

York University

PLAN FOR THE INTENSIFICATION AND ENHANCEMENT OF RESEARCH (PIER)

HIGHLIGHTS

York University's Plan for the Intensification and Enhancement of Research (PIER) offers recommendations to strengthen York University's research enterprise across five thematic areas, and is informed by the York University Strategic Research Plan (2013-2018).

The development of PIER occurred in conjunction with the Institutional Integrated Planning process and was guided by a Working Group representative of the broader York community, which met regularly, and input received through extensive consultations across the University, including faculty, staff, students and postdoctoral fellows, beginning in the fall 2015 and concluding in early 2016.

PIER Recommendations:

Growing a Culture of Scholarly Inquiry

1. Create opportunities and spaces for interactive research engagement that foster collaboration and interdisciplinarity.
 - Review intra- and inter-Faculty research communications to increase exposure and promotion of research across units and Faculties;
 - Promote collegial discussions of research focused on enhancing research engagement, collaboration, within the University, regionally, nationally and internationally.
 - Faculties to review the spaces available for fostering research interactions within a community that is dedicated to growing a strong research culture.
2. Work Together to Build Research Engagement
 - Develop local initiatives to enhance research achievement and monitor their impact;
3. Incorporate research into all aspects of York's collective planning culture
 - Build an equal profile for research engagement, ambitions and support across Faculties, units and programs, alongside teaching program delivery and service through enhancing consideration of research in our academic planning culture.
4. Promote and capture a multiplicity of research outputs with an emphasis on impact.
 - Broaden recognition and encourage non-traditional research outputs;
 - Promote expansion of traditional outputs in ways that can enhance overall scholarly achievement;
 - Mentor and support researchers in aiming for high impact for their research outputs
5. Build research intensity into the hiring, tenure and promotion processes of regular full-time faculty.
 - Complement planning to include increased emphasis on alignment of hires with research objectives of the hiring units and Faculties
 - Hiring units to develop and refer to research achievement guides that summarize the historical average level of research, scholarship and associated creative activity achievement of the unit for new hires, and at the time of pre-candidacy review and tenure

Investing In & Promoting People

6. Improve the effectiveness of research time within workloads
 - Hold collegial academic discussion within units and programs to identify flexibilities to encourage equitable distribution of workloads;
 - Work to enhance contributions of part-time and active retired faculty to the overall academic success of the unit, program or area of focus;

- Faculties to review their collegial governance and service structures and practices to increase efficiency of service engagement and enhance the time available for faculty to engage in research.
7. Position faculty for research success
 - Clear identification of research expectations, infrastructure and supports available to new faculty hires; close mentorship of faculty at all career stages;
 - Enable, encourage, include and recognize the contributions of retired faculty who remain active researchers and mentors.
 - Overcome competitive historical tensions between ORUs and Faculties and Units.
 8. Invest in faculty through the development of research chairs and professorships.
 - Promote high visibility for research chair and professorship opportunities across the university in the upcoming fund-raising campaign;
 - Continue expansion of York Research Chairs program where finances warrant;
 - Increase emphasis on nomination of faculty for competitive research chairs and professorships offered through national and international funding organizations, including partnership opportunities such as the NSERC Industrial Research Chairs program.
 9. Increase and strengthen York's thesis-based graduate population and make York a destination of choice for postdoctoral training.
 - graduate programs to develop plans to collectively enable York to exceed domestic graduate student targets and grow its international cohort;
 - Increase outreach and efficiency of internal processes to ensure competitive student recruitment; simplify graduate student packages;
 - Promote and support external scholarships and awards for graduate students and post-doctoral fellows
 - enhance administrative and professional development supports for graduate students and post-doctoral fellows;
 - encourage maximum use of faculty external research grant/award funding to support graduate students and fellows;
 - Double the cohort of post-doctoral fellows within five years.
 10. Grow undergraduate participation in research
 - Make acquisition of research experience a component of all undergraduate programs; increase the number of research and research internship opportunities for undergraduates.
 - Develop a Dean's award for undergraduate research excellence

Supporting Research Growth & Development

11. Develop and employ general and specific measures to monitor research progress.
 - Draw on a variety of classic and novel measures of knowledge production to fully capture and promote the scope of research, scholarship and associated creative activity occurring at York University.
12. Promote open access to Research
 - Develop transparent open access publishing and research data management policies that are inclusive and reflect core values of the University and promote best practices.
 - Continue to growth of open access publishing at York including the introduction of eBook publishing

- York to show leadership in the development of the Ontario academic publishing initiative with the goal of providing physical press access for York.
13. Strengthen support of research program development and implementation.
 - Invest in Institutional, Faculty-based and local research administrative supports to assist researchers in identifying research funding opportunities and develop applications, including strong budgets and compelling support materials.
 - Streamline research application development bureaucracy and monitor service level expectations
 - Faculties, units and programs to prioritize discussion of collegial enhancement of research application mentorship and internal peer review.
 - Emphasize the rewarding of research engagement and success in the development and provision of direct research support mechanisms such as internal research funds and research-related teaching releases.
 - Development of transparent guidelines and reporting for the institutional use for unrestricted indirect costs of research.
 14. Enhance post-award support of research
 - Improve research administrative transactional efficiency and support levels increasing researcher satisfaction and engagement in external research funding programs
 - Improve efficiency for the finalization of large research grants
 - Increase the capture of direct to researcher research funding and research-directed donations to the University.
 - Maintain strong record or research reporting compliance.
 15. Enhance the development and timely implementation of world class physical research infrastructure
 - Develop targets for the implementation of research infrastructure and report regularly on service level expectations and achievements.
 16. Develop York's Innovation Landscape, supporting partnerships and translating research into action
 - Innovation York (IY) to coordinate research innovation development at York and provide a first point of contact for external engagement with York with respect to external research application, commercialization and entrepreneurship.
 - Build internal and external engagement of IY
 - Incorporate the Knowledge Mobilization group of ORS into IY to enhance the crossover of knowledge mobilization into entrepreneurship and commercial application.
 - Build the IY brand and the recognition of York as a Canadian Leader in capturing the economic value of university research and providing a creative and innovative experience for student innovators.

Leadership in Research and Research Advocacy

17. Promote and recognize external leadership by York faculty
 - Encourage and support support external research leadership by York faculty and leadership in research advocacy and policy development
 - Promote institutional leadership for Canada and Ontario in discussions of University research and innovation
18. Foster the internationalization of research
 - A feature on research within York's internationalization strategy

- Develop and support a concerted effort with respect to building international research partnerships, research funding relationships and international exchange programs for researchers and research trainees.
- Improve supports for applications to international research funding programs and enhance development and support of dual, double and similar degree programs with leading international institutions whose philosophies and expertise align well with our own.

19. Increase recognition through research awards for York faculty and trainees.

- Collegial discussion of the importance of awards is encouraged as is tracking and monitoring our success at all levels; Awards should be publicized and awardee's celebrated. In addition to the continued development of York's Annual public research awards celebrations, Faculties and units are encouraged to celebrate their award recipients and include awards in their measures of research achievement.

Building Research for the Future

20. Develop Markham as a research intensive campus.

- Ensure that development of the research possibilities of the new campus is prioritized alongside the development of academic programming, including collaborative and interactive research spaces associated with networking and entrepreneurship spaces.
- Fully exploit the opportunity to re-imagine the relationship between campus, entrepreneurship and social and technological commercialization to maximize the potential for transferring ideas into action.
- Prioritize integration of and support for graduate students and postdoctoral fellows *in situ* at the new campus.

21. Research as a driver and enabler for future York initiatives.

- Support long-term ongoing development and growth of research activities and infrastructure at a level commensurate with other research intensive universities
- Continue to build support towards an eventual Medical School for York University.

Responding to PIER

The PIER consultation process affirmed that our collective goals for research intensification require a strong, collegially driven response. Thus each academic unit, program or area of focus is challenged to integrate a response to the PIER recommendations into their collegial academic planning documents and planning submissions to their Deans, or in the case of ORUs, to their boards.

- Responses should include a description of initiatives planned and the processes employed to develop the initiatives, as well as the identification of measures to be used to track overall progress towards research intensification as well as specific initiatives. Similarly, administrative divisions and units within divisions, should look to relevant sections of PIER and provide focused responses.
- Deans should respond to the local initiatives proposed and roll them up into Faculty plans, including their integrated resource plans, academic plans, and financial plans, as well as in their annual reporting to the Provost and the Academic Policy, Planning and Research committee. This will embed PIER ambitions within the operational and academic fiber of the University.
- Central and service units are called upon to respond to PIER in areas where recommendations are relevant and roll up the responses into Divisional IRPs and other operational plans.
- PIER requires building support up from the level of the individual unit, program, area of focus and ORU; as such its success depends on appropriate investments in time and resources at all levels of the university.

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EXECUTIVE SUMMARY

The York University Strategic Research Plan (Building on Strength 2013-2018) articulates a high level vision for the development of research, scholarship and related creative activity at York University. The plan focuses on the advancement of six themes of recognized strength and five interdisciplinary areas of opportunity where York is particularly well-positioned to leverage research excellence in building our internationally recognized research leadership. Realizing this ambitious vision is dependent on a strong commitment to research by the entire University community - its faculty, students, postdoctoral fellows, and staff, and involves practical investments as well as cultural change.

This York University **Plan for the Intensification and Enhancement of Research (PIER)** serves as a companion to the Strategic Research Plan and was developed in conjunction with the Institutional Integrated Research Planning (IIRP)¹ process designed to guide and align local plans with institutional objectives. It has been developed collegially, based on broad consultation across the York community. PIER articulates an operational framework for research intensification that will form the basis for strengthening York's research profile through the collegial development of practical commitments to enhance the culture of research at York, building an intensity of engagement and achievement that provides a pathway to fully realize the academic potential of York espoused in the University's academic and strategic research plans. PIER outlines an integrated approach to strengthening all aspects of York University's research enterprise to enable enhanced accomplishment in research, scholarship and related creative activities and broader engagement and participation across the University.

The recommendations contained in PIER cluster into the following five thematic categories:

- Growing a Culture of Scholarly Inquiry
- Investing in & Promoting People
- Supporting Research Growth & Development
- Leadership in Research & Research Advocacy
- Building Research for the Future

The proposed actions and lines of accountability associated with each recommendation are intended to challenge and engage the University community to develop local research intensification initiatives that will inform and guide progress towards our goal of intensifying research, scholarship and related creative activities across the institution. In most instances it is expected that PIER recommendations can be accomplished through changing and improving of practice and building cultural expectations supported through restructuring of support structures and activities in a manner that converges with other components of the IIRP. In some instances, achievement of PIER recommendations will require careful consideration of new strategic investments to ensure success. Notable throughout this document is the use of the words "should" and "must". This language reflects a conscious choice to focus on the implementation of recommendations, and specific actions arising from the consultative process elaborated upon in the plan's appendix.

¹ Research intensification was identified within the Institutional Integrated Resource Plan as one of six institutional initiatives to advance York's priorities, with PIER highlighted as a contributing outcome.

INTRODUCTION

Established 57 years ago as a small liberal arts college, York was created to foster new approaches to providing a broad, innovative education. Over the last several decades York has experienced exponential growth, and has flourished into a diverse and comprehensive research and teaching institution. Now the third largest university in Canada with 52,000 students and two campuses located in the heart of the Greater Toronto Area, York has achieved robust academic success and a strong international reputation. Complemented by a proud tradition of scholarship, and the pursuit of discovery and innovation, York's commitment to excellence as a comprehensive research intensive university reflects a rich diversity of perspectives and includes a strong sense of social responsibility that sets York apart.

In many disciplinary areas from fine arts, social sciences, humanities, French/English bilingual education, to business, law, health, engineering, science and environmental studies, York is highly recognized for the quality and impact of its work. Several of York's programs have gained notable recognition both nationally and internationally. For example, in the 2015-16 QS World University Rankings, York placed in the Top 100 for history, anthropology, geography and area studies, development studies, psychology and in the Top 150 for English language and literature, modern languages, sociology, statistics, philosophy, political science and accounting and finance. The Schulich School of Business ranks 19th in the world and 1st in Canada according to the annual global MBA survey conducted by CNN Expansion. At the same time York ranks between 301-350 in the Times Higher Education World University Rankings (THE), 441-450 in the QS World University Rankings for, and 410 overall in the CWTS Leiden International Ranking. In Canada, York's 2015 overall *Research Infosource* Ranking is 26st amongst Canadian Universities. Thus, while great depth of scholarship and international leadership exists at York, it would seem that the overall breadth of engagement must become more robust to fully realize our ambition to be recognized as a world-leading research intensive university.

Simple aggregate analysis of York University's research output, while not fully comprehensive,² affirms that, while the quality of research, scholarship and related creative activity is high, the volume and intensity of activity trail its impact according to conventional measures. York University's cohort of almost 1,400 full-time regular professors is the eighth largest in Canada, while York University's 6,000 graduate students rank eleventh. By contrast, analysis of the *Elsevier SciVal* database employed by several of the international rankings, including the THE and QS rankings, shows that, since 2010, York has ranked 19th in Canada for the total volume of publications (journal articles, books, book chapters, monographs, conference proceedings). The overall field-weighted citation impact of publications from York is at the national average, while the number of citations per publication trails the national average (6.5 to 7.3). Similarly, annual *Research Infosource* University rankings for 2015, which are based on analysis of the Web of Science Thompson Reuters *In Cites* publication database, place York 19th in total number of publications, but 31st in publication intensity (publications per regular full time faculty member). York University also ranked 21st for research funding, but 34th in research funding intensity.

² It is recognized that both widely-used databases, *SciVal* and *In Cites*, are incomplete and are much less adept at capturing books and book chapters that feature prominently in York's scholarly output. Although these deficiencies impact all institutions, the effect may be proportionally larger for York than most. This situation follows from the relative strength of humanities and social sciences research at York compared to other institutions and the relative weakness of these databases in capturing impact within these fields.

With a new University Academic Plan in 2016 and momentum building from implementation of the 2013 Strategic Research Plan, there is a continuing aspiration for the development and recognition of York as a leading research intensive university. Achieving this goal has never been more important as provincial budget constraints and an effort to “differentiate” universities according to strengths and areas of focus is poised to stratify Ontario Universities. For York to achieve its ambitions, it is essential that we intensify research so York can be recognized and supported as an internationally leading research intensive University.

This document, PIER, provides a comprehensive and inclusive framework for strengthening all aspects of York research, scholarship and related creative activities as well as research engagement with communities through knowledge translation and mobilization. Articulating collegial commitment to real aspirational growth in York University’s research achievements and scholarly outputs, PIER charts a pathway for York to continue its progress towards full recognition as a leading Canadian research University. As was stated early in the consultation process, PIER has been a conversation focused on “*how we can achieve more, not about how we can do more*”.

A COLLEGIALLY DEVELOPED PLAN BASED ON BROAD CONSULTATION

Defining characteristics of York University are its commitments to collegial engagement and governance, and academic freedom. Thus, the development of PIER was informed by broadly based consultation with the York University community, guided by an engaged working group whose members were drawn from throughout the University. The result is a plan that represents the collective effort of many, reflects a synthesis of the ideas that emerged during the consultations, and aims to shift the research paradigm at York. The intent of the plan is to provide a framework for ongoing collegial discussion across the university of ways to increase overall engagement in research, scholarship and related creative activity in a manner that supports academic excellence and enhances the reputation of York University, its Faculties and individual faculty members. At its core, PIER is an exercise to stimulate cultural change and cultural growth with respect to our research engagement as an institution and the articulation of our achievements.

The PIER consultation flowed through multiple points of engagement. Launched at an open forum, York faculty, students and staff were provided with numerous opportunities to explore, question and comment on PIER’s development, including through a series of workshops and electronic submissions through an interactive website. This website also provided continuous updates to the University community on the progress of the consultation process and the outcome of discussions. The PIER development team also met with Faculties, faculty members and research support staff in a number of different venues, reaching out to all areas of the University during the four month open consultation phase. Meetings to seek input from academic and administrative committees of the University were also held.

A second open forum provided participants with the opportunity to hear reflections on the many conversations that had occurred and to comment on and validate the structure and major components of PIER. Over the course of the winter, a draft plan was developed and shared with the community. Feedback on the draft informed the mature version of the plan which follows.

GENERAL OBSERVATIONS FROM THE CONSULTATION

Our conversations revealed that the York community universally perceives engagement and success in research, scholarship and related creative activity as fundamental and foundational to the academic reputation of the University and to making York an exciting, cutting edge place for our students. The York community is strongly committed to academic excellence. There was also broad agreement that research intensification is a key ingredient to York achieving its academic ambitions and that the status quo will not enable us to achieve our goals. At the same time the community stressed the need to work together to find new ways to articulate our significant accomplishments to increase the external appreciation of our existing scholarship in addition to our growth. The willingness of the community to engage thoughtfully in dialogue seeking positive change has been striking, as has been the enthusiasm for broadening research engagement and a commitment on the part of many to the development of appropriately ambitious objectives for research growth and development.

Research intensification was recognized as a fundamental exercise in cultural evolution for the University as we work towards broadening the level of engagement, participation and support for research, balancing our great existing depth in many areas with increased breadth. In the collegial environment that is York University, accomplishing cultural change must be primarily driven through bottom-up collegial engagement in the development of initiatives to enhance our research achievements. As such, active engagement of academic organizational units, departments, programs, clusters, and organized research units (ORUs), is seen as key to achieving the recognition we seek for our research, scholarship and related creative activities, with Faculty Deans having a key role in encouraging and overseeing engagement and progress made by units, programs, areas of focus and ORUs.

The consultations also revealed that it is presently difficult in many ways to articulate our success in research and to monitor the progress of our development and growth. Within the strong planning environment for which the University is known, the follow-up need to implement change and then positively assess, measure and monitor our progress, was acknowledged as key to growing, rewarding and publicizing our strengths and our achievements.

Overall, there was a strong consensus that with the ambition firmly in place, the time is right to lay the foundations and put specific and tangible commitments in place that will enable us to successfully progress towards our long term goals of being recognized as a Top 100 University Worldwide and a Top 10 University in Canada.

RECOMMENDATIONS

PIER provides a framework for the engagement of individuals, units and Faculties in growing the intensification of research, scholarship and related creative activity as mandated in the Institutional Integrated Resource Plan (IIRP). Importantly, the recommendations put forward in the plan are meant to build upon the basic supports that are provided to *all* researchers at York in support of their pursuit of research, scholarship and related creative activity.

The recommendations are varied, and cover academic, administrative and support needs. Thus while it is expected that all corners of the University will respond to many of the recommendations, some recommendations may be specifically relevant to more focused areas of the University.

As PIER is intended to provide an *operationally oriented framework*, the recommendations include discussion of the development of appropriate actions and suggest accountabilities and measures to monitor progress towards realizing objectives. Taking action to improve research intensification should be evident in Unit and Faculty planning documents, most notably in integrated resource plans.

Some of the response to PIER will be institutional and Faculty based. However for PIER to be successful most of the response needs to be local, with Faculty and institutional support role encouraging and tracking the response. The importance of local engagement and action was highlighted throughout the conversations around PIER.

The recommendations are clustered according to five broad areas:

- Growing a Culture of Scholarly Inquiry
- Investing In & Promoting People
- Supporting Research Growth & Development
- Leadership in Research & Research Advocacy
- Building Research for the Future

GROWING A CULTURE OF SCHOLARLY INQUIRY

Growing a culture of scholarly inquiry requires fostering an active research culture across the institution enabling an overarching focus on research, scholarship and related creative activity to permeate all aspects of the daily activities of the University. While York University already supports a vibrant and engaged research community, we heard that research often occurs separate from other activities and can be isolating for those involved. Further, consultation participants suggested that research did not always receive the prominence and priority of other academic activities, particularly at the local level within Units, programs and areas of focus.

1. CREATE OPPORTUNITIES AND SPACES TO PROMOTE INTERACTIVE RESEARCH ENGAGEMENT THAT FOSTER COLLABORATION AND INTERDISCIPLINARITY

Two important and recurring comments that emerged during the consultation were the desire of York researchers to have opportunities to learn more about the research happening at York across disciplines and the need for informal spaces where researchers (faculty and librarians, students, postdoctoral fellows, archivists, and staff) can gather and interact professionally and socially. This comment aligns with observation that York has the highest rate of single authored publications amongst comparator universities while trailing the national average in collaborative works, including international collaborations. While some of this distinction may arise from the concentrations of research in certain areas of scholarship at York University, the predominant feedback received was that York has lagged in

responding to the continuing broad trend towards more collaborative and interactive research. In the first instance, it is recommended that intra- and inter-Faculty research communications be reviewed with the goal of increasing the exposure given to research internally and promoting research exposure across units and Faculties. In the second instance it is recommended that collegial discussions of research development around the University emphasize enhancing collaborative research and research collaborations - within the University, regionally, nationally and internationally. Third, it is recommended that Faculties and Libraries review the spaces they have available for creative collisions and interactions within a community that is dedicated to growing a strong interdisciplinary research culture. Further, pan-campus research strength can be better supported via the democratization of access to resources that support new forms of scholarship. Centralized bodies on campus, such as the Libraries, may be well-positioned to provide the spaces and access with the proper support. As an institution we spend a great deal of effort to provide appropriate interactive student learning spaces and we should endeavour to provide similarly for researchers including students and postdoctoral fellows.

2. WORK TOGETHER TO BUILD RESEARCH ENGAGEMENT

Analysis of available data with respect to York's research outputs and research expenditures reveals a certain tenuousness in the connection between our ambitions for growing research to enhance our recognition as a research intensive university, and the recent growth in our scholarly activities and research funding. Within those scholarly outputs that we currently have the ability to readily measure and draw comparisons, total annual publications including journal articles, books, monographs and conference proceedings have been almost flat since 2010, reflecting the stability of our low thirties national ranking for publications per faculty member, 19th in total outputs and 8th in regular full time faculty numbers. With respect to the funding that enables research, research revenues have grown over the past five years at a rate that has modestly outpaced the Canadian average, but this growth has only moderately improved York's research funding per faculty member. Further, even as York's research funding has grown, the numbers of individual research funding applications and funded grants has been decreasing over the past five years.

Thus the continuing growth in York's visibility and profile over the past five years has been largely due to its success in larger scale strategic initiatives such as the SSHRC partnership program, the NSERC CREATE program and the CFI Innovation Fund and Ontario Research Fund, among others, and the scholarly outputs derived therefrom, while broader engagement seems to have been particularly challenged.

As a collegially governed institution with a collaboratively established ambition for research intensification, we look to our participatory processes for initiatives and ideas on how to grow the linkage between our ambitions and our achievements. The easy responses often focus on what others can do for us to enable our success. The more fundamental and salient response addressed in this recommendation, is what can we do locally within our units, programs and ORUs to enhance our scholarly engagement and achievements in building our research culture and propelling us towards realizing our full potential.

The role of local engagement in research intensification was discussed in earnest throughout the consultation. A strong consensus emerged that collegially developed initiatives focused on growing research engagement and achievement are key to realizing our broader scholarly ambitions. There was also a strong sentiment expressed that development of these initiatives, and tracking outcomes should be evidence based. At the same time, members of the collegium stressed the need to further refine and increase the base of evidence that is surveyed.

Therefore PIER challenges the community to build on our existing efforts to mentor and promote the development of research by taking these conversations seriously – to analyze the status quo and work together to develop local initiatives to take the next steps in enhancing research engagement and achievement, then to act on these initiatives and monitor their impact. For example, local conversations should include the objective of how to develop and support expectations for research funding participation that maximally engages and re-engages researchers in reversing the current decline in the pursuit of external research funding. This engagement should include graduate students and postdoctoral fellows as part of developing the collaborative dimensions of research, and reflect further on how grad success can be increased. They should also promote all forms of research outputs and address how the wide variety of outputs can be recognized and rewarded. Faculties and units have an essential role to play in promoting and facilitating these conversations, in facilitating resultant actions and in collating and reporting on their outcomes.

Connecting local initiatives, building a larger collective momentum, and reporting on progress flow naturally into the next recommendation of enhancing consideration for research across our collegial planning culture.

3. INCORPORATE RESEARCH INTO ALL ASPECTS OF YORK'S COLLECTIVE PLANNING CULTURE

Suggestions emerged during the consultations that strengthening the consideration of research, research needs, and research ambitions in all phases of our collective planning culture was an essential step in building a broader culture of research engagement across the University. Strengthening our culture means investing more effort in research planning and policy at all levels of the University. It means actively considering, prioritizing and supporting initiatives for enhancing and broadening the ability of researchers, staff, students and postdoctoral fellows to successfully engage in research opportunities. While ORUs provide a strong home for the support of focused research activities, deeper inclusive and strategic discussions of research and research engagement should be promoted across the university. Across Faculties, at the unit, program or area of focus level, research engagement, ambitions and support should be given attention and profile equal to considerations of teaching program delivery and service. It is also important that ORUs not be confined in silos but be included in the broader conversations.

Given the nature of PIER, it will be particularly important to ensure that efforts to increase research engagement are reflected in integrated resource plans in addition to strategic plans. Further, provisions for tracking and reporting on activities and accomplishments are essential to understanding our progress and publicizing our achievements. In part, this aligns with provincial reporting expectations and participation in national and international comparators of Universities, but it equally serves the internal purpose of supporting ongoing collegial dialogue with respect to research, scholarship and related creative activities across the University.

4. Promote and capture a multiplicity of research outputs with an emphasis on impact

Traditional research outputs focus on publications such as books, book chapters, monographs, journal articles and conference proceedings, yet research, scholarship and creative activity is articulated in multiple forms across multiple media, particularly at an interdisciplinary university like York. Many commented during the conversations that York still uses a traditional lens with respect to the valuation of research outputs. In some disciplines the book is viewed as the highest form of scholarly achievement, whereas in others it is the peer reviewed journal article. In some areas, single-authorship continues to hold the greatest esteem. These traditional values continue to be largely reflected in our tenure and promotion criteria, such that other forms of creative outputs are often regarded as less valuable. Here, units are encouraged to broaden their recognition of research outputs beyond the traditional forms to account fully for the overall research achievement of the collegium. Examples include, but are not limited to web-based and social media driven forms of academic outputs, open access publications, research creation, and promoting translational research outputs in the social sphere as well as in the more traditional technology transfer domain through patent filings and research commercialization. Units are also encouraged to expand their support for more traditional outputs in ways that can enhance overall scholarly achievement, such as leveraging the achievement from books through the publication of accompanying journal articles (or vice versa) and the encouragement of collaborative engagements that can increase the volume of impactful multi-authored research outputs. This is not meant to diminish traditional scholarship, which must continue to be supported and celebrated, particularly in fields where traditional modes of disseminating individual scholarship remains the norm, but rather to build on and expand upon our recognition of scholarship in all its forms.

While professorial stream faculty, research based graduate students and postdoctoral fellows have a primary expectation for research outputs, all faculty and staff are encouraged to participate in the creative process, including the scholarship of pedagogy, which is an expectation for alternate stream faculty. In addition, the scholarship of engagement can help drive the translation of research into socio-economic impacts and support collaborations with partners from the public, private and non-profit sectors.

A related and very significant concern raised during consultations that particularly affected early career researchers was an emphasis in some quarters on numbers of outputs rather than impacts, such that researchers “settle” for publications in lower tier venues due to concern that the additional time and effort needed to achieve acceptance in top ranking venues of the highest impact would negatively influence their ability to achieve tenure and promotion. All researchers at York should be mentored and supported to push their creativity and innovativeness to the limits of their abilities, and thus be supported in achieving the highest possible impact venue for the public display of their research.

5. BUILD RESEARCH INTENSITY INTO THE HIRING, TENURE AND PROMOTION OF REGULAR FULL-TIME FACULTY

There was a strong sentiment in the discussion that the recruitment of new professorial stream faculty must play a leading role in building the research culture and research intensity at York. However, it has been pointed out that hiring is not always fully aligned with research needs, and research expectations for hiring vary. Thus complement planning should increase the attention paid to the alignment of all professorial stream hires with research needs and the research objectives of the hiring unit and Faculty. These considerations should be integral to complement planning submissions, and reports from hiring

committees should include a section on how candidates align with the research priorities of the hiring unit, Faculty and University Strategic Research Plan.

Consultations also emphasized the need to seize the opportunity to collegially increase our focus on research engagement and achievement through hiring and promotion, such that York should seek to hire new professorial stream faculty whose research accomplishments at least meet the average level of achievement of immediate past hires. Thus hiring units are urged to review hires over an appropriate time window (5-10 years) to determine the average level of research achievements at the time of hire. For smaller units, conducting a survey across related units may be necessary. Updated regularly, this retrospective view should be used to inform the collegial hiring process going forward and should be discussed in committee hiring recommendations to the Dean. The attractiveness of this initiative is that regardless of the starting level of research engagement within a hiring unit, over time the average research achievement of faculty at the time of hire will be increased. Similarly, with appropriate phase in, consideration of the average level of research achievement should also be included in pre-candidacy review and in tenure and promotion considerations, with the latter being particularly timely as units work to review tenure and promotion standards. This collegial engagement in promoting research achievement offers the additional advantage of transparency and openness in providing guidance in these processes and can inform the evolution of York's policies and procedures over time.

INVESTING IN & PROMOTING PEOPLE

Developing an engaged research community depends on investing in and supporting outstanding talent at all levels, from senior professors to enthusiastic undergraduate students. Research intensive universities recognize that a highly talented and motivated talent pool is a primary driver of research, scholarship and related creative activity. Located in the Greater Toronto Area in the centre of the largest concentration of universities and colleges in Canada, York University is at the heart of the destination of choice for academic talent in Canada and is a magnet for students and trainees. At the same time, competition for the best national and international talent is intense. To be successful in achieving our research intensification goals, we must provide a highly competitive environment for attracting and retaining top researchers and provide them with the supports necessary to fully realize their potential.

6. IMPROVE THE EFFECTIVENESS OF RESEARCH TIME WITHIN WORKLOADS

A consistent theme of the consultations was the significant barrier that workloads at York present to successful engagement in research, scholarship and associated creative activity. Teaching and service expectations do vary considerably around the University and it is recognized that these expectations affect the time available for engagement in research. Acknowledging that overall teaching expectations are an issue necessarily left to collective agreements, many respondents described the challenges to successful research engagement that arise from the proscriptive and rigid ways in which workloads are constructed at York and the lack of flexibility in the assembly of workloads to accommodate specific demands of research. In particular, while teaching expectations for a program tend to be a consistent quantity, the time needed for research engagement will ebb and flow based on individual projects, career stage and other tangible and intangible issues and thus one consideration would be to adjust individual teaching loads accordingly. Many also highlighted the high service load that comes with collegial governance at York as an additional barrier to research achievement and that this can be particularly acute in smaller units and programs. Solutions were seen to begin at the unit level and to overlap with the need for collegial conversation to encourage research engagement (Recommendation 3).

A key point highlighted during the consultations is that a unit or program's overall academic reputation results from the collegial sum of the individual contributions of its membership. Furthermore, in a collegium, there is an expectation for a significant, even equal, contribution by all members towards this reputation. Traditionally this commitment has manifested itself through the approximately equal allocation of time for research, teaching and service activities within a unit. Increasingly, considerations of equity in workload development and flexibility to accommodate particular needs for teaching and research are being considered in many areas. Thus research chairs (endowed or otherwise) are a long-standing means through which additional time for research can be achieved, while similarly teaching chairs and alternate stream appointments provide the opportunity for a more focused dedication to pedagogy.

We heard strong support for a recommendation for collegial academic discussion within units and programs as a way to identify flexibility within the system to encourage equitable distribution of workloads. In some instances it is recognized that equal division of time may remain the most appropriate means for workload distribution. In many others, however, there exists the opportunity to engage in discussion of how to best structure and provide flexibility in workloads in a manner that recognizes the potential for asymmetric yet equal contributions to collegial academic success. Such discussions must necessarily be evidence based and must consider balancing opportunities for research engagement with recognition of ongoing achievement. Additionally, we heard that these conversations should include consideration of how part-time faculty, and retired but still-active faculty, can increase their contributions to the overall academic success of the unit, program or area of focus. Units should be supported in these discussions by their Deans and results should be reflected over time in local research intensification initiatives.

Second, respondents described a collegial academic governance and service structure at York that is extremely time consuming, inefficient and which presents a strong barrier to research intensification. Thus it is recommended that Faculties lead a review of their collegial governance and service structure and practices with a view to increasing the efficiency of service engagement to increase the time available for faculty to engage in research. Some of these efficiencies may come through ongoing discussions of program rationalization, others will emerge from new initiatives. While specific efficiencies created will vary, a base target of a 20% reduction in service time would seem a reasonable starting point for discussion.

7. POSITION FACULTY AND LONG TERM RESEARCH EMPLOYEES FOR SUCCESS

A commitment to research intensification means a commitment to researcher development and engagement at all career stages, including for soft-funded research employees and professorial stream faculty. This commitment begins with supporting the early career development of new hires and extends through encouraging and supporting the continuing productive engagement of retired and emeritus faculty. Indeed, providing formal mentorship should be promoted as a base expectation for all faculty within their workload and we should recognize and celebrate our most dedicated mentors.

Faculty taking up their first academic position are in particular need of support. Research intensive universities hire new professorial stream faculty with a view to enabling their early research success, followed by the development of a strong teaching portfolio and subsequent engagement in service activities. Letters of offer should clearly detail research expectations and the infrastructure and supports that will be available, as well as the opportunities that the new faculty will be expected to take advantage

of. They should also identify the mentoring supports that will be available to the new faculty member. Negotiations should include expectations that preparations for the initiation of the new faculty member's research program will begin as soon as the formal commitment to come to York is made. From the unit/Faculty side, this includes developing appropriate space and other required research infrastructure, and clarifying timelines, mentoring expectations and support for the development of research infrastructure or research operation funding proposals. To promote initial research success, Faculties should review their current teaching and service expectations for new hires, to ensure that they can fully concentrate on implementing their research programs before taking on significant additional academic responsibilities. Close mentoring and feedback should be provided through pre-candidacy and leading up to tenure. New hires should be welcomed as new members of the York University community, with all members of the community having a stake in their success. For all faculty, but new faculty in particular, mentorship should include understanding of and access to the supports needed to manage the stresses of academic life.

It is equally important that mentoring and support continue to be provided as faculty transition through mid-career. This includes a critically engaging research environment and collegial mentoring and support from senior faculty members and faculty leaders. They should be appreciated for their successes and encouraged to maintain high levels of research engagement. They should also be encouraged to develop their research leadership skills, moving from mentee to mentor, and playing a leading role in strategic research development. We must be particularly attentive in our efforts to maintain and grow the research capacity of mid-career academics confronting increasing competition for diminishing resources and the pull of academic engagement beyond research.

Senior researchers show leadership by example and through mentoring of their colleagues and trainees and also should continue to be supported in their accomplishments. Special effort is needed for both mid-career and senior researchers to ensure the continuing development of their research programs, given the fiercely competitive environment and strong challenges to the longevity of research.

Many of York's researchers remain very active following retirement from other aspects of academic life. There was a strong sentiment expressed that those with the drive to maintain active and engaged research programs are to be encouraged and supported in their research funding applications and research programs as they continue to make valuable contributions to the University and the advancement of knowledge. Those with a wealth of knowledge and experience, and often the time and interest to continue making significant contributions, should be encouraged and enabled to participate broadly in the research life of the University, including in the development of collaborative and strategic initiatives as well as in graduate programs, mentoring and training as appropriate.

At all career stages, faculty should be encouraged to participate in their broader research communities, through engagement in peer review for funding applications and research outputs, engaging in editorial service and in leadership of symposia and conference activities. Further these activities should be recognized as an important component of workload expectations and in building the overall academic reputation of the university.

In addition to faculty, the York community includes many long term research employees, and new researchers who are transitioning between research training and a long term career path. This community includes research associates, technical support staff, research coordinators and research facilities managers. It is important that these researchers also be nurtured in the development of their

careers and have the opportunity to grow their interest and participation in the long term research aspirations of the University.

At all career stages, affiliation with ORUs provide faculty with exposure to interdisciplinarity within an area of research, opening up opportunities and creating new avenues for the support and broadening of research programs. Further, ORUs have the potential to provide focused research supports that are an important resource to foster intensive research development. At the same time, in order to maximize their value, consultations highlighted a clear imperative to overcome competitive historical tensions between ORUs and Faculties and units. ORUs and Faculties and units need to take increasing advantage of current mechanisms for synergy, such as ORU boards and Faculty-based graduate programming and work collaboratively to develop new mechanisms for interaction and support. Here, implementation of the new University budget model will provide an opportunity for substantive conversation around ways and means to increase the linkage between ORUs and their sponsoring Faculties.

8. INVEST IN FACULTY THROUGH THE DEVELOPMENT OF RESEARCH CHAIRS AND PROFESSORSHIPS

A hallmark of research intensive university environments is a proliferation of research chairs and professorships that highlight, celebrate and encourage the research achievements of its faculty. Research chairs and professorships reflect on the research achievement of an organization and confer expectations of research leadership upon the chair holders and should enhance academic freedom by increasing the ability to focus on research activities. York University has made encouraging progress in growing its proportion of Canada Research Chairs, is striving to win a Canada Excellence Research Chair, and has recently launched a complementary internal research chairs program. York's external community of supporters has also contributed to the development of a number of endowed and term chairs and professorships in support of research at York, most recently for example as part of the creation of the Dahdaleh Global Health Research Institute.

While recent progress is encouraging, York University still trails most acknowledged research intensive Canadian universities in the proportion of research chairs and professorships available to its faculty. To encourage the continuing growth in the development and recognition of research at York, it is recommended that increased effort be invested in the development of a suite of research chairs and professorships to support our highest achieving researchers and to facilitate the recruitment of highly proficient, research engaged, new faculty. Strategies to work towards this goal include ensuring high visibility for research chair and professorship opportunities across the university in the upcoming fundraising campaign, continuing the growth of the York Research Chairs program through accelerated development of Faculty-based York Research Chairs where finances warrant, and increasing the emphasis we place on nomination of our faculty for competitive research chairs and professorships offered through national and international funding organizations, including partnership opportunities such as those provided through the NSERC Industrial Research Chairs program.

Faculties in particular are encouraged to develop targets and prioritize fund-raising for research chairs and professorships, while being cognizant of the need to preserve academic freedom and collegial governance over chairs as per university policies. These efforts to build recognition for our research and researchers also may be expected to contribute to building York's success in large scale research programming initiatives.

9. INCREASE AND STRENGTHEN YORK'S RESEARCH BASED GRADUATE POPULATION AND MAKE YORK A DESTINATION OF CHOICE FOR POSTDOCTORAL TRAINING

A vibrant and engaged graduate student and postdoctoral fellow community is recognized as the lifeblood of research for a university. With over 6,000 graduate students, including approximately 1,200 Ph.D. students, York University currently ranks eleventh in Canada for graduate education. However, with only approximately 190 postdoctoral fellows, York lags comparator research intensive Universities.

Many of York's graduate students and postdoctoral fellows are motivated high-achievers, recognized for their scholarship through honors and awards including a very strong representation of Vanier and Canada Graduate Scholarships, consistent overachievement in Banting Fellowships and a strong representation in MITACs and Ontario Centres of Excellence awards which must continue to grow. Aligned with its reputation for social justice and commitment to student access, York provides highly competitive minimum guarantees for graduate student support, an engaged collaborative environment for training and an increasing suite of professional development activities. By contrast, we heard that postdoctoral fellows have in particular experienced challenges with being recognized at the university and having access to professional development opportunities and a chance to develop their teaching skills. The creation of a postdoctoral coordinator is a welcome sign of York's willingness to address this gap.

A number of challenges have been identified for our graduate students and for graduate programs. Notable observations brought forward include a need to enhance the recognition we provide for graduate student achievement and a need to simplify support packages including developing mechanisms to encourage graduate students to seek external funding and celebrate and reward their success in doing so. Challenges experienced around the University to achieving our full potential for graduate student recruitment and training include slow and passive admission policies; creating sufficient numbers of funded positions to accommodate interest; challenges in achieving timely completion of graduate degrees and building a funding base of external research grants to support graduate student numbers beyond the limits dictated by internal funding. We heard that there are particular challenges with respect to the recruitment and training of foreign graduate students, largely associated with increased costs, such that York's international graduate student cohort trails that of other research intensive Canadian Universities. As a result, graduate programs turn away top caliber international graduate students while we fall short of our targets for domestic graduate students.

Postdoctoral fellows have faced a confusing landscape at York, with a number of different fellow categories, a lack of recognition and a lack of an identified "home" within the University, with international postdoctoral fellows experiencing particular challenges. Recently, York, through the Faculty of Graduate Studies, has made significant strides in recognizing its postdoctoral fellow population and providing access to research, personal and professional development supports needed to mentor their development. It will be important going forward to be mindful of and continue working on regularizing the ways we host both externally and internally funded postdocs to make York an optimal and desirable place to hold a postdoctoral fellowship. Continuing consultations with the administrative and research community will be important to ensure inclusive treatment of all postdoctoral fellows and resources should be developed for York faculty members regarding best practices for postdoctoral supervision.

York is encouraged to promote the recognition of postdoctoral fellows and their achievements internally and through their nomination for external awards and to record and track their career paths upon leaving York in the same way we monitor the progress of our graduates.

Faculties and graduate programs are challenged to attract and support a strong graduate student cohort to timely degree completion and movement along the career development path. This includes increasing outreach and the efficiency of internal processes to improve the competitiveness and aggressiveness with which York pursues top students. Plans for simplifying graduate student support packages and providing inducements for securing external graduate support funding are under development. Similarly, the Faculty of Graduate Studies is enhancing the administrative and professional development supports available to graduate students and postdoctoral fellows. Graduate student and postdoctoral fellow support are eligible expenses on most external research grants and awards. Units and Faculties should encourage their colleagues to take maximum advantage of such opportunities to pursue funding to support graduate students and fellows. Similarly, supervisors and mentors should strongly encourage their students to pursue external scholarship and fellowship awards, which strengthen their curricula vitae and provide enhanced levels of financial supports. All graduate programs should develop recruitment plans through which they will collectively enable York to exceed its domestic graduate student targets and grow its international cohort. At the individual level, this includes taking maximum advantage of the possibilities for funding graduate students in the context of Tri-Council and other research funding programs.

Graduate programs should maximally encourage their students to participate fully within the research community, interact with colleagues and professors and become more active voices in the research culture of the University. The graduate experience must build beyond the thesis project to fully explore the richness of the research landscape and professional opportunities that lie ahead.

For postdoctoral fellows, York University should specifically target doubling the existing cohort within the next five years and invest in the resources and supports that will be needed to accomplish that goal, including a policy structure, a financial structure, and a physical structure that will facilitate success, support recruitment (visas and immigration, housing assistance, child care, etc.) and provide career development supports. Of particular importance will be to continue to emphasize and support external fellowship applications. Opportunities for postdoctoral support should also feature in our fundraising. As was clearly articulated in the conversations, postdoctoral fellows have needs that are different from those of graduate students, more closely aligned with the needs of junior faculty. Realizing these goals requires joint effort between discipline-based Faculties and the Faculty of Graduate Studies, particularly in relation to staffing and supports for postdoctoral expansion.

10. GROW UNDERGRADUATE PARTICIPATION IN RESEARCH

Engagement in research, scholarship and related creative activities are exercises in critical thinking. . A substantial pedagogical effect of universities' engagement in research is creating an exciting, innovative environment for the students. Research is inherently an experiential learning experience, with opportunities to apply and test ideas and hypotheses and/or engage in qualitative study. As we are committed at York to providing the best possible undergraduate education, it follows directly that we must offer the best possible exposure to research for undergraduates.

We must encourage maximum uptake of externally funded undergraduate opportunities, include MITACs awards and NSERC Undergraduate Student Research Awards (USRA). Internally, the *Research at York* (RAY) program was created to enhance both the research culture of the University and the undergraduate student academic experience. Through the RAY program, eligible undergraduate students have the opportunity to participate in research projects with faculty members and/or fellow students, while receiving compensation at a competitive rate. Building curiosity and excitement about research in the undergraduate community will help build research into the fabric of everyday life of the university and will

contribute directly to the vibrancy of the graduate student cohort. Consequently, all of York's undergraduate programs should work to offer a research experience. We should also work together to increase the number of funded summer research opportunities for undergraduates, where they can take advantage of more concentrated learning opportunities. We all must also work together to build engagement and participation amongst faculty in supervising undergraduate research experiences and enhance the expectation for research experiences within experiential learning opportunities.

The research accomplishments of our undergraduates are to be celebrated. Recent collaborative initiatives such as York's Undergraduate Research Fair and the launch of its complementary student journal, *Revue YOUR Review*, are encouraging, but we should not stop there in looking for ways to engage and develop research interests. A number of Faculties, as well as Innovation York, have initiated entrepreneurship and innovation opportunities and these also should continue their expansion and their coordination across campus. Access to cutting-edge research, entrepreneurship and innovation opportunities should become one of the reasons that top students are drawn to York University as undergraduates.

SUPPORTING RESEARCH GROWTH & DEVELOPMENT

Successful research is enabled by first class research infrastructure and a service-oriented, knowledgeable and efficient research support network that provides assistance, advice and administrative due diligence to researchers at all career stages. Building and resourcing needed infrastructure and the supporting network is at the forefront of administrative considerations for research intensive Universities. Providing adequate research administrative supports and well-resourced mechanisms that encourage and provide opportunity for external research success is the foundation of successful university research. However, internal feedback continues to indicate that York's research administrative processes can be cumbersome and frustrating for the user to navigate. Further, many of York's research support programs, including internal grant review, mentoring, start up, and seed funding opportunities are seen to lag the efforts of our competitors in supporting research.

11. Develop and employ general and specific measures to monitor research progress

Research intensive universities are distinguished by a focus on research activity and the broad participation of faculty, students and fellows. They actively seek and promote visibility for their research accomplishments and use measures to monitor their standing in comparison to their peer groups. York is an international leader in the diversity of its research, scholarship and related creative activity and in pushing the limits of conventional thinking. It is also at the forefront of a new age of academic achievement that is expanding the outputs of research beyond traditional academic journals to include practical outcomes that directly impact communities and populations.

We heard that one of the challenges to intensifying research at York is the ability to understand how we are doing, measuring our progress and articulating our success. There was a clear consensus in the conversations that collating our research outputs is very important and that the measures that we use must be externally comparable in order to be useful to understanding our progress and standing as a research intensive institution. The caution offered was that York must go beyond traditional measures in monitoring our achievements as their capture of York's achievements can be poor. Indeed, York should become a leader in developing new and more effective measures that will better capture our achievements and will be taken up by the external community.

It was also acknowledged that there is an increasing trend for governments to use measures to track the effectiveness of its investments and to monitor differentiation within the post-secondary education system, and thus it is in our interest to make the best possible presentation for York in these exercises. In Ontario this has manifested itself through strategic mandate agreements and increasing movement towards the differentiation of universities by their specific characteristics, including research intensity. National and international rankings of universities also depend heavily on increasingly sophisticated measures of research accomplishment.

At the same time, it was recognized that it is challenging for an institution as large and diverse as York, and one that values going against convention, to develop simple sets of measures that will fully capture the scope of the research, scholarship and associated creative activity around the University. Further, classic measures of publications and research funding do a poor job of capturing broader forms of scholarly outputs whose contribution to overall scholarship at the university is also important to understand. Measures also need to mean something locally, or their uptake and usefulness to support local initiatives will be minimal.

Lastly, it was strongly communicated that, in order to be helpful to and embraced by the community, measures must be developed and employed in a positive manner, to point the road to success and monitor progress.

In the first instance, York must continue and increase its investment in making data on research outputs available and accessible to the York community. The recent leadership shown by Libraries in this area is acknowledged and encouraged, as are the efforts of the Institute for Social Research (ISR) with respect to increasing our understanding of the potential and limitations of existing databases and how the shortcomings can be overcome. In addition to maintaining current database subscriptions, York should actively investigate expanding database and software access, in particular to allow capture and analysis of forms of research outputs that are not currently accessible. For these resources to be maximally useful, York must also invest in the data analysis capacity to serve the community. To date, data analysis, service and training has been provided by Libraries, ISR, the VPRI and the Office of Institutional Program Analysis (OIPA). However, Faculties, units and ORUs are urged to invest directly in developing the necessary in-house expertise to assess, utilize and contribute to accessible data in order to enable more effective and comprehensive data capture and querying of their local strengths. A commitment to depositing and archiving research outputs in available repositories, such as YorkSpace or the York University Digital Library, could assist with this analysis and lessen the institution's reliance on analytical tools such as *SciVal* which lack a full coverage of academic disciplines.

In the second instance, York must work to improve the representation of its research outputs in the private databases that are increasingly relied on as aggregators of research outputs and measurers of impact. York, in building on its research data analysis capacity, also must develop and maintain ongoing dialogue with research output aggregators to ensure the capture of York research outputs in the databases. Preliminary conversations have shown willingness for dialogue and examples of where the breadth of data captured can be successfully expanded. This dialogue is important to ensure the appropriate capture of books and book chapters, monographs, publications in languages other than English, and for publications in unconventional and broadly interdisciplinary venues and media of publication and in areas that do not presently receive adequate coverage.

Third, York should actively develop mechanisms for tracking and recognize alternative metrics of scholarly productivity. This includes impacts through social media and web-based scholarly outputs.

Development of data in the form of externally comparable measures will help researchers understand the relative standing of their research accomplishments and provide guidance in their development of research plans and objectives. The measures developed should also be employed as a guide within the hiring process and to inform evaluations of pre-candidacy, tenure and promotion. The increased incorporation and reference to measures in these conversations and processes will provide the added benefit of increasing the transparency of discussions with respect to the development and assessment of research, scholarship and related creative activity.

Faculties, OIPA and the VPRI should look to include and roll-up local measures to provide a broader context for articulating York's research success both within the University and beyond.

12. PROMOTE OPEN ACCESS TO RESEARCH

In keeping with global trends, there has been an increasing emphasis by Canada's public research funding agencies on promoting open access to research. Open access refers not only to the finished products of research, but also to the research data accumulated along the way. As research data constitutes a public good, appropriate curation and management of such data, including issues of ethics and confidentiality are matters of public trust and responsibility. In addition to promoting the public good by increasing the availability of publicly funded research, open access also demonstrably increases the impact of research.

The issue of open access and the costs that are often associated with open access were raised frequently during the PIER conversations. In sum, there was a strong sentiment and considerable enthusiasm for York becoming a Canadian leader in promoting open access to research. Thus a number of strategies are recommended to enable and promote open access to York research.

At the local level, units, ORUs and programs should collegially promote and encourage open access for all research results, as appropriate, and refer specifically to open access in their research analysis and reporting. These initiatives should be supported at the Faculty level and centrally through demonstrated national leadership in open access policy development and implementation. York should develop transparent open access publishing and appropriate research data management policies that are inclusive and reflect the core values of the university. These policies should be developed through normal collegial processes with opportunities for engagement from all areas of the University.

Open access publishing and research data repository are recognized as additional costs for research. Open access fees are an eligible direct cost for publicly funded research while research data repositories are an eligible indirect cost. The eligibility of these expenses and the expectation for researchers to budget for these costs in their research funding applications needs to be promoted and verified through research offices.

York must also strive proactively to facilitate open access publishing. For example, the Libraries currently administer the publication of over 40 open access online journal titles, including *Revue YOUR Review* that features York's undergraduate research outputs. The continued development of these efforts is building affordable open access opportunities for York researchers and showing strong leadership provincially, nationally and internationally. During the PIER conversations many respondents also highlighted the importance of a York University press for raising the profile of the university and the impact of its research. In the first instance developing the capacity for electronic book publishing is encouraged as an objective for the University. However, given the increasing pressure on physical academic presses around the world, the more immediate opportunity here may be for York to show leadership in the current provincial discussion surrounding the development of a coordinated Ontario Universities publishing initiative. As the second largest university in Ontario and with a Faculty complement more strongly oriented towards book publishing than any other in the province, leadership in this area should be considered an expectation as well as an opportunity for York.

For research data management, Libraries and VPRI working with Faculties should provide leadership in developing the policies, procedures and infrastructure to ensure that York is a leader in appropriately developing research data repository capacity and managing and supporting open access to research data. Similarly, Faculties should coordinate with the Libraries to take full advantage of university-wide access to research-related software and associated computational tools.

13. STRENGTHEN SUPPORT OF RESEARCH PROGRAM DEVELOPMENT AND IMPLEMENTATION

Success in research, scholarship and related creative activity is strongly enabled by a researcher's surrounding environment and engagement therein. Individuals within vibrant and successful research organizations are advantaged in developing their individual success by a strong culture of collegial and institutional support in which research and intellectual expertise is shared amongst the collective to enable individual success. Many voices in our conversations emphasized that while York has increased both the collegial and institutional supports for research development over the past decade, we still have some ways to go to match our competitors. Further, it is also recognized that securing the funding needed for research projects is increasingly an iterative process across all fields, with applications needing to be developed and refined over time in building towards success. The accelerated development of two types of pre-award supports is envisioned to support the continuing growth of York's research success.

First, continued investment in institutional, Faculty-based and local research administrative supports are needed to assist researchers in identifying research funding opportunities and to develop applications that meet the expectations of the funder with respect to completeness and relevance, including strong budgets and compelling support materials. Here strong appreciation has been expressed for the research director/officer/coordinator network that has been developed over the past decade and for the additional supports provided through the office of research services within the grants and strategic and institutional initiatives groups. However, the central theme expressed here has been that current resources are still limited and that Faculties and the institution need to examine ways to further increase the level of support provided for research grant development. Further, professional development opportunities must be provided for staff to keep pace with the evolving research landscape. As our research support network continues to develop it was cautioned that communication is key to ensuring engagement and satisfaction. While it is recognized that access to supports does necessitate internal deadlines and compliance expectations, minimizing the bureaucracy and maximizing the efficiency of service must always be a priority and efforts must continue to be invested on increasing the efficiency and reducing the complexity of proposal approval processes, such as the ORS checklist.

Second, it was frequently noted that for a collegially-based institution, York does not take a particularly collegial approach to supporting research development. Many cited the commitment to mentorship and extensive use of internal peer review employed at other institutions as significantly outpacing the efforts we make at York and noted that there is strong evidence linking these activities to improved research application success. While acknowledging that in some institutions participation in these activities is deemed to be so important as to be mandatory, in many others, strong participation reflects an ingrained cultural expectation rather than a requirement. Therefore, it is strongly recommended that Faculties, units and programs prioritize a discussion with respect to the collegial enhancement of a culture of research application mentoring and internal peer review. In some faculties, such processes have been initiated and their further development is encouraged. A broader conversation across the University should highlight best practices and highlight locally developed initiatives. We heard strongly that participation in these activities should be considered a normal service workload expectation that is appropriately recognized and rewarded. At the same time, caution should be taken to ensure that the development of these collegial supports is accomplished with minimal bureaucracy.

Research program development at York is also supported through a number of direct support mechanisms including research related releases, professional expense allowances and small grant programs, including the SSHRC Research Opportunity and Conference Opportunity programs, the York incentive grant and a variety of Faculty-specific programs. There are also support programs to encourage knowledge mobilization and knowledge translation. The objective of all these supports is to promote and support research engagement and collaboration of York faculty members. These direct supports to researchers were a frequent topic in the consultations. On the one hand it was recognized that in some areas, small periodic amounts of internal funds are sufficient to support a vibrant individual research program. However, we also heard that researchers should never be completely dependent on internal monies to support their research and scholarly aspirations. Rather, wherever possible researchers should be encouraged to seek external funding for their scholarly endeavours, with internal resources targeted primarily toward enabling and sustaining external achievement and collaborations.

A major challenge with respect to developing and supporting what collectively falls into the category of indirect research supports is deployment of funds needed for the supports in our highly constrained environment. York does receive some funding through the federal Research Support Fund based on the University's level of Tri-Council funding, but these funds cover only a fraction of the true indirect costs of research and their allocation is highly prescribed.

York also receives unrestricted indirect costs of research funding from many other types of research grants and from research contracts that provide a potential source of funds that can and in many instances are used to fund the types of research support activities described here. However, reporting to the York community on the use of these funds is inconsistent and faculty generally do not understand the importance of securing these funds and how they are used to support their research. With the introduction of a new budget model flowing these revenues directly to the Faculties, there is an opportunity to transparently demonstrate how these funds are invested in support of the indirect costs of research at the institution including, for example, research officer or research grant administration supports. It is recommended that Faculties report explicitly in their budgets going forward the receipt and use of unrestricted indirect research costs. To facilitate this, it is also recommended that the VPRI work with the Faculties on developing transparent guidelines for the deployment of these unrestricted funds.

14. ENHANCE POST-AWARD SUPPORT OF RESEARCH

One of the goals for research intensification at York is to significantly increase the amount of research funding that supports the research performed at the University. With current research grant funding from over 350 organizations around the world (many with multiple funding programs) and an equally diverse basket of research contracts and donations, implementation and management of research grant funding seems at times to be as complex as the research itself. Further, the complexity of the research funding landscape continues to grow at the same time as reporting requirements and accountability are also increasing.

One strength of York is our reputation for compliance as a manager of research funding. However, at the same time, there are very strong views, real or perceived, that research funding management at York is one of the most significant barriers to enabling and intensifying research at the institution.

Many from the York community spoke of the challenges that they face in utilizing their research funding, in understanding and navigating the system, and the lack of clear channels of explanation and assistance available to them in managing their spending. Particular issues include heavily bureaucratic and cumbersome procedures for approving expenditures and lengthy waits for reimbursement as claims snake their way through the system. A number of faculty offered the forthright opinion that they had lost interest in pursuing research funding as the money was so hard to spend that it was not worth the effort needed to acquire it! Others offered that, wherever possible, they direct their research funding to other institutions to avoid what they see as the bureaucratic complexity and non-responsiveness of dealing with York. These perceptions or realities have particularly adversely influenced the willingness of York researchers serve as leads for inter-institutional collaborative initiatives. While such criticisms of research financial management are heard in many universities, the tone and tenor of the concern expressed at York is notably strong. Recent efforts to streamline claims processes have not noticeably increased user satisfaction and concern is growing about an increasing electronic administrative trail in research grant management.

How then to reconcile this very significant dissatisfaction with York's exemplary financial management? Deeper discussion suggested that the root cause of the challenges experienced related to issues of communication and support rather than York's bureaucratic research grant management processes *per se*. Researchers are legitimately highly focused on doing research and are ill-prepared, ill-equipped and mostly disinterested in the complexities of financial research account management and do not see it as a good use of their time. As highlighted by one highly funded researcher *"Why does York insist on using so much of my highly paid professorial time for clerical work?"* Potential analogies might include asking airline pilots to perform aircraft maintenance checks or asking an architect to lay the concrete for one of their creations. By contrast research accounting is legitimately focused on ensuring research expenses are made in accordance with funding agreements and leave neither the investigator nor university at risk of financial liability. The disconnect is further emphasized by the complaint that researchers fail to attend financial training sessions they require, while researchers complain about the volume and complexity of the paperwork (real and electronic) required to complete the simplest research spending transactions.

It became very clear that working to improve the researcher-accountant interface would lower one of the most significant barriers to expanding research funding engagement at York. An important issue here is local research administrative supports for the researcher, either directly supported by research teams, or supported through Faculties, units, areas of focus and/or ORUs. Such supports are typically available locally to researchers in research intensive Canadian universities and provide an important interface

between the researchers and research accounting, human resources and supply chain management. A number of Faculties at York have a Faculty Research Administrator(s). However, the skills of these individuals and their focus on service to faculty are inconsistent. Further, there is a sense that budgetary pressures have led to an underinvestment in research administrative support staff. It has also been noted that there is a high turnover in positions that offer local support with respect to research expenditures, which may indicate a need to redefine positions to make them more attractive for long-term employees. It is recommended that Faculties review these positions in concert with Finance and Administration to strengthen positions that have the potential to make a very strong contribution to increasing the ease of research spending and accounting for researchers. Strengthening post award support must be a primary strategic objective for investment in growing research intensity.

Additionally, while resources are often available on larger research grants to provide for project management and research administrative support personnel, current hiring strategies for these positions often emphasize familiarity with research at the expense of finance and management skills. Faculty and teams hiring to these positions need to more actively consider the research grant administrative skills of people being hired to these activities and consult with Finance or the Office of Research Accounting in making these hires. Indeed, we note that many research intensive Canadian universities have implemented decentralized models for research financial management, where research accounting and financial compliance are conducted at the unit level by trained finance officers who are directly accessible to the researchers.

Large complex grants typically require post-award project management and entail significant reporting requirements even before cost centres are set up (e.g. CFI finalization). Currently this support is provided by both the Offices of Research Services and Research Accounting. We heard in the consultation that this creates duplications, inefficiencies, and confusion for researchers and places Research Accounting in the position of auditing their own functions. Thus it is recommended that pre-award finance functions transition from the Office of Research Accounting to the Office of Research Services to enhance service to researchers, shorten implementation timelines and remove a conflict from finance of auditing their own functions.

On the flip side, the acknowledged transactional proficiency within Finance and the Office of Research Accounting appears in part to come at the expense of proactive communication and facilitation of researcher objectives. Improving communication with researchers through voice in complement to electronic messaging with a goal of proactively working to correct minor errors in transactions and providing hands on support may increase the time required per transaction, but should increase overall efficiency and customer satisfaction through reduction of the transactional churn and perceived unhelpfulness that is so frustrating to researchers. In this regard, we note that some research intensive Canadian universities have developed centralized help desk systems for researchers and Faculty-based research administrators as a resource to provide answers to questions with respect to research finance, human resources and supply chain management. A similar practice is recommended here for York. Additionally, service expectations and targets should be developed, tracked and published for Research Accounting as well as other offices providing post award services (i.e. Procurement, HR, UIT) and as per measures of research, provide external comparison wherever possible.

Lastly, it has also been recognized that we fail to capture all of the research funding that we could in our external reporting. Many researchers receive funding from organizations that do not require that the money flows through the University, for example Canada Council for the Arts and many direct research contracts. In other instances, funds that are received for research purposes are not always set up with a

research account designation. We also need to maximize our ability to record donations directed towards research as income, as well as the income from research-directed endowments.

While we are presently unlikely to successfully encourage faculty to choose to route external research funds through the University that they are not required to, we need to investigate ways in which the Faculties can report on the revenues that will be taken up in our institutional research income reporting.

To address overall structural issues it is recommended the VPRI, VPF&A, VP Advancement and Provost jointly sponsor a task force to examine the state of research financial management at York and make recommendations to improve researcher satisfaction with the administration of their research funding and their enthusiasm for having their research grants administered through York while maintaining our strong reputation for compliance.

15. ENHANCE THE DEVELOPMENT AND TIMELY IMPLEMENTATION OF WORLD-CLASS PHYSICAL RESEARCH INFRASTRUCTURE

Research intensive universities prioritize the development and renewal of cutting edge research infrastructure in support of identified strengths in research, scholarship and related creative activity and in those areas of opportunity where there is strong engagement for the development of internationally recognized research programming. Of particular importance is the timely implementation of research infrastructure for new professorial faculty.

As the University works to develop a new campus in Markham and pursues expansion projects for engineering, digital arts, humanities, and business among other priorities, it will be important that development of research space receive appropriate attention and priority. This is particularly true for the “wet” sciences where research space from recent expansion is now at or exceeding capacity and continued growth of research will depend on new infrastructure. Similarly, for “dry” research, unsuitable office and research space for staff and trainees can limit the extent to which certain research opportunities can be taken advantage of and the extent to which we can accommodate graduate student and postdoctoral fellow expansion. Overall, we should aim for research infrastructure at York to be unrivalled within Canada and competitive with the very best in the world. This is a collective objective, as researcher success in obtaining external infrastructure funding, such as through the Canada Foundation for Innovation will provide momentum for the prioritization of research infrastructure development.

To monitor our progress in the development of research infrastructure, the University should work to develop targets for the implementation of research infrastructure and report on progress towards our targets. This is particularly important with respect to the arrival of new hires and the implementation of competitively awarded research infrastructure. The University should also endeavor to monitor the use and status of research space actively and be proactive in including projecting for future research requirements in all capital planning exercises.

16. DEVELOP YORK'S INNOVATION LANDSCAPE, SUPPORTING PARTNERSHIPS AND TRANSLATING RESEARCH INTO ACTION

The fundamental pursuit of knowledge continues to be the cornerstone of university research. However, as publicly assisted institutions, universities in Canada also have an obligation to engage in research relevant to society and to translate research outcomes into productive benefits. Much of this work is about being a member of the broader civil society and engaging the external community as partners in research.

York has a proud tradition of community-engaged research and is the national leader in community engaged scholarship by a number of measures, including the total number of community-based partners and the greatest ongoing level of success within the SSHRC program Partnerships category. Our commitment to community engaged research is a clear reflection of the social justice mandate of the University. Further, the scholarship of community-engaged research, continuing to build relationships and increase impacts, is highlighted as one of the areas of ongoing opportunity in York's strategic research plan.

Community engaged scholarship is supported centrally at York through the Knowledge Mobilization (KMb) Unit located in the VPRI. This group is recognized for its commitment to the York community and its important role in fostering and sustaining community based research partnerships. We heard that it is important for the capacity of the KMb Unit to grow in parallel with this area of research at York and to maintain and grow its leadership position in knowledge mobilization. For example, one potential area for increased emphasis for York KMb would be a focus on the development of international partnerships for community based research.

York is also committed to the development of productive commercial research partnerships with industry and to the promotion and support of startup companies and entrepreneurship. Since its inception in 2012, Innovation York has provided a focal point for engagement for the York Community for industrial liaison, research commercialization and entrepreneurship. Work in this area is also supported through a range of Faculty-specific initiatives in the areas of intellectual property (Osgoode) and entrepreneurship (Lassonde, Schulich, Health, student services). Working with community partners including the York Region's innovation centre ventureLAB, the Vaughn International Commercialization Center CreateIT Now (Southlake Hospital), Mi² (Mackenzie Health), the York Entrepreneurship Development Institute (YEDI), large and small corporate partners and economic development committees and chambers of commerce in the York Region and the GTA, Innovation York provides an entry point into a complex innovation ecosystem for York researchers.

As applied research at York continues to develop, particularly through the ramp-up of the Lassonde School of Engineering, Innovation York must continue to keep pace with the research commercialization and industrial liaison needs of the institution. For example, the number of research agreements supported with industrial, academic and community-based partners has increased almost seven fold from 74 in 2011-2012 to 571 in 2014-2015. We also heard in our conversations that the suite of entrepreneurship, industrial liaison and research commercialization activities that has been developed at York over the past several years are underappreciated outside the University. To take advantage of its full potential, it is crucial for Innovation York to actively build its brand so that York becomes appropriately recognized as a leading and high profile university hub for innovation.

As community engaged research crosses over into social innovation and social entrepreneurship, so too do the mandates of Innovation York and the KMb Unit. Social entrepreneurship has become an increasing focus of both groups as evidenced through their collaborations in the development of communityBUILD, a social enterprise business development program offered through ventureLAB and developed in partnership between York, ventureLAB, Seneca and the United Way. To maintain the momentum and take maximum advantage of the crossover potential for innovation, it will be important for Innovation York and the KMb Unit to become integrated under a single umbrella that maximally takes advantage of their partnership expertise across domains and disciplines.

York's continued progress on the innovation front should be closely tracked and monitored, with regular reporting of activities and periodic critical review of operations.

LEADERSHIP IN RESEARCH AND RESEARCH ADVOCACY

Central to achieving recognition as a leading research intensive university is the active involvement of York's faculty and leadership in external positions of research leadership and strong advocacy for the development of research, scholarship and related creative activity. This external visibility increases the University's profile and recognition of its outstanding research community.

17. PROMOTE AND RECOGNIZE EXTERNAL LEADERSHIP BY YORK FACULTY

York faculty have expressed a robust enthusiasm to increase their engagement in national and international research leadership by taking on high profile external leadership roles that reflect their high regard within their fields and provide the opportunity to raise their profiles in a manner that also enhances the overall reputation of the University. At the same time, we heard that many faculty members currently resist applying for, or decline invitations for, high profile external research leadership appointments such as to editorial boards, advisory councils and external review panels, as the substantial commitments entailed are generally not recognized as an expectation within workload. To a certain extent this reflects a cultural issue in terms of expectations for external research service and leadership commitments and its importance as an academic contribution.

Therefore, it is recommended that Faculties, units and ORUs, together with the institutional research leadership, work to encourage and promote greater participation of York faculty on editorial boards, review panels, research advisory councils, organizing committees for national and international events, and other external leadership opportunities including with community partners, not for profits and other avenues in which research, scholarship and creative activity are featured, promoted, discussed and overseen. These efforts should be accompanied by collegial discussion within units and programs to establish the internal value of these activities, promote the expectation for participation and develop their recognition within service workload. This includes promoting the interaction of York faculty with policy makers and stakeholders including our industrial partners, and bringing to light York academic contributions to the development of public policy at the national, provincial and regional levels.

Similarly, York is a member of several national and provincial organizations that articulate strong advocacy positions in favor of research. Additionally, York faculty and officials serve on the governing bodies or participate in the activities of many other organizations that promote and fund research, both in Canada and internationally. Visibility and leadership contributions in these activities help to build the

profile of York as a leading research university. Additionally, York must be proactive in responding to requests by granting councils, governments and other organizations for institutional and faculty participation in consultations on research, research translation and policy impacts, research infrastructure, and other research-related topics.

To promote the individual and collective reputation, participation in these activities should be included in communication plans and collective annual reporting on research, scholarship and related creative activities and recognized in considerations of tenure and promotion. With the support of communications and government relations, York also has an opportunity to become a stronger public advocate for research through expanding expert and editorial contributions to the press and other forms of media.

18. FOSTER THE INTERNATIONALIZATION OF YORK RESEARCH

An increasingly important component of world university rankings and national research expectations from the Tri-Council and other Canadian research funders is a strong international research footprint that is reflected in collaborative research activities that involve the international movement and exchange of researchers to/from York and is reflected in the cofunding of projects and co-publication and translation of results. It also includes international academic service and the levels of international faculty, postdoctoral fellow and students at York as well as the international mobility of York researchers. International reach and collaboration is also an explicit objective of York's Academic Plan and Strategic Research Plan. At the same time it was shown during the consultation that York trails the national average with respect to collaborative research outputs with international partners, as well as in the proportion and numbers of international graduate students and postdoctoral fellows. These observations elicited a strong response in the consultations, with explicit affirmation of the need for York to be at the forefront of international research engagement. It was also noted on several occasions that York does not appear to have a coordinated international research development strategy and that York International must have the mandate and resources to broadly support international research development activities.

Thus, it is recommended that Faculties, units, programs and areas of focus examine their current international research engagement and initiate ongoing dialogues with respect to promoting and valuing international research interactions and research outputs that include an international component. Funding for internationally oriented research projects is available in Canada through certain Tri-Council programs, development agencies like the International Development Research Centre (IDRC) and Federal Departments like Global Affairs Canada. Researchers are also encouraged to pursue international funding programs for which Canadian researchers are eligible, including Horizon 2020, the Wellcome Trust, and the National Science Foundation.

York's leadership in the arts, social sciences and humanities research has had demonstrable and meaningful global impact. York's Refugee Research Network is one such example, bringing together Canadian and international scholars in the study of refugee and forced migration issues, and engaging policy makers, non-governmental organizations, and communities of practice in the pursuit of real-world solutions to the needs of refugees and displaced persons. The continued growth and development of York international research engagement in these areas is strongly encouraged. New projects through initiatives such as SSHRC's T-AP (Trans-Atlantic Partnership: Digging into Data Challenge) can provide the basis for cutting edge international work.

Similarly, current big science projects, such as Conseil Européen pour la Recherche Nucléaire (CERN), NASA and the European Space Agency, and Brain Research through Advancing Innovative Neurotechnologies (BRAIN), are driven by international research collaboration. It is important that York researchers continue to build and be supported in building their leadership and participation in these initiatives to leverage the success achieved over the past several years in contributing to fundamental research advances such as the discovery of water on Mars, discovery of the Higgs boson and the discovery and study of neutrino oscillation.

Centrally, it is recommended that York develop and support a concerted effort with respect to building international research partnerships, research funding relationships and international exchange programs for researchers and research trainees supported through York International and the VPRI. Among other initiatives, York needs to improved its supports for applications to international research funding programs and enhance our development and support of dual, double and similar degree programs with leading international institutions whose philosophies and expertise align well with our own. We must also raise our efforts in support of the international mobility of faculty, students and other researchers, with respect to both the outward movement of researchers from York and welcoming researchers to York, including streamlining internal bureaucracy and facilitating the navigation of the bureaucracy of Citizenship and Immigration Canada. These institutional efforts and strategies should be articulated York's International Strategy.

19. INCREASE RECOGNITION THROUGH RESEARCH AWARDS FOR YORK FACULTY AND TRAINEES

Recently, the University has focused on the nomination of deserving Faculty and trainees for national and international awards and has begun to invest resources to develop support networks for nominations. A number of Faculties have increased their support of awards nominations and centrally an awards officer specialist position has been added to Office of Research Services to support major awards nomination development. Our success in nominating York scholars to the Royal Society of Canada and other faculty awards, and in competitions for Banting Fellowships and Vanier and Trudeau Scholarships, demonstrates the importance of joint efforts locally and centrally to increase the number of high profile awards to faculty, postdoctoral fellows and graduate students respectively.

Recognition in the form of awards was noted in our conversations as being important to individual faculty and trainees and is also important for the overall academic reputation of the institution. Thus efforts to further build York's capacity to promote faculty and trainees for competitive external awards must continue. Collegial discussion of the importance of awards is encouraged as is tracking and monitoring our success at all levels. While progress has been made, York must continue to grow its nominations of its outstanding researchers, in particular with respect to international awards nominations. We should also track and monitor nominations both centrally and in the Faculties.

Awards should be publicized and awardees celebrated. As researchers in a mature research intensive university, we have reached the point where we can see that our colleagues' successes are successes for all and thus must overcome what is sometimes seen as a reticence to acknowledge individual success. In addition to the continued development of York's annual public research awards celebrations, Faculties and units are encouraged to celebrate their award recipients, including graduate and undergraduate students and post-doctoral fellows, and note awards in measures of research achievement. We must also grow the use of traditional and new media to communicate our success externally.

BUILDING RESEARCH FOR THE FUTURE

A key element to achieving York's research ambitions, is the growth and development of new areas of research opportunity that align with the continuing development of York's academic mandate including the creation of a York University campus in York Region, major expansion of Glendon College and accompanying bilingual French designation, as well as an eventual School of Medicine as outlined within York's Strategic Mandate Agreement and University Academic Plan. At the same time, external and new developments must be appropriately balanced with continued investment and development of York's existing high-achieving research.

20. DEVELOP MARKHAM AS A RESEARCH INTENSIVE CAMPUS

The successful application by York to the Province in 2015 for a new satellite campus in Markham provides an opportunity for implementing new ideas in building a research intensive campus from the ground up. In our conversations, both the York community and partners in York region have stressed the importance of appropriately integrating research into the development of a new campus. With a focus on professionally oriented academic programs and a location in the newly developing Markham city centre in close proximity to many of the leading technology companies in York region, as well as VentureLab and the Innovation York Incubator at the Markham Convergence Centre, the Markham campus offers attractive possibilities for the development and leveraging of partnered research and focusing on entrepreneurship and innovation as well as fundamental inquiry.

If we are to accomplish the long-term development of Markham as a comprehensive campus, a deep dive to collegially explore the research possibilities of the campus must accompany the development of academic programming. Research must play a key role in considerations for the hiring of new faculty focused on the Markham site. Research development should stress both new opportunities and alignment and connection with research across the university. Research expectations and supports for new hires should be clearly defined. Given the design structure for academic governance for the new campus hiring should include consideration of average research expectations across the university system rather than focusing specifically on the new campus. Campus design should include provisions for collaborative and interactive "dry lab" research space and associated networking and entrepreneurship spaces. Full consideration must also be given to the integration of graduate students and postdoctoral fellows within the new campus such that all of their daily supports and activities can be accomplished onsite.

To truly succeed we must also take advantage of the opportunity to re-imagine the relationship between campus, entrepreneurship and social and technological commercialization to maximize the potential for transferring ideas into action. Planning should include consideration for bringing together an innovation hub including the Markham Innovation York incubator close to campus and embedding a full service entrepreneurship site within the development. Further, planning for research development should be long term, going beyond the view of planning for the debut of the campus to envision the development of research over the first five and ten years of the campus.

These developments should be planned in concert with our partners, in particular the City of Markham and VentureLab. Additionally, the entrepreneurship component offers the potential to build on current

conversations with York Region District School Board to include an entrepreneurship hub for high school students.

It will be important to work collegially to identify objectives to guide research development on the Markham campus, and to monitor our progress towards realizing the Markham campus as a centre of excellence for research and scholarly inquiry.

21. RESEARCH AS A DRIVER AND ENABLER FOR FUTURE YORK INITIATIVES

York ambitions far exceed the development of the new Markham campus. Ambitions for the expansion of academic programming and supporting infrastructure are seen all around the University, from Glendon College to Engineering to Schulich to Health and Science to the development of a new School of Medicine.

We heard strong support for the continuing development of research infrastructure across the university. Modernization of research facilities is also important for the ongoing success of the School of Arts, Media, Performance and Design and the Faculties of Liberal Arts and Professional Studies, Environmental Studies, Education and Law. At Glendon, we heard that strategic consideration of the development of research as we expand our bilingualism mandate offers important opportunities for York to become a research leader in select areas of research involving bilingualism and for which a multilingual approach offers specific advantages, particularly in national, international and Indigenous contexts. For sciences, engineering, and health, research infrastructure to enable and support expansion and growing success continues to be at a premium. The new Life Sciences Building and the Bergeron Centre for Engineering Excellence are oversubscribed and research infrastructure supports, including vivarium facilities, lag the supports available at other research intensive Canadian universities. Similarly, modernization of research facilities is important for the ongoing success of the School of Arts, Media, Performance and Design and Liberal Arts and Professional Studies. Thus continued growth and development of research facilities and infrastructure needs to be integral to all new campus planning activities including phase II of engineering and expansion to accommodate continuing growth in health, at Glendon and in other areas of research, including liberal arts research spaces.

Plans for new research growth and development in science, health and engineering align well with the ambition of a new medical school for York University to meet Ontario's evolving and unmet clinical and community health needs. Consistent with the overarching theme of wellness in the community, a medical school for York is envisioned to focus on integrated interdisciplinary care, family medicine, community health, immigrant health and wellness through the lifespan. In working to achieve this ambition, we need to build on our existing relationships with our regional clinical partners, community health and regional health authorities with a long term view of integrating clinical and population health-based research into the broader York research landscape. Here, in addition to continuing to grow our research partnerships with Southlake Regional Health Centre, Markham Stouville hospital and Humber River Regional Health Centre, there is a particular opportunity to be an active partner with Mackenzie Health in the development of their new hospital site in Vaughn and to integrate a York research presence that supports medical school development.

Implementation of a medical school and associated research programming at York also will benefit from the tremendous wealth offered by the surrounding disciplines at York University which can provide unique

perspectives and innovative approaches to solving some of the most pressing questions in health promotion, disease and injury prevention, and the delivery of healthcare.

RESPONDING TO PIER

We heard clearly in the conversations that meeting our collectively established goals for research intensification at York University can only be accomplished through a strong, collegially-driven response that is resourced and supported. Thus PIER must be more than a document that is casually referred to, it must become a document that elicits a forceful and engaged response throughout the community. This is both the opportunity and challenge of PIER.

As the PIER recommendations touch on all aspects of the university, it is not expected that each unit, division or area of focus should attempt to respond equally to each recommendation. Indeed a key to the success of PIER will be for individual groups to seek out the recommendations in the plan that are most relevant and important to them and focus their responses concomitantly.

Each academic unit, program or area of focus is called on to promote discussion of research intensification, prioritize PIER recommendations in a manner appropriate to their current research status, and integrate a response to the PIER recommendations into their collegial academic planning documents and planning and annual reporting submissions to their Deans, and in the case of ORUs, to their Boards. This should include a description of initiatives planned and the processes employed to develop the initiatives, as well as the identification of measures to be used to track overall progress towards research intensification as well as specific initiatives. There is a particular role in these conversations for existing Faculty-based research committees in building engagement in the conversation and consensus with respect to responses. Similarly, administrative divisions and units within divisions should look to relevant sections of PIER and provide focused responses.

As PIER is a bottom up initiative building support up from the level of the individual unit, program, area of focus and ORU, its success will be dependent on the appropriate investments in time and resources. While, budgets are tight throughout the university, it was clear in the conversation that following up on PIER is of sufficient importance to the long term future of York, that we must make the investments at all levels of the university that are needed to support its success.

Deans should coordinate and respond to the local initiatives proposed and roll them up into Faculty plans, including their integrated resource plans, academic plans and financial plans, as well as in their annual reporting to the Provost and the Academic Policy, Planning and Research committee. Central and service units are also called upon to respond to PIER in areas where recommendations are relevant and roll up the responses into Divisional IRPs and other operational plans. Together, this will embed PIER ambitions within the operational and academic fiber of the university.

Subsequently, similar consideration should be provided at all levels of reporting with respect to the progress that is being on PIER-inspired initiatives.

We heard forcefully in the conversation that, working together, we can succeed in intensifying and enhancing research at York University to realize our collective ambition to achieve recognition as an internationally leading research intensive Canadian university.

RECOMMENDATIONS	ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE	
Theme 1: Growing a Culture of Scholarly Inquiry					
1.	<p>Create opportunities and spaces to promote interactive research engagement that foster collaboration and interdisciplinarity</p>	<p>Review of intra- and inter-Faculty research communications to increase exposure and promotion of research across units and Faculties.</p> <p>Enhance emphasis on collaborative research in collegial discussion and strategic research planning</p> <p>Promote the organization of symposia to foster interdisciplinary research</p> <p>Review and enhance spaces that promote informal faculty and research trainee engagement including the promotion of shared work environments and integration of ORUs within Faculty spaces.</p>	<p>Collaborative research outputs across disciplines and Faculties</p> <p>Interdisciplinary research funding applications</p> <p>Number of symposia and workshops, public recognition of interdisciplinarity</p> <p>Increased researcher presence on campus and satisfaction with research work environment measured through campus workplace surveys</p>	<p>Unit leads</p> <p>Deans</p> <p>Communications</p> <p>VPF&A</p> <p>VPRI</p>	<p>12 months</p> <p>Ongoing, emphasis in planning documents</p> <p>Ongoing</p> <p>Three years</p>
2.	<p>Work together to build research engagement</p>	<p>Develop unit, program, area of focus, and ORU level initiatives to build research engagement.</p>	<p>% of faculty with active research projects</p> <p>Number of research outputs per faculty member</p>	<p>Unit leads</p> <p>Program leads</p> <p>Areas of Focus</p>	<p>Planning: Initial 9 months, subsequently ongoing</p> <p>Implementation: Initial</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		Report on initiatives and monitor and report on impact to Deans and Governing Bodies (ORUs)	<p>% of research funding engaged faculty¹</p> <p>Numbers of thesis based graduate students and postdoctoral fellows within programs</p> <p>Graduate time to completion</p>	<p>Directors</p> <p>ORU Directors</p> <p>Deans</p>	<p>18 months</p> <p>Review progress after 3 and 5 years.</p>
3.	Incorporate research into all aspects of York's collective planning culture.	<p>Work towards an equally weighted consideration of research and research development in academic planning documents</p> <p>Departmental Plans Integrated Resource Plans Complement Plans Strategic Plans</p> <p>Plans to include proposals to broaden the base of research participation across York communities for faculty and trainees.</p> <p>As applicable based on membership and alignment of objectives, include consideration of relevant ORUs in planning objectives</p> <p>ORU research development plans are contained within charter documents</p>	Documentation in planning documents at all levels	<p>Unit leads</p> <p>Deans</p> <p>ORU Directors</p> <p>VPRI</p>	<p>Initiated immediately</p> <p>Completed within a planning cycle</p>

¹ Research funding engaged faculty defined as faculty members holding or having applied for research funding of \$10,000 or greater within a given year.

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>Develop annual research reports to inform planning culture.</p> <p>Roll up local research reports into Faculty and Institutional reports</p>			
4.	Promote and capture a multiplicity of research outputs with an emphasis on impact	<p>Encourage non-traditional research outputs (web-based, film, social media etc.)</p> <p>Capture, recognize and appropriately weight non-traditional outputs in considerations of hiring, tenure and promotion</p> <p>Develop appropriate measures/indicators for non-traditional outputs, both general and discipline-specific.</p> <p>Enhance encouragement of a multiplicity of traditional outputs to enhance scholarly achievement</p> <p>Emphasize research impact, mentoring and supporting colleagues to achieve the high possible impact venues for their scholarly outputs.</p> <p>Promote and value collaborative research and collaborative research outputs to decrease York's overall reliance on single authorship</p>	<p>Numbers and types of research creations captured and reported</p> <p>Impact assessment of nontraditional research creations</p> <p>Increase in total academic outputs</p> <p>Increase in % of outputs in top 10% most cited and in top 10% of publications/presses</p> <p>Increase in % of collaborative research outputs, particularly involving international co-authors</p>	<p>Unit leaders</p> <p>Deans</p> <p>Tenure and promotion committees</p> <p>Libraries</p> <p>VPRI</p>	Initiate for 2016/17 academic year.
5.	Build research intensity in the hiring, tenure and promotion of regular full-	Complement planning to enhance focus on the alignment of professorial stream hires with the research needs	Increased emphasis on research needs and alignments within complement	<p>Unit leads</p> <p>Deans</p>	Initiate for 2016/17 hiring cycle

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
	time faculty.	and objectives of the hiring unit and Faculty; Hiring units to map average level of research, scholarship and associated creative activity achievement for past 5-10 years at the time of hire, pre-candidacy review, and tenure application for entry level professorial hires.	plans for all professorial stream faculty hires. Alternate stream hiring also aligned with enabling research intensive clusters of regular full time faculty. Research achievement guides for hiring pre-candidacy and tenure that outline average achievements of past candidates cited in recommendations for hiring and included in pre-candidacy and tenure considerations.	Provost Supports for mapping past achievements to be provided through Faculty Research Offices, with assistance from Libraries, OIPA and VPRI.	Fully implement for 2017/18 hiring cycle
Theme 2: Investing In & Promoting People					
6.	Improve the effectiveness of research time within workloads	Unit-level collegial discussions to identify and explore flexibility in workloads with an emphasis on workload equity and the goal of enhancing time available for research active faculty to engage in research, scholarship and related creative activity.	Workload distribution amongst regular full time faculty collated with research achievement Open and transparent standards and expectations for research leaves that reward research engagement and success Demonstrated variations in workload as faculty interests and engagements shift between academic activities	Unit leads Deans	Initiate for 2016-17 academic year Implement for 2017-18 academic year.

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>Include in discussions consideration of how part time and active retired faculty can increase their contributions to the overall academic success of the unit, program or area of focus.</p> <p>Faculties to review their collegial governance and service structure and practices with a view to decreasing the load of service engagement to increase the time available for faculty to engage in research.</p>	<p>Engagement of retired faculty in research and the support of research training including: numbers of faculty involved, numbers of students supervised, numbers of publications and associated outputs, amounts of research funding received,</p> <p>Documentation of policy and practice analysis and implementation of changes in IRPs and annual reports</p>		
7.	Position faculty and long term research employees for research success	<p>Early Career: Position new hires for research success clearly outlining supports and expectations at time of hire, including in letters of offer.</p> <p>Mentorship to include guidance on managing overall workload and access to stress management supports.</p>	<p>Research expectations, research supports and mentorship clearly defined in letters of offer</p> <p>Formal mentorship and research support plan developed prior to arrival</p> <p>Fitted-up research space and basic infrastructure available on arrival or accomplished within target timelines</p> <p>Accounts for startup funds open and accessible prior to arrival</p> <p>Timely implementation of</p>	<p>Deans</p> <p>Provost</p> <p>CUSBO</p> <p>Finance</p> <p>VPF&A</p> <p>ORS</p> <p>VPRI</p>	-Ongoing

RECOMMENDATIONS	ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>externally funded infrastructure (CFI etc.)</p> <p>Time to first successful research funding</p> <p>Time to first York-based research output</p> <p>Cumulative research productivity years 1-5</p> <p>Mid-Career. Continuation of mentoring, becoming research mentors, promotion of research leadership opportunities, access to appropriate research infrastructure.</p> <p>Senior Faculty: Active mentors and research leaders, continued access to appropriate research infrastructure.</p> <p>Retired Faculty: Develop criteria and expectations for continuing active research engagement. Provide opportunities for engagement with research trainees and for mentoring of junior faculty. Provide access to research infrastructure as appropriate to support funded research activities</p> <p>ORUs provide an open environment for interdisciplinary interaction of faculty at all career stages</p>	<p>Documentation of continuing mentorship at all career stages</p> <p>Research leadership opportunities realized</p> <p>Average research intensity and research funding Intensity</p> <p>Numbers of research active retired faculty</p> <p>Numbers of research outputs and amounts of research funding</p> <p>ORU membership numbers</p> <p>Collaborative research outputs</p>	

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>Mentorship expectations to be promoted within workloads including the supervision of graduate students and postdoctoral fellows</p> <p>Encourage participation in external peer review activities and research leadership</p>	<p>and funding Recognized internal proposal development and scholarly output review mentorship activities formalized and recognized</p> <p>Peer review grant panels, journal, book and other review, editorial boards, conference organization etc.</p>		
8.	Invest in faculty through the development of research chairs and professorships.	<p>Include research chairs and professorships as high priorities in the University's upcoming fundraising campaign</p> <p>Continue the growth of the York Research Chairs program including the development of Faculty-based Chairs where finances warrant, including the creation of endowed and term funded Chairs</p> <p>Work to enhance Canada Research Chair success.</p> <p>Increase emphasis on the nomination of faculty for competitive research chairs and professorships offered through national and international funding organizations including partnership programs including the NSERC Industrial Research Chairs Program</p>	<p>Numbers of endowed and term research chairs and professorships and amount of funding raised</p> <p>Numbers of York Research Chairs</p> <p>Numbers and occupancy rate of Canada Research Chairs</p> <p>Numbers of Chairs</p> <p>Success rate in Chair nominations</p> <p>Numbers of partners and amount of partner funding</p>	<p>Unit leads</p> <p>Deans</p> <p>Advancement</p> <p>Innovation York</p> <p>ORS</p> <p>VPRI</p>	Ongoing

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		Secure a Canada Excellence Research Chair			
9.	Increase and strengthen York's research based graduate population and becoming a destination of choice for postdoctoral training.	<p>Increase the efficiency and effectiveness of graduate student recruitment to York through enhancing internal processes and external outreach to potential students</p> <p>Simplify graduate student support packages</p> <p>Increase encouragement and support for applications for external graduate student scholarships</p> <p>Increase the funding of graduate students through faculty research grants across all disciplines, through both individual grants and collaborative training program opportunities.</p> <p>Graduate programs to develop and implement plans to collectively enable York to exceed its domestic graduate student targets and grow its international cohort</p> <p>Continue growth in professional development supports for graduate students and post-doctoral fellows, including best practice for postdoctoral fellow supervision</p>	<p>Enrollment of domestic thesis-based graduate students (Meeting and exceeding domestic graduate student targets)</p> <p>Enrollment of international graduate students</p> <p>Numbers and percentage of graduate students funded through external awards</p> <p>Numbers of graduate students funded through supervisors' research grants and training program grants.</p> <p>Numbers of external placement and other professional development opportunities for graduate students and post-doctoral fellows (internships, coop placements etc.), best practice guides for supervision</p>	<p>faculty</p> <p>Graduate program directors</p> <p>Unit leads</p> <p>Deans</p> <p>Faculty of Graduate Studies</p> <p>York International</p> <p>Advancement</p>	<p>Ongoing</p> <p>2016</p> <p>Ongoing</p>

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RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>Double cohort of post-doctoral fellows.</p> <p>Encourage and support applications to increase the percentage of externally funded postdoctoral fellows</p> <p>Continue the development of supports for postdoctoral fellows in areas of policy, finance, and physical space in the Faculty of Graduate Studies and host Faculties and ORUs</p> <p>Track career progress and maintain engagement with postdoctoral fellows over the long term</p>	<p>Numbers of post-doctoral fellows</p> <p>Number and percentage of externally funded postdoctoral fellows</p> <p>Expansion of Postdoctoral Coordinator positions and/or other administrative supports</p> <p>Inclusion of postdoctoral fellows as part of York's Alumni base.</p>		<p>2021</p> <p>Ongoing</p> <p>2021</p> <p>2021</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
10.	Grow undergraduate participation in research	<p>Increase the number of research opportunities for undergraduates. Includes credit opportunities and non-credit experiential learning opportunities (summer experiences etc.).</p> <p>Grow culture of supervising undergraduate research projects by faculty</p> <p>Expand the Research at York (RAY) program for undergraduates</p> <p>Develop a Dean's Award for Research Excellence (DARE) for undergraduate students in each Faculty</p>	<p>Number of undergraduate research opportunities (internal and external)</p> <p>Number of papers and other research outputs authored or coauthored by undergraduate students</p> <p>Number of RAY internships</p> <p>Number of DARE awards</p>	<p>Faculty</p> <p>Undergraduate Program Directors</p> <p>Unit leads</p> <p>Deans</p> <p>AVP Teaching & Learning</p> <p>AVP Graduate Studies</p>	

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		Continue building Undergraduate Research Fair	Number of Research Fair participants		
Theme 3: Supporting Research Growth & Development					
11.	Develop and employ general and specific measures to monitor research progress.	<p>Make data on both traditional and nontraditional research outputs broadly available</p> <p>Develop research outputs data analyst capacity that also serves as an interface for York with public and private research data aggregators that influence external university rankings.</p> <p>Units, programs, areas of focus and ORUs to develop relevant specific and externally comparable measures of research, scholarly and associated creative outputs to be used in providing perspective on progress in developing research and to inform decision making related to research development. Local metrics to be rolled up at the Faculty and Institutional level annually and promoted for external adoption.</p> <p>Develop a set of general measures for use by Units, programs and areas of focus for use by Units also to inform decision making that can roll up to the Faculty and Institutional level to inform government requirements and external university rankings</p>	<p>Subscription to research data databases and analysis software</p> <p>Strategic investment in the implementation of research outputs data analyst position.</p> <p>Numbers of measures and year over year trends in research outputs</p> <p>Use of measures in research development planning</p> <p>Number of measures adopted externally</p> <p>Number of measures developed and year over year consistency in roll up reporting.</p>	<p>Unit leads, program directors, area of focus leads</p> <p>ORU Directors</p> <p>Deans</p> <p>Libraries</p> <p>OIPA</p> <p>VPRI</p>	<p>2016-17 development of measures and building of analyst capacity.</p> <p>2017, 2016 rollup.</p> <p>Ongoing refinements to measures and their use</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		Develop tracking and recognition of alternative forms of scholarly output including social media and web-based outputs	New alt metrics included in annual reporting, comparative monitoring of York impact by comparison to provincial, national and international averages.		
12.	Promote open access to research	<p>Develop transparent open access publishing and research data management policies that are inclusive and reflect the core values of the university</p> <p>Report annually on open access and research data management infrastructure including support costs</p> <p>Internally promote best practices for open access publishing and research data management through the Open Access, Open Data Steering Committee sponsored by the VPRI and Provost</p> <p>Continue to build open access publishing at York including the introduction of eBook publishing</p> <p>York as lead (or a co-lead) in a</p>	<p>Number of research outputs published through open access (% of total outputs).</p> <p>Annual report on research data management volumes</p> <p>Annual report on open access and research data management supports, capacity and costs</p> <p>Workshops and attendance</p> <p>York open access and research data management policies, procedures and supports</p> <p>Development of open access databases</p> <p>Numbers of York ejournals</p> <p>Numbers of eBooks published through York Press</p> <p>York as lead/co-lead in Ontario</p>	<p>Libraries</p> <p>APPRC</p> <p>VPRI</p> <p>Provost</p> <p>Faculties and Units</p> <p>Deans</p>	<p>2017</p> <p>Ongoing</p> <p>EBook publishing 2017</p> <p>TBD</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		coordinated Ontario physical publishing initiative	Academic Press		
13.	Strengthen support of research program development and implementation	<p>Review/develop service level expectations for research officers and research directors within Faculties, with view of development of activity-based model to determine staffing levels.</p> <p>Work to streamline bureaucracy and internal deadlines at all levels enhance the efficiency and effectiveness of research funding application development by researchers.</p> <p>Enhance the use of electronic means to capture permissions and approvals for proposals.</p> <p>Faculties, units and programs to collegially formalize mentorship expectations in support of research including internal peer review and advisory committees for new faculty.</p> <p>Faculties, VPRI, Provost and Units to develop tools and programs in support of building mentorship expertise and best practices</p> <p>Review and develop direct research support mechanisms that emphasize rewarding engagement and success</p>	<p>Numbers of research funding support applications across programs</p> <p>Customer satisfaction surveys of pre-award research supports</p> <p>Number of steps to application Times between internal and external deadlines</p> <p>Reduction in paper tracking of proposals</p> <p>Numbers of external research funding applications Numbers of successful applications and success rate. Percentage of research funding active faculty.</p> <p>Numbers of workshops/support tools and their uptake rates</p> <p>Numbers of research outputs and research output intensity Percentage of research active faculty and research funding</p>	<p>Unit leads</p> <p>Deans</p> <p>VPRI</p> <p>Provost</p>	<p>2017</p> <p>Ongoing</p> <p>2017</p> <p>2017 and ongoing</p> <p>2016/17</p> <p>2018</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>researchers to assist with research accounting, human resource and supply chain management.</p> <p>Faculty to develop the expectation for the documented reporting of external research funding directly to researchers that is presently not captured by the university and provide supports to facilitate reporting.</p> <p>Enhance ability to report on research-related funding received through advancement</p> <p>Commission a task force to make recommendations for the further enhancement of post award administrative supports.</p>	<p>Inclusion of "direct to researcher" external funding in Faculty and Institutional research funding reports</p> <p>Numbers and amounts of donations captured as research funding</p> <p>Implementation of Task Force Report Recommendations</p>		<p>2016/17 academic year</p> <p>2016/17</p>
15.	Enhance the development and timely implementation of world class physical research infrastructure	<p>Develop and report on service level expectations for the implementation of research infrastructure for new hires</p> <p>Enhance support of budget planning for research infrastructure funding applications</p> <p>Set and report on targets for the implementation of research infrastructure awards</p> <p>Interfaculty research space committee to monitor research space utilization rates and make recommendations with respect to future research infrastructure needs.</p>	<p>Average time to completion of research infrastructure for new hires</p> <p>Achievement of budget targets for externally funded research infrastructure projects</p> <p>Average times to implementation and completion of research infrastructure awards</p> <p>Percentage of research infrastructure occupancy</p>	<p>Deans</p> <p>VP Finance and Administration</p> <p>VPRI</p> <p>Provost</p>	2016-17

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RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		Development of research infrastructure capital plan as part of overall university capital plan	Number and amount of unmet research infrastructure needs		
16.	Develop York's Innovation Landscape, supporting partnerships and translating research into action	<p>Innovation York (IY) to coordinate research innovation development at York and provide a first point of contact for external engagement with York on the research application, commercialization and entrepreneurship file.</p> <p>Review the composition of the IY Internal Advisory Board to ensure appropriate stakeholder input into IY</p> <p>Develop an external Advisory Board for IY that emphasizes York Region Partners.</p>	<p>Commercialization activity (invention disclosures, commercialization projects, patent applications, Industry funding, valuation of startup companies, company financing, commercialization revenues)</p> <p>Amount of York spaces dedicated to entrepreneurship and research commercialization</p> <p>Numbers of students, faculty and staff engaged in commercialization and entrepreneurship activities</p> <p>Number of external partners engaged</p> <p>Internal stakeholder satisfaction</p> <p>Develop of plans for a York research innovation park</p> <p>Increased external engagement with York University on the innovation</p>	<p>Director, IY</p> <p>ORS</p> <p>VPRI</p> <p>Deans</p> <p>AVP Teaching and Learning</p> <p>Provost</p> <p>Director, Communications</p> <p>VP Finance and Administration</p>	<p>Ongoing</p> <p>2016</p> <p>2016/17</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		Restructure ORS to integrate the Kmb group into Innovation York.	file (Including numbers of interactions, physical presence of York with partners, dollar value of interactions Numbers of Kmb collaborative projects and crossover projects. Numbers and Value of research grants supported Kmb-supported research grant success rates Measures of social innovation and social enterprise development		2016/17
		Implementation of a communications strategy to build the Innovation York brand	IY brand awareness IY earned media Numbers and dollar value of external engagement with York through IY		2016
Theme 4: Leadership in Research and Research Advocacy					
17.	Promote and recognize external leadership activities by York faculty	Encourage and support external research leadership by York faculty and leadership in research advocacy and policy development	Earned media and editorials Policy forum leadership and participation	Unit leads ORU Directors Deans	Ongoing

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>Promote institutional leadership for Canada and Ontario in support of University research and innovation</p> <p>Promote collegial discussion of the value and recognition of external research leadership activities as academic service expectations.</p>	<p>Regulatory body leadership and participation (governing councils etc.)</p> <p>Academic editorial positions</p> <p>Conference/event leadership and organization</p> <p>External research review activities</p> <p>Academic community service engagement</p> <p>Institutional presence in policy discussions and advocacy.</p> <p>Inclusion of external leadership activities within evaluations of service contributions to workload</p>	Senior University leadership	
18.	Foster the internationalization of research	<p>Promote enhanced participation of York faculty in international and multinational research activities</p> <p>Improve research supports for participation in international research funding programs and development of</p>	<p>Numbers of research outputs involving international co-authors or partners</p> <p>Participation and leadership within multinational research projects</p> <p>Numbers and activity within international partnerships for research including amounts of</p>	<p>Unit leads</p> <p>ORU Directors</p> <p>Deans</p> <p>Faculty of Graduate Studies</p> <p>York International</p>	<p>Ongoing</p> <p>2016/17</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>international research projects and programs</p> <p>Increase international research opportunities for York students and postdoctoral fellows</p> <p>Increase international graduate student and postdoctoral fellow presence at York</p> <p>Build infrastructure and streamline bureaucracy to facilitate international researchers meeting Citizenship and Immigration requirements for visas, work permits and providing access to temporary and transitional housing and health insurance.</p> <p>A feature on research within York's Internationalization strategy</p>	<p>internationally derived research funding (grants and contracts)</p> <p>Numbers of York student and postdoctoral fellows with an international research experience</p> <p>Numbers of research-based dual and double degree programs with international partners</p> <p>Number of international graduate students and postdoctoral fellows at York and number of students and fellows that visit York</p> <p>Numbers of international research visitors,</p> <p>Processing times for visas and other documents.</p> <p>International research measures and targets within York's international strategy</p>	<p>VPRI</p> <p>Provost</p>	<p>Ongoing</p> <p>Ongoing</p> <p>2016</p>
19.	Increase recognition through research awards	Set increasing targets for awards nominations, with a particular focus on	Numbers of nominations and awards	Unit leads	Ongoing

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
	for York faculty and trainees	<p>international awards.</p> <p>Increase collegial and administrative support for faculty and student awards nominations for research and the translation of research into innovation.</p> <p>Publicizing and celebrating research and innovation awards by York's Faculty and trainees. growing the use of traditional and new media.</p>	<p>National rankings for awards by York faculty and students</p> <p>Earned media for York Awards</p> <p>Paid media for York Awards</p> <p>Number of events recognizing and celebrating York research and research awards on campus</p> <p>Positive influence on York's international rankings.</p>	<p>Deans</p> <p>Faculty of Graduate Studies</p> <p>VPRI</p> <p>Provost</p>	
Theme 5: Building Research for the Future					
20.	Develop Markham as a research-intensive campus.	<p>Include research and innovation at the forefront of Markham campus planning and implementation</p> <p>Research expectations and aspirations provided the same priority in hiring of new full time regular faculty as on the</p>	<p>Integration of Innovation York in the launch of Markham Innovation hub on Enterprise Drive as the first physical presence of York in Markham</p> <p>Research output measures specific to Markham campus</p> <p>Research intensity and research funding intensity of Markham campus compared with the other York campuses.</p> <p>Research achievement guides for hiring pre-candidacy and tenure that outline average</p>	<p>Unit leads</p> <p>Deans</p> <p>AVP Markham</p> <p>Provost</p> <p>VPRI</p>	<p>2016/2017</p> <p>2016-2021</p>

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>other York campuses. Hiring to average research accomplishment and above to integrate comparison with main campus hires.</p> <p>Provisions for graduate and postdoctoral trainees with expectations equal to those on the Keele campus.</p> <p>Campus design to include provisions for collaborative and interactive research space associated with networking and entrepreneurship spaces.</p> <p>Fully exploit the opportunity to re-imagine the relationship between campus, entrepreneurship and social and technological commercialization to maximize the potential for transferring ideas into action.</p> <p>Maximally integrate existing and new York Region partners in the research innovation space into Markham campus planning.</p>	<p>achievements of past candidates cited in recommendations for hiring and included in pre-candidacy and tenure considerations</p> <p>Graduate student, postdoctoral fellow ratios and achievements at the same level as Keele campus</p> <p>Collaborative research activities and outputs</p> <p>Flow of entrepreneurship and commercialization activities between York Campuses</p> <p>Co-localization of IY activities with York region partners within easy reach of the Markham campus</p>		
21.	Research as a driver and enabler for future York initiatives.	<p>Support ongoing development and growth of research activities and infrastructure at a level at least commensurate with other research intensive universities.</p> <p>Integrate research intensification into</p>	<p>Growth in research outputs, infrastructure and funding</p> <p>Glendon College research</p>	<p>Unit leads</p> <p>Deans</p> <p>Senior Administration</p>	Ongoing

RECOMMENDATIONS		ACTIONS	MEASURES	ACCOUNTABILITY	TIMELINE
		<p>the expansion of Glendon College and the development of partial French designation for York.</p> <p>Integrate the development of research in Health, Science, Engineering and the Liberal Arts in to the business case in support of bringing a Medical School to York.</p> <p>Building relationships with regional hospitals, health agencies and community health organizations to include building support of the Medical School ambition</p>	<p>numbers</p> <p>Growth in Health research-related outcomes and funding</p> <p>Number of partnerships</p> <p>Partnership research outputs</p>		