

Strategic Research Plan 2023-2028

Presentation to the Faculty of Health,
October 5, 2022

YORK 



SRP Advisory Committee

Amir Asif, VP Research & Innovation (Chair)

Joycelyn Amos, Markham Research Operations Manager, VPRI

Nation Cheong, VP Community Opportunities and Mobilization, United Way Greater Toronto

Krista Davidson, Interim Director, Communications, Office of the President

Tamara Daly, Director YU-CARE, Professor, School of Health Policy & Management, Health

Susan Dion, Associate VP Indigenous Initiatives, VPEPC, Professor, Faculty of Education

Barbara Edwards, Senior Policy Advisor, Research, VPRI

Trevor Farrow, Associate Dean, Research & Institutional Relations, Professor, Osgoode

Eileen Fischer, Associate Dean Research, Director Marketing Specialization, PhD Program, Entrepreneurial Studies, Schulich

Sarah Flicker, YRC in Community-Based Participatory Research, Professor, EUC

Jane Gertner, VP Partnerships, venture LAB

Jennifer MacLean, Assistant VP, Innovation & Research Partnerships, Innovation York

Michael Moir, University Archivist, Office of the Dean of Libraries, Chair APPRC

Carmela Murdocca, Professor, Dept of Sociology, LA&PS

Swann Paradis, Associate Principal Research and Graduate Studies, Associate Professor French Studies, Glendon College

Gillian Parekh, CRC in Disability Studies in Education, Associate Professor, Education

Sarah Parsons, Associate Professor, Dept of Visual Arts & Art History, AMPD

Joel Prowting, PhD candidate (CIHR)

Mark Roseman, Director SIRI, Office of Research Services, VPRI

Vivian Saridakis, Associate Dean Research and Graduate Education, Associate Professor, Dept. of Biology, Science

Jen Steeves, Associate VP Research, YRC in Non-Invasive Visual Brain Stimulation, Professor, Dept of Psychology, Health

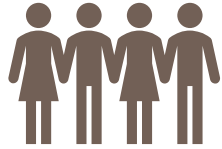
Yvonne Su, Assistant Professor, Dept of Equity Studies, LA&PS

Skandha Sunderasen, Associate Director, Global Engagement and Strategic Directions, York International

Cheryl van Daalen-Smith, Associate Dean Academic, FGS, Associate Professor, School of Nursing, Health

Rick Wildes, Associate Professor, Vice-Chair Graduate Program, Dept of Electrical Engineering & Computer Science, Lassonde

SRP Advisory Committee



Who

Reflective of the research community at York and the broader community

Providing strategic advice that represents broader community interests

Includes External members



What

Champion for the consultation process

Guiding discussion and providing advice on engagement and feedback

Conduit for discussion and consultation within your respective community



Goal

Setting an aspirational vision for research

Describing who we are and what we do- comprehensive strengths

Setting out where we want to go- focused areas of Opportunity

Consultations Engagement- Fall 2022

Open Forum:

- ✓ September 28th

Community Feedback Sessions- series of unstructured feedback sessions across the University to discuss SRP development with the VPRI

- Friday October 21st – 9:00am – 10:00am, 402 HNES
- Tuesday November 1st – 1:00pm – 2:00pm , 283 Winters College
- Tuesday November 29th – 11:00am – 12:00pm, 305B Lumbers

Faculty Feedback- VPRI along with members of the SRP Advisory Committee will consult faculty members at all Faculty Council meetings

Health- October 5 Schulich- November 4

Lassonde- October 7 Science- November 8

LA&PS- October 13 AMPD- November 9

Glendon- October 28 EUC- November 24

Education- October 28 Osgoode- November 28

Libraries- TBC

FGS- November 3

Upcoming Consultations- Fall 2022

Fall 2022

Continued consultations with Advisory Bodies- VPRI presentations and engagement of Senior Advisory Bodies throughout the fall term

Graduate Student engagement- VPRI will be arranging a post-doc feedback session.

Online Engagement: SRP website found on Research & Innovation site:

<https://www.yorku.ca/research/strategic-research-plan-2023-2028>

Regular updates on SRP planning and consultation activities.

Online feedback is also solicited, welcomed and accessible through the SRP website

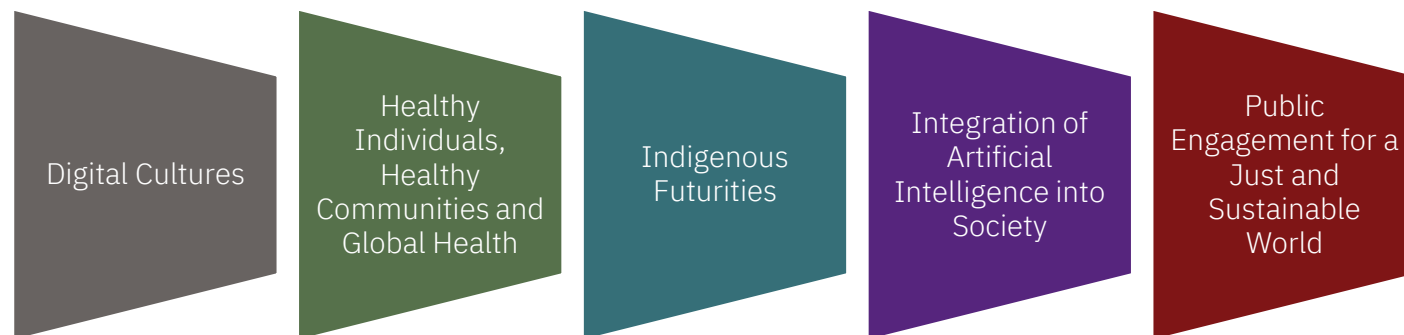
Overview: Strategic Research Plan (2018-2023)

In 2018 York University began a new five-year Strategic Research Plan (SRP), developed over an 8-month period with substantial input from the York community as well as internal and external research partners.

The SRP document reflects our research strengths across the institution across intersecting themes. These areas are those in which the university commits to ongoing investment which, in turn, will enhance the influence and recognition of our scholarship and creative activities.



The document also articulates five areas of opportunity to further accelerate research growth and success. These areas of opportunity are timely and address both newly emerging challenges and areas where we can further bolster our established research leadership.



Health in the Current SRP (2018-2023)

Research Strengths

- ✓ Building Healthy Lives, Communities & Environments
 - This theme encompasses the study of health, from age-related ailments and disease prevention, through cognitive and physical health, to the influence of income inequality, the social determinants of health as well as the health of communities and global health.
 - It includes health policy, services and systems, as well as research in the biomedical and clinical sciences and population health.
- ✓ Exploring and Interrogating the Frontiers of Science & Technology
 - Cross-cutting disciplines in this theme include health – vision research, neuroscience, life sciences

Opportunities for the Strategic Development of Research

- ✓ Healthy Individuals, Health Communities and Global Health
 - Expanding research that focuses on health, health care regulations, health outcomes and the promotion of wellness. From the biomolecular engineering to the health of populations, from biomedical to social work and health law, and from healthy aging in communities to global child health.
- ✓ Indigenous Futurities
 - Indigenous health and health challenges
- ✓ Integration of Artificial Intelligence into Society
 - development of visual perception technologies
 - studying the moral, ethical and legal implications of AI adoption; also effects on governments, labour markets, the legal system, personal and national security, human health and health systems; and its challenges to our sense of individual identity and collective humanity.

What are we hearing so far

SRP Open Forum

September 28th, 1-3pm

Among the comments offered by those present at the open forum:

- An emphasis on reinforcing our leadership on **partnered and community-based research** into the overall research aspirations of the University
- The desire to **integrate the United Nations Sustainability Development Goals** within the Plan
- A greater focus on **sustainability and climate crisis**, as a separate or enhanced opportunity area within the Plan
- An emphasis on continuing our work in advancing **pathways for Indigenous and other racialized scholars** and enabling their research success
- Exploring and interrogating the frontiers of STEM, social sciences, humanities, and arts **to solve “wicked” societal problems through collaborative, large-scale initiatives and international partnerships**
- New strategy document needs to be **‘rousing’ and inspiring** to internal folks as well as external

Additional comments included areas around healthy aging, racial justice, equity, diversity and inclusion, enhanced research services, and increased support for research infrastructure in enabling strategic research success.

Considerations for the SRP (2023-2028)- Science, Technology and Innovation

Priorities for the Canada Excellence Research Chairs Program and the Canada First Research Excellence Fund

Healthy Canadians

- Focus Areas:
Aging population, antimicrobial resistance, Indigenous health, Brain Health, Mental Health, precision Medicine, Population Health, Regenerative Medicine, Vaccinology, Problematic Substance Abuse, Primary Care (delivery models, access, outcome improvements)

Innovative and Resilient Communities

- Focus Areas:
Data Governance & Security, Governance and Public Institutions, Social Dimensions of Aging; Business-Sector Innovation, Digital Economy, Reconciliation, Systemic Barriers, Inequality (social, economic, health), The North, Resilient Infrastructure, Smart Cities, Technology & Society

Sustainable Food Systems

- Focus Areas:
Agri- and aqua-culture, Agri- and irrigation technology, Bioeconomy, Food Sovereignty, Indigenous-led Agriculture, Livestock health and sustainability, Plant Health, Proteins and Alternative Food Sources, Safety and Security of Food Supply Chain

Clean and Resource-Rich Canada

- Focus Areas:
Alternative Energy Technologies, Circular Economy (waste treatment, greening manufacturing, sustainable food packing), Clean Technologies, Clean Transportation, Climate Change Research, Conservation Ecology, Energy, Forestry, Green Chemistry Low Carbon Materials for Construction, Modern Mining, Northern and Arctic, Water

Technologically Advanced Canada

- Focus Areas:
AI, Big Data technologies and Analytics, Biomanufacturing, Cybersecurity, Genomics and Applied Science, Materials and Processing Technologies, Micro-Electronics and Semi-Conductors, Communication Technology, Quantum Technologies, Photonics, Smart and Digital Manufacturing, Space Economy

Current SRP (2018-2023), Chairs, ORUs Related Fit

Healthy Canadians

- Health Individuals, Healthy Communities and Global Health
- 12 CRCs and 22 YRCs in related areas
- 6 ORUs

Innovative and Resilient Communities

- Digital Cultures
- Public Engagement for a Just and Sustainable World
- 12 CRCs and 13 YRCs in related areas
- 12 ORUs

Sustainable Food Systems

- 2 YRCs in related areas
- 1 ORU

Clean and Resource-Rich Canada

- Public Engagement for a Just and Sustainable World
- 4 CRCs and 4 YRCs in related areas
- 1 ORU

Technologically Advanced Canada

- Integration of Artificial Intelligence into Society
- Digital Cultures
- 3 CRCs and 7 YRCs in related areas
- 5 ORUs

What are the SRP Focus Areas @ Peer Institutions

	TMU (formerly Ryerson) (2020-2025)	McMaster (2018-2023)	University of Toronto (2018-2023)	Queens University (2018-2023)
Environment & Energy	Energy (Centre for Urban Energy)	Environment & Energy	Societies, the Environment and Natural Resources	Environment & Resources (Cleantech, Energy solutions)
AI & Society		Data, AI and Digital Society	Technologies for the Future (AI, Data, Robotics)	Research in Materials, Computational Analytics and Human-Machine Interactions
Equity, Diversity and Sustainable / Just Society	Democracy Studies, Migration and Settlement	Equitable, Prosperous & Sustainable Societies	Governance, Diversity and Social Justice	Successful & Just Societies through Scholarship, Governance and Policy
Indigenous Knowledge [Indigenous Futurities]		Indigenous Knowledge & Research		Mobilizing Creativity and Enabling Cultures (creative production, society, culture, Indigenous research)
Communications Technology, Digital Culture	Cybersecurity, Creative Innovation		Language, Culture, Art, Values (digital communications, design)	
Urban Innovation/ Smart Cities	City Building & Urban Innovation		Community and Livable Societies	
Advancing Materials & Manufacturing		Advanced Materials and Manufacturing		
Healthy People, Health World	Biomedical Engineering	Chronic Disease, Aging, Infectious Disease	Healthy People, Healthy Communities, Healthy World	Health, Wellness and the Determinants of Human Health
Other	Future Skills Centre		Understanding of Humanity and the Universe	Principles of Nature: Discovery to Application & Innovation (understanding the Universe)

Considerations for the SRP (2023-2028)

Does the format of the current SRP serve us well?

- Comprehensive Research Strengths
- Opportunities for the Development of Research
- Enabling Strategic Research Success
 - Supporting Research Development
 - Working in Partnership, Translating Research into Action and Promoting Innovation & Entrepreneurship
- Other areas? Integration of the SDGs?



Considerations for the SRP (2023-2028)

Have the Areas of Opportunities for the Strategic Development of Research Evolved? Are they still relevant?

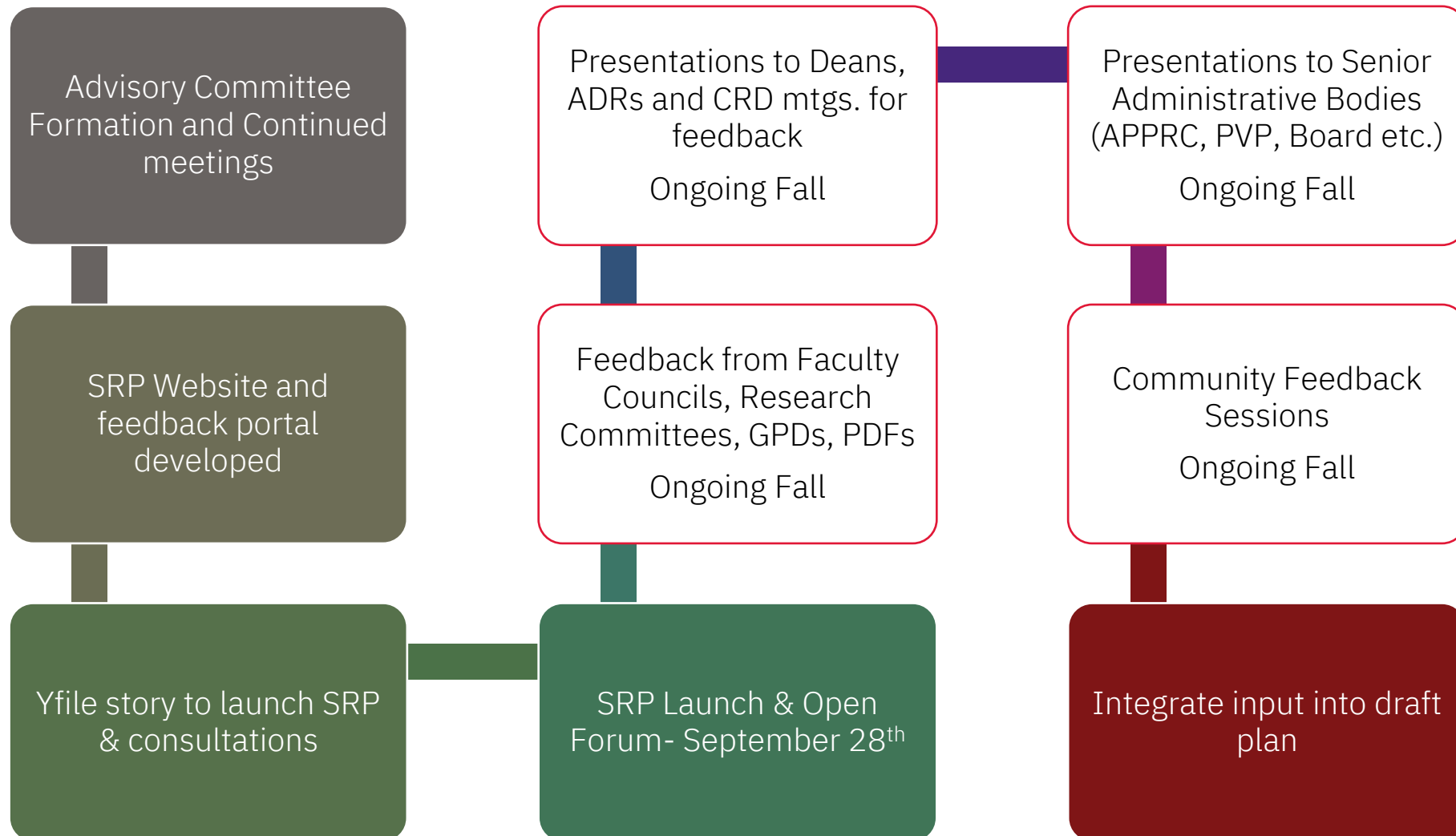
- Focused areas we want to accelerate research growth and success
- Addressing newly emerging challenges and areas where we can bolster our research leadership
- **Digital Cultures**
- **Health Individuals, Healthy Communities & Global Health**
- **Indigenous Futurities**
- **Integration of Artificial Intelligence into Society**
- **Public Engagement for a Just and Sustainable World**

Considerations for the SRP (2023-2028)

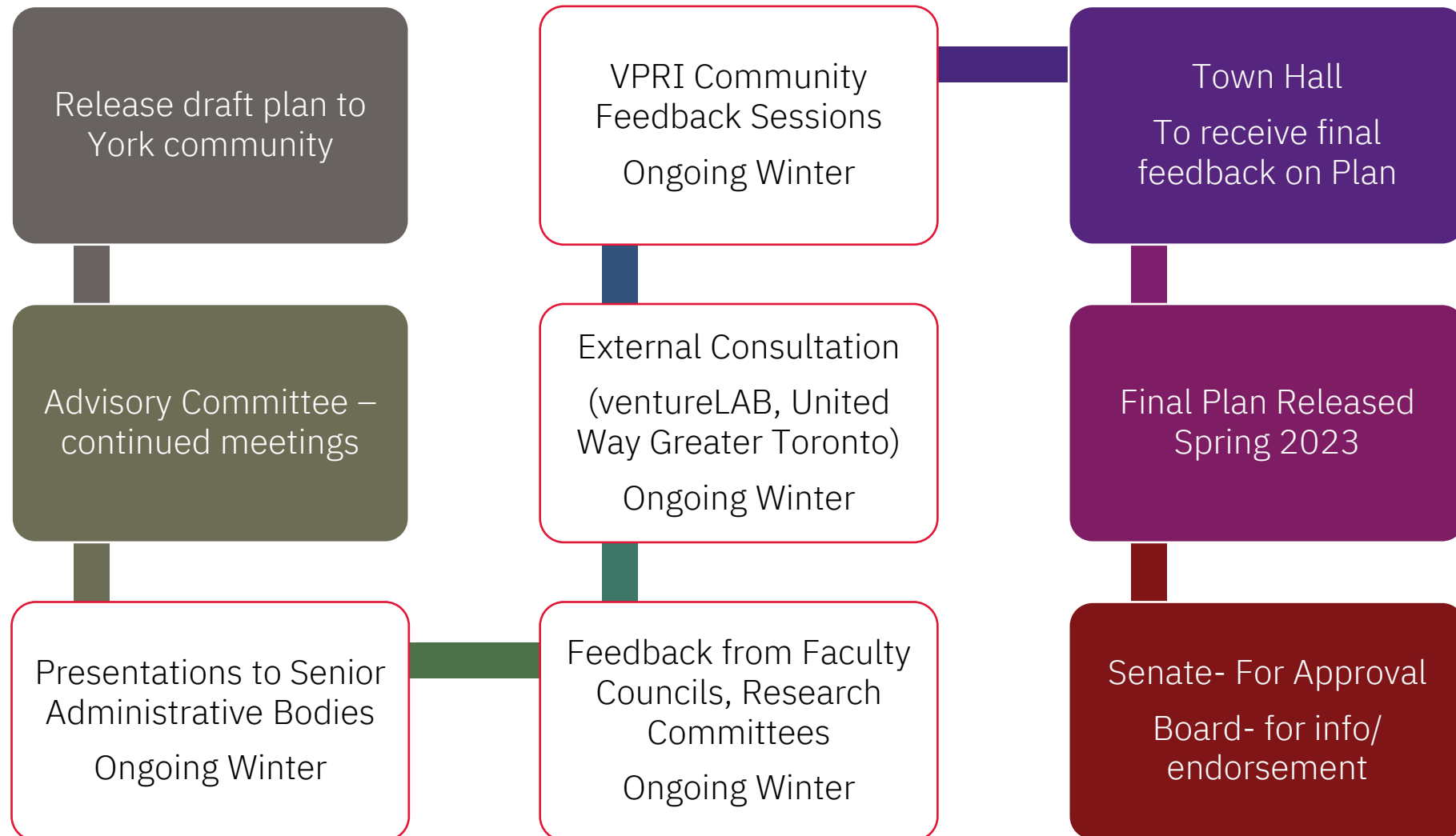
Have the Areas of Comprehensive Research Strengths (themes) Evolved?
Do they need to be adjusted?

- **Advancing Fundamental Inquiry and Critical Knowledge**
- **Analyzing Cultures & Mobilizing Creativity**
- **Building Healthy Lives, Communities & Environments**
- **Exploring and Interrogating the Frontiers of Science & Technology**
- **Forging a Just & Equitable World**
- **Integrating Entrepreneurial Innovation & the Public Good**

Draft SRP Process – Phase 1



Draft SRP Process – Phase 2



Questions, Comments, Discussion:



Some Major Accomplishments in Five Areas of Opportunities

Integration of Artificial Intelligence into Society

Establishing AI & Society Task Force to examine options for expanding and enhancing AI teaching and research at York

AI Task Force Report [“Fostering the Future of Artificial Intelligence: Report from the York University Task Force on AI & Society”](#)

Supported the development of the AI@YorkU website which establishes our digital presence of our interdisciplinary and transdisciplinary AI expertise ai.yorku.ca

AI & Society researchers have been awarded an internal research grant under the Catalyzing Interdisciplinary Research Clusters initiative “AI Systems: Engineering, Governance & Society”

New ORU approved: Centre for AI & Society (CAIS), as of July 1, 2022

Ongoing meetings with the Vector Institute for Artificial Intelligence in expanding our academic partnership

AI & Society has been identified as one of the Markham Campus research clusters for research intensification

Hosted multiple AI focused conferences and workshops including a National AI Conference/ Graphics Interface / Computer and Robot Vision Conference 2018

Some Major Accomplishments in Five Areas of Opportunities

Healthy Individuals, Healthy Communities and Global Health

MOU with hospitals including Cortellucci Vaughan Hospital, Mackenzie Health, and Oak Valley Hospital on collaborating in areas that include education, professional and community development

Virtual AMR Policy Think Tank: funded by Wellcome Trust antimicrobial resistance (AMR) Priority Program - \$8 million / 3 years. Led by Steven Hoffman

WHO Collaborating Centre on Global Governance of Antimicrobial Resistance (WHOCC) at York as a part of York University's [Global Strategy Lab](#)

SSHRC Partnership Grant: 2018, Tamara Daly, *Imagining Age-Friendly 'Communities within Communities: International Promising Practices*; SSHRC Partnership Grant: 2022, Steven Hoffman, will pursue research into a global framework for sustainable antimicrobial drug use and preventing the proliferation of drug-resistant bacteria; CIHR H RTP: 2022, Rebecca Pillai Riddell, *Digital, Inclusive, Virtual, and Equitable Research Training in Mental Health Platform* (DIVERT Platform)

New ORU approved: Centre for Integrative and Applied Neuroscience

International Development Research Centre (IDRC) grant for the 5-year project: Global South Artificial Intelligence for Pandemic and Epidemic Preparedness and Response Network. \$7.25M. PI: Jude Kong (Faculty of Science)

York has increased its CIHR funding by 20% from 2017-18 to 2020-21

Some Major Accomplishments in Five Areas of Opportunities

Digital Cultures

2018- SSHRC Partnership Grant – Janine Marchessault *Archive/Counter-Archive: Activating Canada's Moving Image Heritage*, which involves 43 co-applicants and has collaborators from Canada and across the world.

NCRN (2018-2023) A \$5.5 million NSERC Strategic Partnership Grant is funding the NSERC Canadian Robotics Network (NCRN). The Interactive Autonomy theme of the network is led by Michael Jenkin (EECS, Lassonde).

DITA (2019-2025) A \$1.65 million NSERC grant established the NSERC CREATE Training Program in Dependable Internet of Things Applications (DITA), led by Professor Marin Litoiu (EECS, Lassonde; School of Information Technology, LA&PS).

Over the last five years, AMPD researchers averaged \$1.2 million in annual Tri-Council grants, with a 52 per cent success rate for other competitive funding sources and over \$700,000 in annual commissions, arts grants and other non-council awards

New ORU approved: Institute for Technoscience & Society (ITS), as of July 1, 2022

Digital Cultures has been identified as one of the Markham Campus research clusters for research intensification

Some Major Accomplishments in Five Areas of Opportunities

Indigenous Futurities

Established Centre for Indigenous Knowledges & Languages (CIKL)- facilitate research and knowledge production and dissemination, by Indigenous and non-Indigenous scholars, that re-centres Indigenous knowledges, languages, practices, and ways of being

Decolonizing Research Administration Framework- Report, Action Plan, & funding. Enabling a research culture that interacts in positive and respectful ways with Indigenous people & Indigenous knowledge.

Supporting Indigenous scholars: Indigenous Research Seed funding - 10 scholars awarded with Indigenous Research Seed Fund grants. Investing \$250k this year, \$300k for next 3 years.

Researchers awarded an internal research grant under the Catalyzing Interdisciplinary Research Clusters initiative “Indigenous Climate Leadership and Self-Determined Futures”

SSHRC Partnership Grant: 2022, Dayna Scott, “Infrastructure Beyond Extractivism: Material Approaches to Restoring Indigenous Jurisdiction”

Completed planning for the first Indigenous Research Ethics Board in Canada, to be presented to Senate
Ongoing regular consultations with Office of VPEPC and Indigenous Council

Some Major Accomplishments in Five Areas of Opportunities

Public Engagement for a Just and Sustainable World

Establishment of ORU Bee Ecology, Evolution & Conservation (BEEc) - fostering interdisciplinary, innovative, collaborative, and cutting-edge research to be used for the advancement of knowledge and implementation of policy changes to help sustain pollinators globally.

Network of Centres of Excellence – “Making the Shift” (\$43M in total funds) combining academic research and community expertise to inform solutions and prevention strategies for youth homelessness (2019-2024)

Supporting the Equity Strategy and related EDI Frameworks and Action Plans- seed funding for Black community, and engagement and research, and intersectionality research and Knowledge Mobilization. Additional support for EDI focused ORUs

POLARIS (Place of Online Learning of the Adjudication of Researchers Inclusively and Supportively): Online EDI training module for adjudication committees

Two new ORUs approved: York Emergency Mitigation, Engagement, Response and Governance (Y-EMERGE) and One WATER, as of July 1, 2022

United Nations firsts at York: CIFAL: First Canadian UN leadership training centre opens at York. UNECE- UN Economic Commission for Europe (UNECE) established the Toronto Centre of Excellence on Youth Homelessness Prevention, the first Geneva UN Charter Centre of Excellence in North America.

Overall Achievements

- Since 2018 York's total publication output has increased 27%
- Since 2017/18 York's Tri-Council funding has increased 17.38%, currently over \$44M in 2020/21, our highest level ever
- Since 2017/18, the number of research grant proposals – both submitted and approved have grown by 50%.
- York externally sponsored research funding exceeds \$110M – the highest level ever
- Since 2018 York has ramped up our York Research Chairs and have appointed 54 YRCs
- Since 2018 York has filled our Canada Research Chair positions with 30 new and renewed Chairs
- Since 2018 York has had 28 new RSC Fellows and new members of the RSC College- which now totals 93 new Fellows and 53 new members
- Research applications at York have increased 45%, with successful applications increasing by 63% from 2017/18 to 2020/21

ySpace Digital

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

ySpace Markham

YSpace Markham is physical incubator located in Downtown Markham supporting **technology and food & beverage** start-up ventures primarily.

ySpace Georgina

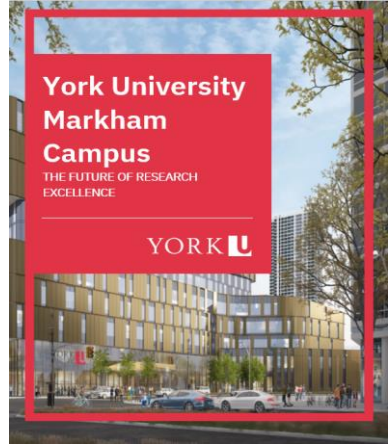
YSpace Gerorgina will be a **sector agnostic** physical incubator, making entrepreneurship support and space available to the northern York Region.

ySpace Vaughan

APPROVED IN PRINCIPLE

YSpace Vaughan would be a physical incubator, located in the Vaughan Metropolitan Centre with a focus on **Smart Cities**.

Ongoing projects



- **Markham Campus-** Research Clusters in AI & Society, FinTech, Digital Cultures, as well as 4 Ontario Research Chairs in Public Policy: leading critical policy research that addresses broader issues of ethics, governance, and public policy.
- **VHCP/ research collaborations-** establish potential collaboration in the areas of Allied Health and Nursing as well as Advancing Health Informatics, health intelligence, population analytics etc.
- **Canada First Research Excellence Fund (CFREF)**– submitted *Connected Minds: Neural & Machine Systems for a Healthy, Just Society* with a request of \$106M, with a \$126M of University matching funds- growing out of our successful VISTA grant.
- **YSpace expansion-** continuing to expand physical presence of Yspace in York Region, as well as establishing new programming
- **New ORUs** as transdisciplinary research centres/ institutes as incubators of interdisciplinary scholarship, research & action
 - Institute for Technoscience & Society
 - One WATER
 - Centre for Artificial Intelligence & Society
 - Centre for Integrative and Applied Neuroscience
 - York Emergency Mitigation, Engagement, Response and Governance (Y-EMERGE)



Ongoing projects

- Continue to foster existing and strategic clusters of research: 2nd Edition of the Catalyzing Interdisciplinary Research Clusters (CIRC) grants in strategic areas- 18 full proposals were submitted end of July 2022
- **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.
- **YRC program**- internal counterpart for the national Canada Research Chairs (CRC) program and recognizes outstanding researchers at York. VPRI continues to add new York Research Chairs annually.
- Working to develop **York's internationalization strategy** particularly with respect to research partnerships with international partners. Fostering more international research partnerships and funding opportunities
- **Digitization:**
 - 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 an anonymized manner.
 - DocuSign- extending contract, ORS checklist consultation with faculty on improvements, adding in attachments
 - Invest in an updated online system where all processes, documents, certificates can be tracked by ORE
 - Renew ORCID adaptation efforts: Ensure researchers receive correct attribution for their research outputs
- **Research Service Excellence Transformation**- creating efficient research services and support. Working with NOUS to determine which can be accomplished in VPRI