red Cross and Scouts Canada.

YORK U

Success Story: Artha Learning Inc.

Artha Learning Inc. is a full-service, award-winning digital learning design firm specializing in end-to-end instructional design and rapid as well as custom development of learner-centric courses. We partner with our clients to design and develop training covering all aspects of eLearning such as instructional design, technical build, and learner experience & engagement.

> “The program creates an environment that I can be comfortable being ambitious in. I feel supported, celebrated and validated.”
>
> ***- Garima Gupta, Founder/Director of Artha Learning Inc***

Artha Learning Inc has grown 36% YOY and has won over 5 prestigious industry awards for excellence in learning. Artha was also one of 5 companies picked by the Trade Commissioner of Canada in South Los Angeles to represent Canada in the 2020 StartED accelerator for Edtech startups.

YORK U


Future Plans

Transformative Opportunities – VPRI Top Ten List

Contributing to Priority 2: Knowledge for the Future of the 2021 – 2025 University Academic Plan

Markham

AI & Society
Dig. Cultures
Fintech

Vaughan

YSpace
Informatics
Innovation

DEM

ORU
UN CIFAL
ADERSIM

Catalyzing Research Clusters

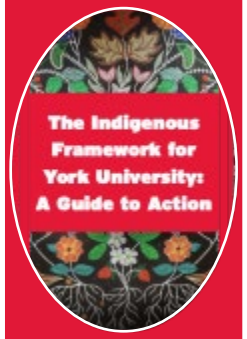
Centres of Excellence

Increasing Research Space

Larger Scale Research Grants

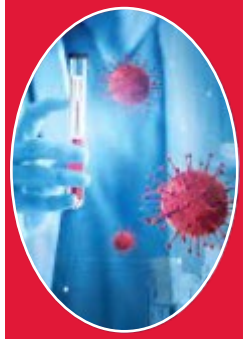
Artificial Intelligence & Society

UN SDGs



EDI in Research

Leaders in BIPOC Scholarship



Ramping Up Research

Post COVID Intensification

Innovation & Entre-preneurship

YSpace
Digital
& Georgina

Research Service Excellence

Research Commons

Establish York University as the Integrated Network of Excellence for Research and Creativity

Recent Research Intensification Initiatives (1) – Internal Grants

1. Catalyzing Interdisciplinary Research Clusters (CIRC):

To scale the development of research teams and clusters to position the University as a key node in national and international networks in strategic areas of interest.

- 7 proposals awarded $150k/year for 3 years
- 6 proposals awarded $75k for one year

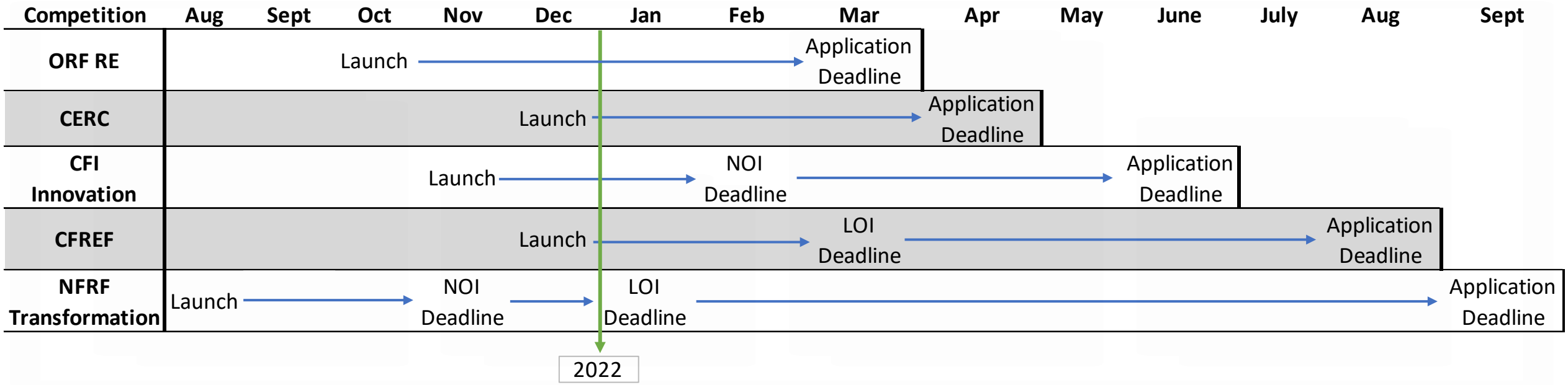
Call in preparation for the 2nd edition of the CIRC program

2. Increased university support for grant writing, matching contributions:

To improve the quality of research grant proposals and to increase University contributions to make them competitive

- CFI - $10K of internal funds for grant writing to be matched by Faculties
- SSHRC Partnership Grants –matching 1:1 up to $250k or 10% of the external funds with larger Faculties and $2 for every $1 from smaller Faculties
- More research support for research grant applications from smaller Faculties and ORUs

Recent Research Intensification Initiatives (2) – External Grants



- ORF-RE - $300k - $2M over 4 or 5 years
- CERC – Canada Excellence Research Chair ($4M or $8M over 8 years)
- CFI Innovation Fund (>$1M but typically $2M - $4M for infrastructure)
- CFREF – Canada First Research Excellence Fund ($40M - $80M over 7 years)
- NFRF Transformation - $24M over 6 years

Recent Research Intensification Initiatives (3) – External Grants

3. Facilitating preparation of Large-scale Research Grants – *To increase external research funding*

CFI: non-adjudicated NOI February 23, 2022, full application June 1, 2022. In preparation. $15M envelope

(Lead) Faculty	PI(s)	Request from York's CFI Envelope
Health	David Hood	$1,837,660
Lassonde	Satinder Brar & Pouya Rezai	$3,788,288
Lassonde	Alex Czekanski & Peter Backx	$3,496,566
Lassonde	Michael Jenkin & James Elder	$1,167,200
Lassonde	Gunho Sohn & Sunil Bisnath	$3,146,850
Science	Patrick Hall	$1,452,500

NFRF Transformation: Submitted. No institutional envelope.

York led:

1. **Steven Hoffman (Health)**
2. **Jeff Schall (Science)**
3. **Jianhong Wu (Science)**
4. Shahirose Premji (Health)
5. Afshin Rezaei-Zare (Lassonde)

Participating:

1. Michaela Hynie (Health) - led by Carleton
2. Henry Kim (Schulich) - led by McGill
3. Regina Lee (Lassonde) - led by Carleton
4. Deborah McGregor (EUC/Osgoode): involved in 3 - led by UBC, UVic, Usask)
5. Shayna Rosenbaum (Health) - led by McMaster,
6. Johnny Rungtusanatham (Schulich) - led by UVic
7. Jennifer Spinney (LA&PS) - led by Western.

Recent Research Intensification Initiatives (4) – External Grants

3. Facilitating preparation of Large-scale Research Grants (continued)

ORF/RE: Submission deadline March 21, 2022

CERC: Valued at $4M or $8M over eight years.
Faculties asked to apply by February 27, 2022 (internal deadline)
Institutional Envelope of $16M.

Registration:	September 15, 2022
Full application deadline:	October 13, 2022

CFREF: No prescribed award value
Working with VISTA researchers to develop a proposal in the area of AI, Neuroscience & Society
Proposed ask: ~$70M

Letters of intent to apply deadline:	April 5, 2022
Full application deadline:	August 31, 2022

Recent Research Intensification Initiatives (5) – External Grants

SSHRC Partnership Grants:

Lead Faculty (in Bold Font)	PI(s)	Project	Value
AMPD	Caitlin Fisher, AMPD, Professor Joel Ong, AMPD	Critical Advancement of Narratives in Digital Environments (CANDE)	$2.5M/7 years
AMPD Health Osgoode	Anna Hudson, AMPD, Debra Pepler, Faculty of Health, Professor Jeffrey Hewitt, Osgoode Hall Law School	Curating Indigenous Circumpolar Cultural Sovereignty: advancing Inuit and Sámi homelands, food, art, archives and worldviews (CICCS)	$2.5M/7 years
EUC LA&PS	Peter Victor, EUC, Tarmo Remmel, EUC, Peter Mulvihill, EUC, Linda Brand Correa, EUC, Eric Miller, EUC, Ida Ferrara, LA&PS	The Ecological Footprint Collaborative: Research, Novel Applications & Training	$2.5M/7 years
EUC	Martin Bunch, EUC, Ravi de Costa, LA&PS, Felipe Montoya, EUC, James Orbinski, Health, Ana Maria Martinez, EUC	The EcoSalud Partnership for Planetary Health and Rural Wellbeing in Southern Costa Rica	$2.5M/7 years
Education	Qiang Zha, Faculty of Education	Reimagining Liberal Arts Education with a Trans-Continental Partnership	$2.2M/6 years
LA&PS	Leah Vosko, LA&PS	Liberating Migrant Labour? International Mobility Programs in Settler-Colonial Contexts	$2.5M/ 7 years
LA&PS AMPD Lassonde	Paul Lovejoy, LA&PS, David Trotman, LA&PS; Co-Director Caitlin Fisher, AMPD, Co-applicant Damilola Adebayo, LA&PS, Aijun An, Lassonde	Harnessing Data to Understand Identity in Global Africa	$2.5M/7 years
LA&PS	Richard Saunders, LA&PS	African Extractivism and the Green Transition	$2.5M/ 6 years

Recent Research Intensification Initiatives (6) – Researchers focused

4. Facilitating creation of research clusters in areas of strategic interest to the University

- Disaster Emergency Management / Disaster Risk Governance
- Artificial Intelligence and Society
- Markham Campus Research Clusters: Research Clusters in AI & Society, FinTech, Digital Cultures
- Vaughan Health Care Precinct
- School of Medicine

5. Research enhanced faculty hiring (Led by the Office of Provost)

- Complement call invites proposals for up to 40 professorial stream Strategic Research Hires, each of which will be supported with central funding to assist in attracting exceptional candidates
- 4 Ontario Research Chairs in Public Policy: leading critical policy research that addresses broader issues of ethics, governance, and public policy.

6. Research Commons:

- Research grant preparation mentorship programming
- Research focused on workshops to faculty members, research staff, post-docs and graduate students at the university.
- Targeted workshops for faculty members who have not held a research grant in the last 5 years.

Recent Research Intensification Initiatives (7) - Space Planning

7. Supporting strategic research through infrastructure and space

- Markham Campus: Recommend development of 9th and 10th floors based on a more tailored approach with purpose-built space for research activities and interests
- iHive building – combining research and teaching spaces for both Faculties of Science and the Lassonde School of Engineering in addition to offering collaboration space for larger-scale interdisciplinary research programs, ORUs, and other strategic research clusters
- Identifying research space with Deans and Facilities Management for research, especially for CFREF and CERC

8. Launch new ORUs as transdisciplinary research centres/ institutes as incubators of interdisciplinary scholarship, research & action

Record 8 applications received including:

- Disaster and Emergency Management / Disaster Risk Governance
- AI & Society
- Neuroscience/VISTA

Recent Research Intensification Initiatives (8) - Digitization

9. Digitization of more research services-

- Invest in an updated online system where all processes, documents, certificates can be uploaded and tracked by ORE
- DocuSign- extending contract, ORS checklist consultation with faculty on improvements, adding in attachments
- Renew ORCID adaptation efforts: Ensure researchers receive correct attribution for their research outputs – very important for global positioning efforts.
- Electronic CV (eCV): An online software to capture and organize scholarly achievements that enables output in multiple formats and enables collection of summarized research data in anonymized manner.

10. Increase in Research Personnel: Graduate Students, Postdoctoral Fellows

- Needs for Markham research – Budget for research infrastructure at Markham requested
- Ensure participating Faculties include graduate students for Markham in their annual allocations
- Provost's Postdoctoral Fellowships for Black and Indigenous Scholars

Recent Research Intensification Initiatives (8)

YSpace expansion:

- YSpace (Georgina) physical location in Northern York Region supporting all new ventures from both Georgina and East Gwillimbury
- YSpace Vaughan (proposed)- have met with the City of Vaughan for a potential physical YSpace Vaughan with a focus on Smart Cities

New YSpace programming in York Region:

- Partnering with the Town of Georgina and the Town of East Gwillimbury to launch the Business Bounce Back program funded through the Skills Development Fund to support entrepreneurs in the hospitality and tourism sector. There are 75 participants.
- Newmarket programming: Supporting 100 ventures through the virtual membership program as part of the Skills Development Fund that the Town of Newmarket has submitted in collaboration with Innovation York, Schulich Executive Education Centre, and Treefrog (digital transformation company in Newmarket).
- With City of Vaughan launched a "Grow Your Food & Beverage Startup" Series that led to 10 mentorship sessions and two workshops. The partnership has been renewed for 6 workshops & 20 mentorship sessions in 2021/2022
- Richmond Hill's Small Business Enterprise Centre's Starter Company Plus program: Providing the fo d and beverage companies with mentorship, distribution support, and access to a network of reso ce

Recent Research Intensification Initiatives (9) – Strategic Entrepreneurship Plan

PURPOSE STATEMENT
Unleash the potential of our students and community through the spirit of purposeful and progressive entrepreneurship.

GUIDING PRINCIPLES
- Experiment, Learn and Grow
- Be Courageous
- Be Intentional about Equity, Diversity, Inclusion & Decolonization
- Make Entrepreneurship Accessible and Empowering
- Act with Consideration
- Listen to Mobilize

STRATEGIC OBJECTIVES

Develop & deliver purposeful, impactful, & experiential interdisciplinary programming.

Establish energizing, connected hubs in accessible neutral places.

Position York as a leader in entrepreneurship research.

Identify and address barriers to access, inclusion and diversity in programming, hubs, and resources.

Make entrepreneurship at York self-sustaining.

Build strong connections and enthusiastic engagement through strategic partnerships.

Fostering the Future of Artificial Intelligence: Report from the York University Task Force on AI & Society

FEATURING A KEYNOTE TALK

AI and Society: A Seamless Capability-Based Integration

Manuela M. Veloso

Head, JPMorgan Chase AI Research

Herbert A. Simon University Professor Emeritus,

School of Computer Science, Carnegie Mellon University

Moderated Panel Discussion to Follow

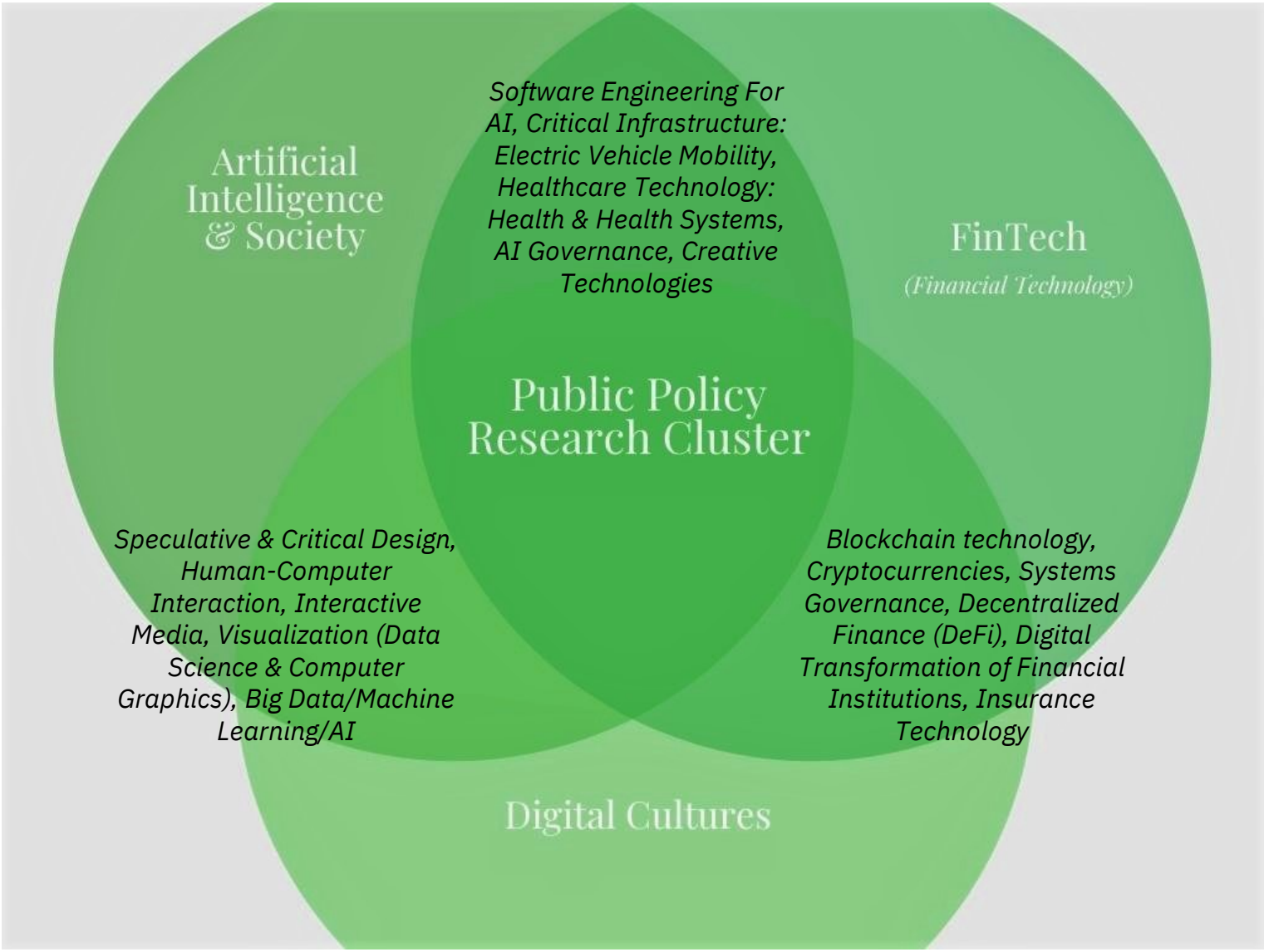
Tuesday November 16, 2021

12:30 p.m. – 2:00 p.m.

The event is free, but registration is required to obtain the access URL for the Zoom Webinar.

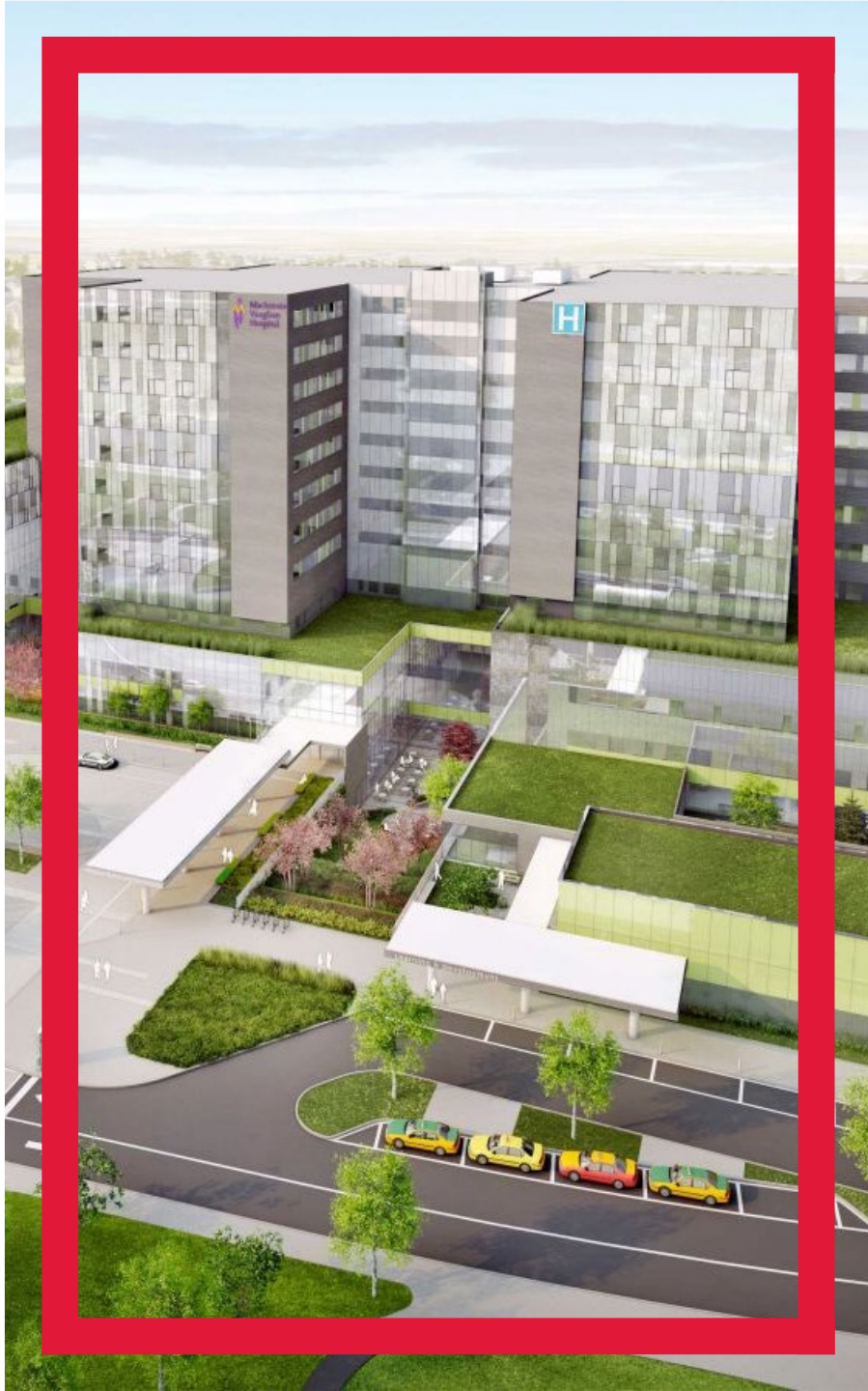
Register in advance:

[Link to AI & Society Report: https://ai.info.yorku.ca/files/2021/11/YorkVPRI-AI-and-Society-Task-Force-Report.final_.Nov_.12.pdf?x24590](https://ai.info.yorku.ca/files/2021/11/YorkVPRI-AI-and-Society-Task-Force-Report.final_.Nov_.12.pdf?x24590)


Artificial Intelligence & Society
Software Engineering For AI, Critical Infrastructure: Electric Vehicle Mobility, Healthcare Technology: Health & Health Systems, AI Governance, Creative Technologies
FinTech
(Financial Technology)
Public Policy Research Cluster
Speculative & Critical Design, Human-Computer Interaction, Interactive Media, Visualization (Data Science & Computer Graphics), Big Data/Machine Learning/AI
Blockchain technology, Cryptocurrencies, Systems Governance, Decentralized Finance (DeFi), Digital Transformation of Financial Institutions, Insurance Technology
Digital Cultures

Vaughan Healthcare Precinct

- In discussions with President of Mackenzie Health to establish potential collaborations in the areas of Allied Health and Nursing as well as Advancing Health Informatics, health intelligence, population analytics etc. which would involve multiple Faculties including Health and Engineering.
- Also, working with Oak Valley Health (formerly Markham Stouffville Hospital), Southlake Regional Hospital in Newmarket, Humber River Hospital, North York General, and Cortellucci Vaughan Hospital to identify projects for potential collaboration.
- Led by Rebecca Pillai and Patrick McGrath (Dalhousie) CIHR DIVERT Mental Health Application (Digital, Inclusive, Virtual, Equitable Research Training in Mental Health) for $4.8 million approved in collaboration with IBM – Under embargo



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Disaster Risk Governance and Disaster Emergency Management

Developing a campus-wide initiative to further advance York's international leadership in Transformative Disaster Risk Governance and related fields that will encompass research, scholarship and academic opportunities along with professional development activities

- Researchers have submitted a Charter proposal for a DEM/DRG Organized Research Unit.
- Researchers were successful at securing a Catalyzing Interdisciplinary Research Clusters grant- $150/year for 3 years: *Disaster and Health Emergency Urban System Risk Transformation Cluster*
- Vision document prepared for government officials- GR to facilitate advocacy.
- Continuing regular scholarly symposiums, webinar speaker series & newsletter
- Continue meeting with Steering Group to continue with advancing capacity building activities within DRG/DEM including regular scholarly symposiums, webinar speaker series and newsletters

2021 Invited Speakers: Symposium & Webinar Series

Dr. David Alexander, Professor of Risk & Disaster Reduction at University College London

Dr. Hugo Slim Policy & Humanitarian Diplomacy International Committee of Red Cross, Geneva

Dr. Mduduzi Mbada Deputy Director-General, Office of the Premier, South Africa

Facilitating Research Excellence: Equity, Diversity & Inclusion

Supporting Black, Indigenous & Intersectionality Scholarship

With VP-EPC, developed:
- Colonizing Research Administration: Report, Action Plan, and funding
- Funding for Black research projects in support of Black Inclusion Framework
- Polaris (Place of Online Learning of the Adjudication of Researchers Inclusively and Supportively): Online EDI training module for adjudication committees
- Additional support for EDI focused ORUs

With VP-EPC, University funding pending for projects for next three years in:
- Black community engagement and research
- Indigenous community engagement and research
- Sex-gender and dis/ability research and Knowledge Mobilization

Questions, Comments, Discussion:

The Senate of York University – Minutes

Meeting: Thursday, 27 January 2022, 2:45 pm via Zoom

M. Roy (Chair)	D. Gruspier	K. Murray
M. Annisette (Acting Vice-Chair)	M. Guzman	R. Nandan
P. Robichaud (Secretary)	M. Hamadeh	N. Niell
L. Appel	L. Hébert	R. Ophir
J. Aryaan	E. Hessels	K. Ozowe
A. Asif	A. Hilliker	D. Palermo
P. Aulakh	R. Hornsey	V. Pavri
A. Badruddin	M. D. Hosale	L. Philipps
T. Baumgartner	A. Hovorka	P. Phillips
S. Bay Cheng	B. Hu	W. Pietro
D. Berbecel	U. Idemudia	M. Poon
R. Bhatla	M. Karakul	C. Popovic
K. Bird	I. Jamaa	A. Pyée
M. Bloom	S. Karimi	P. Rahimpoor-Marnani
S. Brooke	P. Kholer	A. Rizwan
M H. Budworth	A. Kimakova	V. Saridakis
M. Bunch	J. Kirchner	R. Savage
D. Cabianca	T. Knight	D. Scott
N. Canefe	L. Korrick	L. Sloniowski
B. Charlton-Lewis	A. Kraljevic	B. Spotton Visano
T. Choi	K. Krasny	C. Steele
J. Clark	A. Kusi	T. Theophanidis
E. Clements	P. Lakin-Thomas	M. Thomas
J. Conder	M. Lambert-Drache	K. Thomson
M. Condon	G. Langlois	T, Torry
J. Connolly	H. Larochelle	G. Tourlakis
S. Cote-Meek	M F. Latchford	D. Triki
M. Dodman	J. Lazenby	R. Tsushima
S. Ehrlich	N. Lemish	I. Uwanyiligira
M. Elghobashy	R. Lenton	C. van Daalen Smith
J. Etcheverry	S. Liaskos	G. van Harten
D. Fernandez	K.C. Lo	G. Vanstone
M. Fiola	T. Loebel	A. Viens
T. Frattaroli	A. Macpherson	R. Wang
S. Gajic-Bruyea	Y. Manek	S. Watson
L. Fromowitz	L. Martin	N. Waweru
D. Gelb	W. Maas	R. Wildes
M. Giudice	D. Matten	M. Winfield
J. Goodyer	C. McAulay	S. Winton
S. Grace	P. McDonald	P.Wood
C. Graham	A. McKenzie	R. Zacharias
J. Grant	J.J McMurty	G. Zhu
R. Grinspun	B. Meisner	

The Senate of York University – Minutes

1. Chair's Remarks

The Chair, Professor Mario Roy of Glendon College, welcomed Senators to the meeting. He acknowledged with sorrow the recent passing of two faculty colleagues, Paul Wilkinson, University Professor and former Chair of Senate, and Michael Goldrick, Professor Emerita.

2. Business Arising from the Minutes

There was no business arising from the minutes.

3. Inquiries and Communications

There were no Communications.

4. President's Items

President Lenton reported on the following items:

- acknowledgment of the recent passing of two York community members, David Ogden, Shift Engineer in Energy Management, Facilities Services, and John McCurdy, PhD candidate
- the appointment of Margaret Kierylo as Assistant Vice-President, Institutional Planning & Chief Data Officer, effective April 1, 2022
- the appointment of Brad Strom as Chief Information Officer, effective February 21, 2022
- continued prioritization of the health and safety of the community and acknowledgement that the University will continue to align York's plans for a safe return to in-person activity with public health guidance
- an update on York's Well-Being Strategy, including the creation of a Well-Being Executive to support the initiative
- an update on York's Sustainability Framework, which positions York as a Living Lab to support major sustainability projects including food security and electrical vehicles
- an update on the current SMA3 process, including the weighting of key performance metrics
- the Kudos report, highlighting the work of Professor Sherry Grace, Faculty of Health, who is co-leading the development of the world's first cardiac rehabilitation registry

The monthly "Kudos" report on the achievements of members of the York community can be accessed with other documentation for the meeting.

Committee Reports

5. Executive Committee

a. Information Items

The Executive Committee's information items included the following:

- its ongoing monitoring of the impact of the COVID-19 pandemic on academic activities, with actions pertaining to the disruption outlined in its written Report
- its review of feedback received from Senators and confirmation of the scope of the 2021-2022 Senate Rules review exercise
- its approval of individuals nominated by Faculty Councils for membership on Senate committees
- additions to the pool of prospective honorary degree recipients
- the Sub-Committee on Honorary Degrees and Ceremonials' approval of a recommendation from the University Registrar to permit the use of students' chosen first names (retaining surnames) on University parchments (diplomas and certificates)
- the recent activities of the Sub-Committee on Equity, including the review of its mandate, terms of reference, and composition
- its discussion of the mode of delivery of Senate meetings going forward

6. Academic Policy, Planning and Research (APPRC)

a. Information Items

APPRC reported on the following items:

- an update on recent preparations for the APPRC-sponsored spring planning forum on the *Future of Pedagogy*

7. Academic Standards, Curriculum and Pedagogy (ASCP)

a. Addition of a new stream and Minor degree option in Entrepreneurship and Innovation, Bachelor of Commerce degree program, Markham Campus

It was moved, seconded and carried**, "that Senate approve the addition of a new Stream and a Minor degree option in entrepreneurship and Innovation in the**

Bachelor of Commerce degree program, Markham Campus, Faculty of Liberal Arts and Professional Studies, as set out in Appendix B, effective FW2023-2024."

b. Addition of a new Field in Municipal Government within the Master of Public Policy, Administration and Law degree program, Markham Campus, LA&PS

It was moved, seconded and carried**, "that approve addition of a new Field in Municipal Government within the Master of Public Policy, Administration and Law degree program, Markham Campus, Faculty of Liberal Arts and Professional Studies, set out as Appendix C, effective FW2023-2024."**

c. Revisions to requirements and addition of a new Specialized Honours option within Bachelor of Human Resource Management, School of Human Resources Management, LAPS

It was moved, seconded and carried**, "that approve revisions to requirements and addition of a new Specialized Honours option within the Bachelor of Human Resource Management degree program, School of Human Resources Management in the Faculty of Liberal Arts and Professional Studies set out as Appendix D, effective FW2022-2023."**

d. Changes to requirements and name of BA and BSc degree programs in Science and Technology Studies, Department of Science and Technology Studies, Faculty of Science

It was moved, seconded and carried**, "that approve changes to requirements and the name of the BA and BSc degree programs in Science and Technology Studies from "Science and Technology Studies" to "Science, Technology and Society", Department of Science and Technology Studies, Faculty of Science as set out in Appendix E, effective FW2022-2023."**

e. Information Items

ASCP reported on its continued review of proposals for curricular programming at the Markham Campus and approval of the following minor modifications to curriculum:

Faculty of Liberal Arts & Professional Studies

Revisions to the calendar copy for the Japanese, BA program

Minor changes to the program requirements for the BCom Business Minor

Minor changes to the program requirements for the Children, Childhood & Youth BA program

Minor changes to the workshop requirement for the MA, PhD and Graduate Diploma programs in English

Glendon

Minor changes to the requirements for the Canadian Studies Minor

Minor changes to the admission requirements for the Communications, Hons BA program (effective immediately)

Minor changes to the General Education requirements for the Psychology, BSc program

Faculty of Education

Removal of pre-requisites from non-required BA courses for the BA program in Education Studies

Faculty of Health

Minor changes to the degree and admission requirements for the MA and PhD programs in Critical Disability Studies

School of the Arts, Media, Performance and Design

Changes to the rubric for the MA in Design Research and the Master of Design program

8. Other Business for Which Due Notice Has Been Given

a. Hortative Motion re: Anti-Black Racism Framework and Action Plan

Senator Uwanyiligira provided members with an overview of the proposed recommendation, explaining that the intention is to address gaps within the Framework to Address Anti-Black Racism and the Action Plan on Black Inclusion and its implementation.

Senators engaged in a discussion in which several themes surfaced, including the importance of accurately representing the diversity of the black and racialized community members and continued consultation throughout the implementation of the Framework and Action Plan. At the conclusion of the discussion, it was moved, seconded and carried**, "that Senate hereby expresses its view that a combination of a bottom-up, community-led, research-based and data-driven process with strong leadership, commitment, and action from York's administration is required to enact a robust Framework to Address Anti-Black Racism and an accompanying Draft Action Plan on Black Inclusion that challenge the structural inequities, power imbalances, and ideologies of white supremacy that are at the root of systemic racism. Senate**

expresses concern that such a commitment to substantial change, working closely with the affected communities, has yet to emerge, nor is it evident in the Draft Action Plan on Black Inclusion or in other actions taken so far."

b. Hortative Motion re: provision of N95 respirator masks

Senator Patrick Phillips spoke to the proposed motion. It was explained that, in the context of the COVID-19 pandemic and York's response, the intention of the recommendation is to promote safety at York by making N95 respirator masks accessible to all members of the University community.

It was moved, seconded and *carried by the necessary two-thirds majority* "**that the meeting be extended by 10 minutes.**"

It was moved, seconded and carried**, "that, based on emerging public health literature promoting the use of N95 respirator masks over cloth and surgical masks, and out of a concern that all York University students, staff, and faculty have equitable access to respirator masks, Senate hereby expresses its opinion that York University should –**

1. **procure,**
2. **provide free or heavily subsidize, and**
3. **safely distribute N95 or KN95 (or equivalent or better) respirator masks to all community members.**

It further expresses its opinion that this practice be maintained for the Winter 2022 semester, with the possibility of an extension if the pandemic continues."

9. Other Business

There being no further business it was moved, seconded, and carried **"that Senate adjourn."**

Consent Agenda Items

10. Minutes of the Meeting of 16 December 2021

The minutes of the 16 December 2021 meeting were approved by consent.

11. Change of program name from "Film" to "Cinema and Media Arts", Department of Cinema and Media Arts, AMPD

Senate approved by consent the change of the program name from "Film" to "Cinema and Media Arts", Department of Cinema and Media Arts, AMPD, effective FW2022-2023.

Mario Roy, Chair _____

Pascal Robichaud, Secretary _____