

## **Provost White Paper on the Future of York University**

### **Green Paper: Intensify and Strategically Expand Research Activity**

Research is at the core of the mission of universities. In the face of mounting competition York must now build on its progress over the past several years and set in motion the implementation plan necessary to transform into a top research-intensive university. We have a tremendous opportunity to mobilize the university's energies and strengths and work towards this strategic priority.

York has many internationally recognized research strengths. We have seen this frequently confirmed through peer reviews, research grants, publications, major awards and editorships of international journals. However, it is incumbent on us to build on these recognized strengths and work to promote a more pervasive and sustainable research culture throughout the university. Our university's reputation is very much dependent on, not only how the academic community regards us, but how external stakeholders, including government, and the population at large perceive our research excellence and rankings. It remains clear that our comparative numbers demonstrate York consistently ranking far below our place as the third largest university in the country- ranked 38<sup>th</sup> or below out of 50 institutions on research intensity.

This draft Green Paper builds on planning and dialogues over the past few years in the context of the UAP which placed research as its leading objective. It presents priorities, and concepts outlined in distinct sections (unit level planning, research intensification, pan university research strategy & capacity building, innovation networks & partnership strategy, and graduate capacity building) and suggestions for implementation. The key conceptual and background data on institutional level research performance are summarized in the Appendix.

### **Unit Level Strategic Planning**

We take as a given the need to support all forms of research for all faculty members and maintain our historic research strengths. However, units (Faculties, Departments and ORUs) also need to develop a strategic approach, a focus on research excellence where units strive to be globally competitive. In order to achieve this, all units should develop robust strategic research plans with an effort to integrate the intensification and promotion of research as a key component- at the centre of their academic planning. This is currently identified as a gap by the Senate Committee on Research (SCOR).

The key to developing a robust research agenda for York lies in altering our existing research culture, and expanding and intensifying research activity across the full spectrum of York's academic units. With the exercise of strategic planning, it is important that all Faculties and units not only recognize our many research strengths, but ensure the identification of high priority areas to support and build on, including capitalizing on key partnering opportunities and leveraging broader York research innovation initiatives.

Strategic development of the Faculty plan is a collective responsibility that should draw on a responsive planning culture, shared centrally and locally in the Faculties. Faculty Deans should initiate a leadership role in achieving research success within their Faculty. In working with SCOR it was determined after analysis of existing Faculty plans that there was considerable developmental work left for Faculties to do in integrating the research component within their strategic plans.

As a guideline some suggested elements of a successful research plan emerged in the work of SCOR last year and include:

- Vision & ID of Core/ Guiding Principles
- Research Priorities / Strategic Directions
- Strategies for Implementation
- Outcomes & Assessment
- Cross-Faculty Planning

A key consideration in all strategic research plans is future complement planning- an element that will assist in supporting the University's research enterprise. We must overcome our history where Faculty hiring in many units has been based predominantly on undergraduate enrolment needs. It is essential that Faculties develop a framework for strategic research appointments that help to build critical mass in areas of demonstrated or emerging strengths. A key priority must also be the keen evaluation of the research productivity of Faculty candidates during the tenure and promotion process. We need to maintain the research intensity at all levels of the professoriate, and therefore give greater consideration to the need for a successful research program among those being considered for advancement.

Evidence Base: It is suggested that all units incorporate a culture of evidence-based decision making as part of their research planning. Appropriate unit level research data ready to be captured and analyzed. This will assist in documenting success, with comparative assessments and performance benchmarking, and with sensitivity to international peer review standards. This will help units in making their case for resources to assist in efforts toward research intensification and research excellence.

What can we do?

-Provide Deans and chairs with the means to establish incentives to further drive research success within the Faculty.

-Each Faculty should establish a research group/ committee with a focus on achieving research excellence and monitoring the implementation of the unit(s) strategic research plans.

-Each Faculty should have an Associate Dean whose main responsibilities are research focused, and a Research Officer who has a robust role in working with faculty members in generating grant submissions and aligning their efforts with those of the Office of Research Services in a matrix organizational approach.

- The elements of a successful research plan should include specifics on areas of research strength/ themes as priorities to build on, connecting research to a unit's academic priorities, and targeted support for attracting research income for specific grants/ initiatives.
- More attention should be given to the role of by senior scholars who have strong research records as mentors for recently appointed Faculty members.
- Additionally, a communications plan and workshops need to be a regular part of the unit's activities.
- There also needs to be a clear relationship between success in achieving research priorities and to IRP/ budget allocations.

Other Suggestions?

## **Research Intensification**

Institutions across the globe continue to make significant advancements in their research and, in spite of our progress, the gap between us and many of our competitors continues to widen. If York is to compete as a serious research institution it is crucial that we are able to attract faculty with established research excellence, junior faculty with exceptional research promise, and outstanding graduate students. To do this we must have a pan university commitment to improving our research culture, intensity and performance both by bringing such scholars to York and by ensuring that all possible sources of support are devoted to this complex strategic goal. Now is the time for decisive action. Without it, York University can easily slip into a residual category of an undergraduate teaching institution, confirming the principles of tiering espoused by our competitors within Ontario and across Canada.

There are a variety of valid measures used to evaluate and quantify the complexities of research performance. However, data on research income is the measure that is widely used by our external stakeholders and policy makers as a key measure of performance for the university sector. This measure affects our reputation and as such we must improve on this playing field. we are closely bound to them as an indicator for research comparisons. Income performance measurements also have a direct bearing on key funding allocations and supports that are provided by government such as - CRCs and Indirect Costs of Research.

We do recognize, as a measure that income is not always the most complete means of appraising and capturing York's unique and broad range of academic achievement. We are also undertaking a bibliometric initiative to document and showcase York's evidence-based research strengths, with some concentration on Humanities disciplines.

However, it should be stressed that encouraging our colleagues to understand the importance of external grants and advancing their participation in all forms of externally-sponsored research is fundamental to our research reputation. A particular challenge at York is that we fail to take full advantage of the capacity of our SS&H faculty, an obvious strength upon which we need to build. In fact, fewer than one in five SS&H full time faculty members hold external research funding. Increasing participation, even modestly, as illustrated in figure 10 and 11, produces large gains in our research income as a consequence, with impacts to increased CRCs and indirect costs.

Policy impacts: Distribution of research funds has an increasing tie to strategic priority research areas defined primarily by the federal and provincial governments. Priority areas where success is particularly critical to Canada's competitiveness, global positioning and economic return are viewed as fundamental. However, so much of what drives social change and fuels the modern economy is or should be derived from and responsive to social sciences and humanities theories, critiques and analyses. We have established the first institutional service for knowledge mobilization to engage external partners and to inform public policy and social programming, translating social innovation to economic innovation and enhanced quality of life and cultural engagement. This is intended to provide the intellectual space for independent critical analysis and policy development. York is poised to take advantage of the broadening government agenda, contributing not only our S&T research but leveraging the tremendous opportunities for our SSH research agenda as well.

What can we do?

- make an institutional commitment to make regular and systematic increases annually in our externally sponsored research participation. For example, a regular and gradual increase by 10% will make considerable gains in SSH research income. Increasing our leadership role in the lucrative 'big' science competitions by only 5% will see a payoff of nearly 15% in external funding.
- restructure system and remove disincentives to fully integrate graduate students in research and professional opportunities.
- In evaluating new measures VPRI is working with units to collect and analyze data on internationally recognized research output measures with a particular focus on bibliometrics. Four departments are involved, including 2 in Humanities
- continue to discuss with governments a broader agenda for research which includes social policy impacts- and given York's historic interdisciplinary strengths we can better leverage our research strengths and facilitate capacity building.

Other Suggestions?

## **Pan University Research Strategy & Capacity Building**

Building on the unit level strategic plans and continuing to provide support for basic research across the academy, we then turn our focus to developing and increasing the institutional scope and capacity of our research. A pan-university approach would feature research excellence and strong collaboration across disciplines, drawing on York's tradition of interdisciplinary research, allowing us to address some of the most pressing and complex issues facing society, and creating new research opportunities.

We can build stronger research capacity by expanding on our successful history of research that crosses traditional academic boundaries. This will allow us to compete more fully with leading research institutions who have more critical mass than us in most disciplinary areas and will enable us to respond to complex scientific and social research issues requiring creative solutions. Such an institutional approach will allow us to better leverage our research strengths and strategically establish a different research paradigm.

In building this approach, we draw on some of our very successful Research Centres and Institutions that have taken the lead in a number of collaborative research initiatives, and facilitated the formation of multidisciplinary teams to conduct large scale international projects. We cite but two such examples- vision research at York is a focal point for exchanges between many disciplines, uniting researchers with expertise in psychology, biology, computer science, engineering, kinesiology and health science to produce research that is globally competitive and has multidisciplinary impacts. Refugee and migration studies is another instance where top level research is dedicated to diverse issues integrating many disciplinary areas such as law, sociology, political science, education, and health studies, informing a wide range of public discussion as well as policy development and practice innovation. We must develop and harness more innovative research with this interdisciplinary approach.

What can we do?

- There is no doubt that we have the research in place to make large strides in multi-pronged research initiatives; we just need to seize on the opportunities to combine efforts and ignite our strengths.
- we must coordinate roles that ORUs may play as an active part of increasing our research capacity building.
- making key academic appointments in support of research excellence
- building post-doc capacity.
- making evidenced based evaluations and rewarding recognized areas of research excellence in existing areas, keeping open opportunities to invest in emerging areas

Other Suggestions?

## **Innovation Networks & Partnership Strategy**

At York we recognize that knowledge has greater value when it is shared and implemented by engaging researchers and graduate students with communities and organizations that can contribute to and benefit from York's research. The key to developing robust research partnerships lies in both relationship building and matching our research strengths with the needs of innovators, entrepreneurs, policy makers and community groups. This type of value added engagement can be achieved through partnership in regional innovation networks.

This approach is clearly echoed in the recent Federal and Provincial innovation agendas. A recent report the Council of Canadian Academies found that more opportunities must be seized to more effectively cultivate horizontal connections between scholars and the private, public and not-for-profit sectors in significantly benefiting innovation and productivity growth in Canada. Additionally, partnerships through careful coupling of SS&H research resources helps to better inform public policy solutions to complex, large-scale social and cultural issues, facilitates capacity building among all partners and produces more substantial relationships with community groups.

Given the changing context of research both federally and provincially, our next step should be to set out and build a comprehensive and sustainable approach to strengthening our research opportunities and through externally partnered research and regional innovation networks. We believe in forging strong external linkages to share knowledge and discoveries with external organizations and allow the community to benefit from research expertise available at York, ultimately aiming to inform policies that impact our community and society. This would also provide researchers across the University more opportunities to diversify sources of research funding through effective collaboration, to grow sustainable research programs, and to build York's research reputation within the larger community. The opportunities afforded by external partnerships for all our researchers across disciplines are limitless if we can harness capacity to implement this with innovative vision.

Overall, the objectives of this approach would be to:

- Enhance York's research reputation
- Diversify external sources of research income
- Impact economic growth
- Impact social & cultural well-being
- Strengthen institutional opportunities, especially within York Region, the fastest growing municipal region on our doorstep.

What can we do?

-By developing and better coordinating important and mutually beneficial relationships, we can seize new opportunities for larger shares of research competitions, as well achieving true research success by harnessing the momentum of our promising initiatives and sustainable institutional programs.

-York needs to work towards better leveraging and building our partnerships.

-We have a remarkable opportunity within our neighbouring community of York Region, meaningfully connecting our research with the many industries and social organizations concentrated there- impacting its technical, social and economic development.

-E.g.: to date, we have had a remarkable response from Faculty members and seen a broad range of involvement from across the University in further deepening institutional partnerships. Some of our partnerships include a variety of sectors from business to municipality to hospital to community agency -IBM, sanofi Pasteur, Town of Markham, York Region, regional hospitals, school boards, the Human Services Planning Coalition, and the United Way York Region.

Other Suggestions?

## **Graduate Capacity Building**

Graduate students are critical to research activity at York and comprise the largest group of researchers at York. Whether working independently or in research teams, or in some cases as employees, our ability to advance research intensiveness at York is dependent on recruiting and supporting quality students at the master's and doctoral level. And in many research areas, postdoctoral fellows have become critical to the success of research teams and recently the *Times Higher* has begun to create lists of the best universities at which to hold a postdoctoral fellowship.

Currently, and in an environment framed by the provincial government's Reaching Higher strategy, we have the second largest graduate program in Ontario. The gap between us and those nearest to us has however been noticeably shrinking which has triggered discussions about quantity vs. quality. The ratio of graduate to undergraduate students – around 10% – is considerably less than what is usually found at research-intensive universities (~ 20%). But this begs the question of whether such ratios are meaningful – if they are, then what should we be aiming for?

Retaining our position has not come without its own costs. To encourage students to accept offers of admission, York committed itself to guaranteed minimum funding packages at the masters and doctoral levels and programs were encouraged to stretch themselves to reach the targets. This partially explains the upward trend in the numbers of our graduate students whose undergraduate degree came from York. Until now, the packages offered were sufficient to attract numbers of qualified students, and it would appear that other universities have had to follow our lead though they are not necessarily as public in advertising fixed packages. Similar to other larger universities in the province, we have found ourselves lagging behind our targets for master's students. We have on the other hand been quite successful in reaching our PhD targets though we now face the risk of overshooting those targets, which potentially will lead to unfunded BIUs.

The packages were calculated on the basis of what was available from all existing funding sources (TA, RA, GA, scholarships etc) with any growth above and beyond 2005 admissions covered by new funding from the centre. Consequently, we have had reduced flexibility when dealing with students who have received more lucrative offers from elsewhere as internal monies have been largely committed to making up these packages. Moreover, and this has had a direct impact on researchers, minimum packages assumed researcher contributions which has meant that researchers cannot easily recruit the students they want, or pay those students substantially above the minimum package guarantees. Not surprisingly, researchers have expressed frustration with this. Yet at the same time, there are a good many people on campus who are committed to an equity model of funding.

We are doubly disadvantaged when it comes to international students – a critical element in any graduate program. Not only can we not count international students towards the targets established with the Government of Ontario, we also receive no government funding for them, yet to be competitive in the increasingly globalized world of higher education, we need to fund them at the same levels as our domestic students. This is most markedly true in the sciences (recent data from the US shows that over 35% of the graduate students in math and physics are foreign-born).

With few exceptions and these are either temporary aberrations or in disciplines where competition is particularly intense, the entry GPA of our graduate students has not dropped. But nor has it improved. The fact that our quota of nominations for SSRHC and CGS masters programs has been increased in each of the past two years is a more promising indicator of the quality of our students as well as an acknowledgment of the renewed efforts being undertaken to coach and mentor our students when applying for such awards. We have also witnessed an upswing in our success with NSERC master's and doctoral fellowships. Yet only 5% of the applicants to OGS come from York – we make up more than 10% of the system.

As far as our current quality is concerned, there is certainly plenty of evidence of longstanding strengths at York, and whether it is the number of scholarships held or the number of students placed in academic positions elsewhere, York's reputation at the moment is generally good. But as competition for top students intensifies, the relatively low numbers of international students and our seemingly increased dependency on students from the GTA at the graduate level are reminders that we cannot be complacent in our claims of being a major graduate program in Canada. More attention needs to be paid to our attrition rates as well as times to completion.

What can we do – some options to consider?

- Develop a strategy to make York more appealing to postdoctoral fellows
- Identify appropriate measurements to assess quality graduate programming and then apply them so as to assist decision-making at the program and the faculty level
- Dispense with standardized minimum packages and delegate more responsibility to the programs to devise sustainable funding packages which will allow them to concentrate on recruiting top quality students
- Allow graduate students to receive funds from researchers without it counting as part of any pre-set package



- Designate funds that will allow us to recruit international students
- Distinguish our graduate programs from other schools in Canada/the US, beyond that which is determined by the quality/interests of the faculty associated with the program, by considering the following
  - More specialized degrees – practice oriented degrees such as professional science masters
  - International opportunities – dual degrees, cotutelles
  - Internships
  - More attention to professional/transferable skills
  - Combined honours/master's degrees – the 4+1 model

Other Suggestions?

## Appendix:

Figure 1:

### Research Intensity Performance 2008-2009 – York University

Performance Measure	Performance by Eligible Tri-Council			Total
	CIHR	NSERC	SSHRC	
Number of FT faculty members (as of October 1st)	87	244	1093	1424
Number of FT faculty members holding an external grant or contract	42	170	217	429
Percentage of FT faculty members holding an external grant or contract	48.3%	69.7%	19.9%	30.1%
Number of FT faculty members holding a tri-council grant	36	168	173	377
Percentage of FT faculty members holding a tri-council grant	41.4%	68.9%	15.8%	26.5%
Total FT faculty research income from all sources	\$7,471,791	\$13,274,447	\$17,758,176	\$38,504,414
FT faculty research income intensity	\$85,883	\$54,403	\$16,247	\$27,040
Total FT faculty research income from the tri-councils	\$4,411,428	\$6,994,699	\$7,265,794	\$18,671,921
FT faculty tri-council research income intensity	\$50,706	\$28,667	\$6,648	\$13,112
Number of tri-council applications by FT faculty members	72	127	263	462
Total research income for retirees, adjuncts and others	\$32,936	\$666,983	\$1,215,464	\$1,915,382
Number of tri-council applications by retirees, adjuncts and others	0	9	21	30

Figure 2:

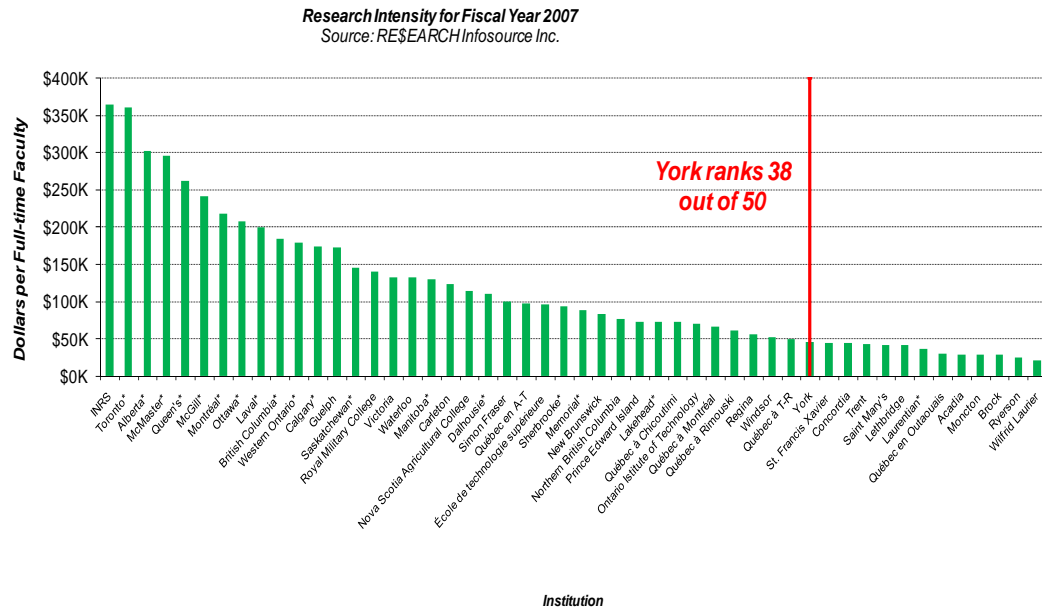


Figure 3:

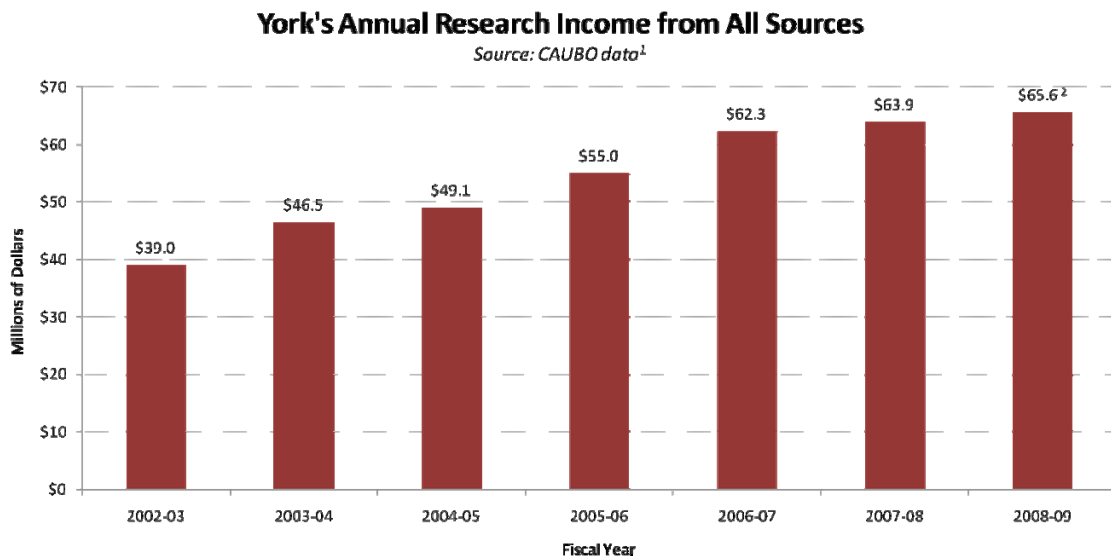


Figure 4:

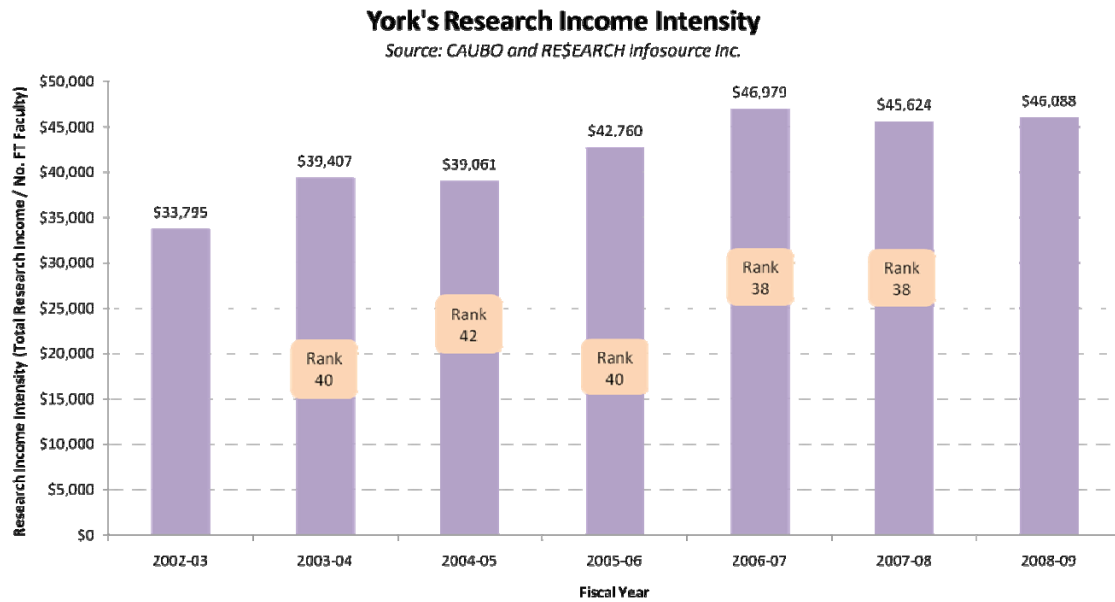


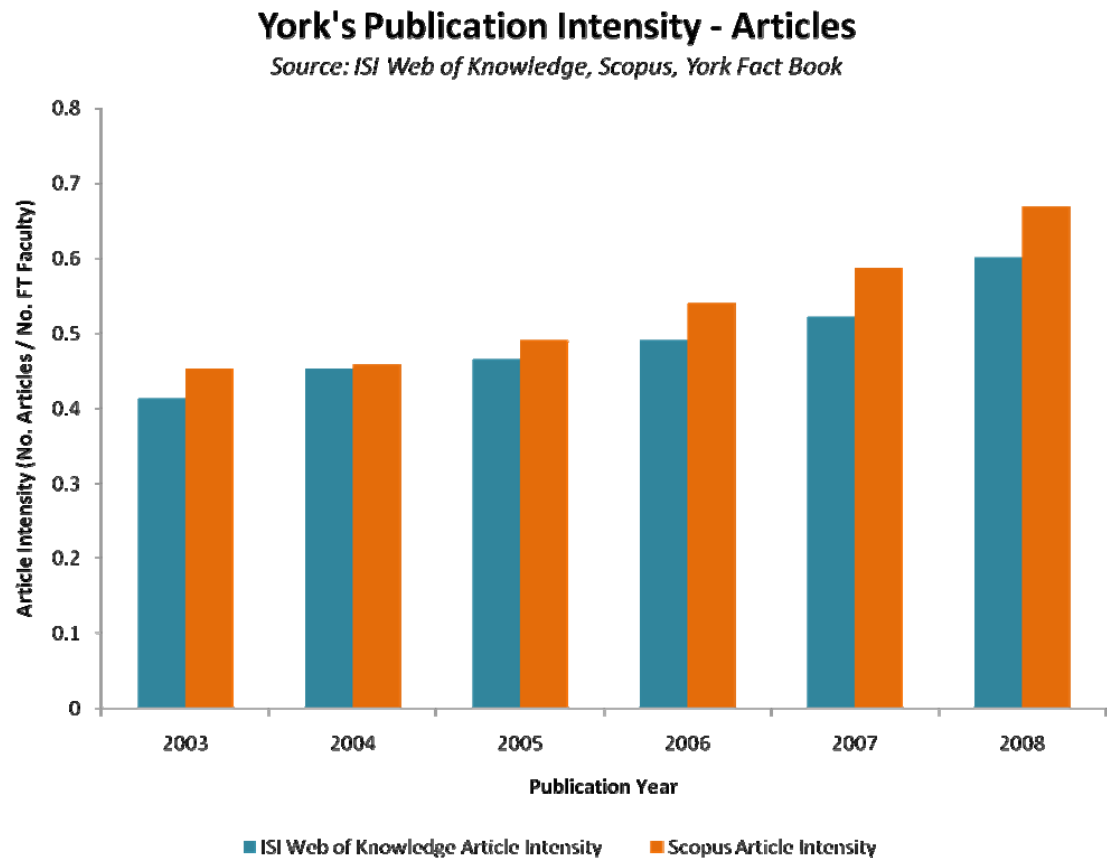
Figure 5:

**Research Universities of the Year Ranking - Comprehensive\***

Source: RESEARCH Infosource Inc., Fiscal Year 2007

	Financial Indicators		Publication Indicators	
Institution	Total Sponsored Research Income Rank	Faculty Research Intensity Rank	Total Number of Publications Rank	Publication Intensity Rank
Guelph	1	1	2	2
Waterloo	2	3	1	1
Victoria	3	2	3	4
Carleton	4	4	6	5
Simon Fraser	5	5	4	3
Québec à Montréal	6	8	8	12
<b>York</b>	<b>7</b>	<b>11</b>	<b>5</b>	<b>11</b>
New Brunswick	8	6	9	6
Concordia	9	12	7	7
Windsor	10	10	10	8
Regina	11	9	11	10
Lakehead	12	7	12	9
Laurentian	13	13	13	13

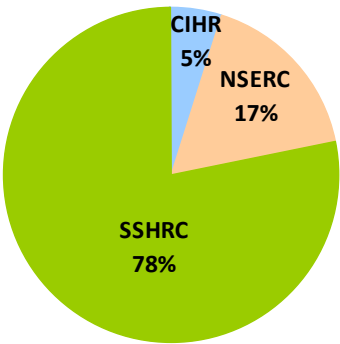
Figure 6:



Overall balance:  
Figure 7:

**Distribution of York's FT Faculty Members  
by Eligible Granting Council**

*Source: VPRI & Office of Institutional Research & Analysis*



\*SSHRC eligible denotes FT faculty with research interests that align most closely to the SSHRC funding programs (similarly for CIHR and NSERC)

Figure 8:

**Approximate National Distribution of Research  
Dollars by Council - FY 2008-2009**

*Source: Tri-Council award search databases*

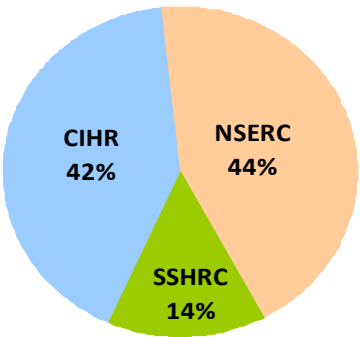
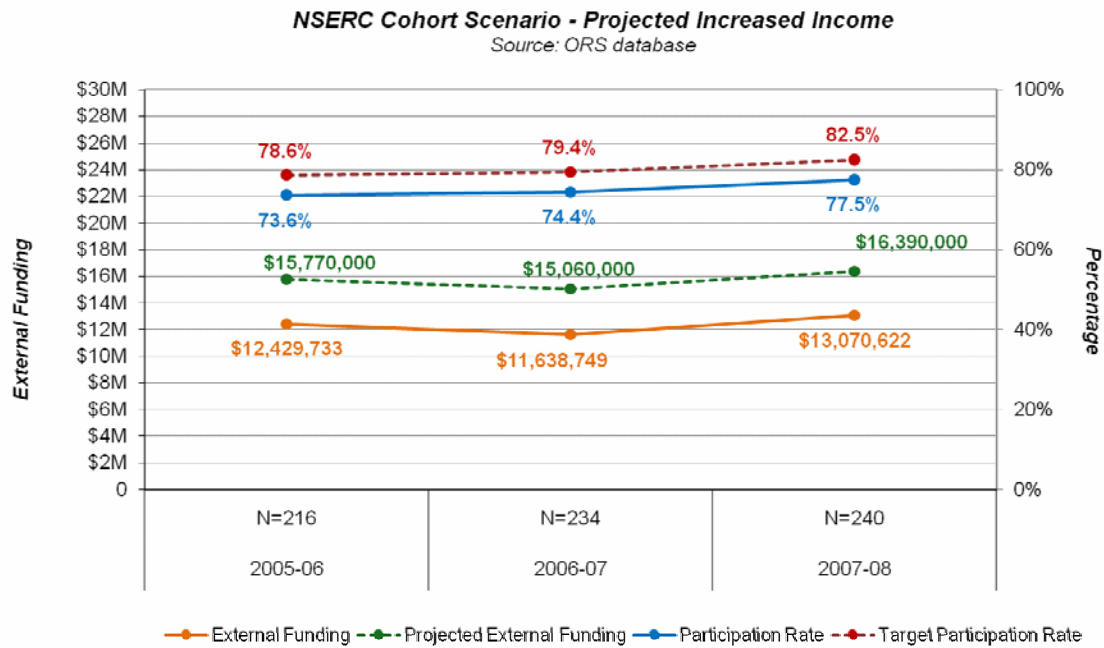




Figure 10:



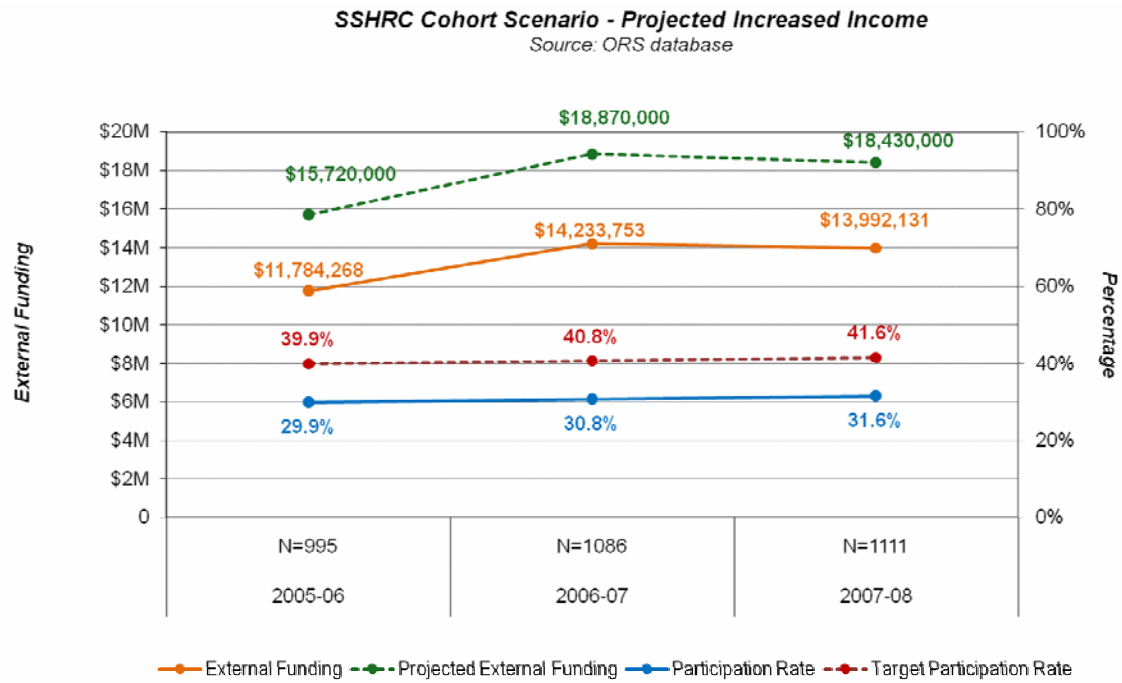
**Assumptions:**

- 1) Increase participation rate by 5% and success rates stay the same
- 2) Enhanced success in “big” science competitions

**Note:** External funding includes funding from all sources for the NSERC cohort.



Figure 11:



**Assumptions:** Increase participation rate by 10% and success rates stay the same

**Note:** External funding includes funding from all sources for the SSHRC cohort.

Figure 12:

