

# Universities: Engines of Urban Economic Development

**IEDC 2017 Annual Conference.**  
Sheraton Centre Toronto Hotel

Dr. Meric Gertler  
President  
University of Toronto



UNIVERSITY OF  
**TORONTO**

Thank you, Professor Weinberg for your kind introduction.

It's a great pleasure to join you today. I am delighted to welcome those of you visiting Toronto from out of town. I am also delighted to see such a strong University of Toronto presence on your conference program, including Janice Stein on Sunday afternoon, Richard Florida at lunch today, and our Chancellor and a truly great Canadian, the Honourable Michael Wilson on this panel this morning.

As Professor Weinberg indicated in his introduction, I have a somewhat novel dual identity: on the one hand, I have spent much of my academic career studying the economies of urban regions, and the factors that make cities dynamic, resilient, and prosperous. At the same time, I am now a university President, the CEO of Canada's leading, largest, and most research-intensive academic institution.

And I am continually struck by how often these two identities overlap. This overlap will be the theme of my remarks today. In particular, I want to address this question: How do universities contribute to urban economic development?

Of course, I would expect this audience to know a lot about this question already. I'm sure many of you work with post-secondary education institutions on a regular basis. This morning, I want to get beyond some of the more obvious answers to explore other dimensions to this issue that are less widely appreciated. And to do so, I will draw on examples from the institution I know best, the University of Toronto.

Perhaps the most conventional way of thinking about how universities contribute to urban economic development is to measure the 'economic impact' of a university on its regional economy.

So let me recite the pertinent figures for the University of Toronto:

- We enroll approximately 85,000 students across our three campuses – our historic campus in Downtown Toronto, and our two newer campuses in Mississauga and Scarborough.

- Our total employment is over 21,000. I should point out that this number does not include the more than 5,800 clinical faculty working in our nine fully affiliated academic hospitals
- U of T's annual research budget from external funding is north of \$1.2 billion.
- And U of T's annual operating expenditures total \$2.8 billion, and that's not counting most of the research budget.
  - To put that last number into perspective, \$2.8 billion is equivalent to the total annual expenditures of the City of Edmonton, Canada's 6<sup>th</sup> largest municipality.

Using standard economic multiplier methodology – adding up the direct, indirect and induced impact of the spending by U of T faculty, staff, and students, and the procurement of goods and services by the university's administration – the University of Toronto's economic impact on the Province of Ontario is estimated at well over \$12B *annually*.

# University of Toronto

**\$12B**

Another obvious way of answering the question about how universities help shape the economies of cities is “By building physical infrastructure”. Indeed, this is a very literal manifestation of city building, as one glance at U of T’s recent wave of capital construction will attest.

Since 2012, the University of Toronto has added or is completing an astonishing \$1.2 billion in new or substantially renovated buildings, many of them award winners for their architectural merit or sustainability measures. This is a feature we share with universities around the world, which contribute iconic old-world beauty and new-world design to their host regions.



But I will argue that these impacts – our annual economic impact and our capital projects – impressive as they are, *far understate* the University of Toronto’s importance and impact on our region and nation.

Let me highlight *six other* vital – and, I would suggest, *more fundamental* – contributions that universities make to the economic development of their host regions.

**First**, and most importantly, universities are in the talent business. Producing human capital represents the single biggest contribution universities make to their host regions. Educating students is by far our most important form of ‘technology transfer’.



More than 16,500 students graduated from the University of Toronto last year, joining a body of alumni numbering over 550,000 worldwide. Such an educated workforce is an obvious benefit to employers.

In this connection, and if I may be permitted to be a bit un-Canadian for a few moments, let me share with you the results of the most recent annual survey by the London-based Times Higher Education group, in which they poll the opinions of some 5,000 recruiters and managing directors of human resources companies around the world, asking them to rank the graduates of the world’s universities in terms of their employability.

# University Employability Ranking

1. Cambridge
2. Oxford
3. Technical U Munich
4. Tokyo
5. HKUST
6. University of Toronto

Times  
Higher  
Education  
2016

“Best public universities  
for delivering work-ready  
graduates.”

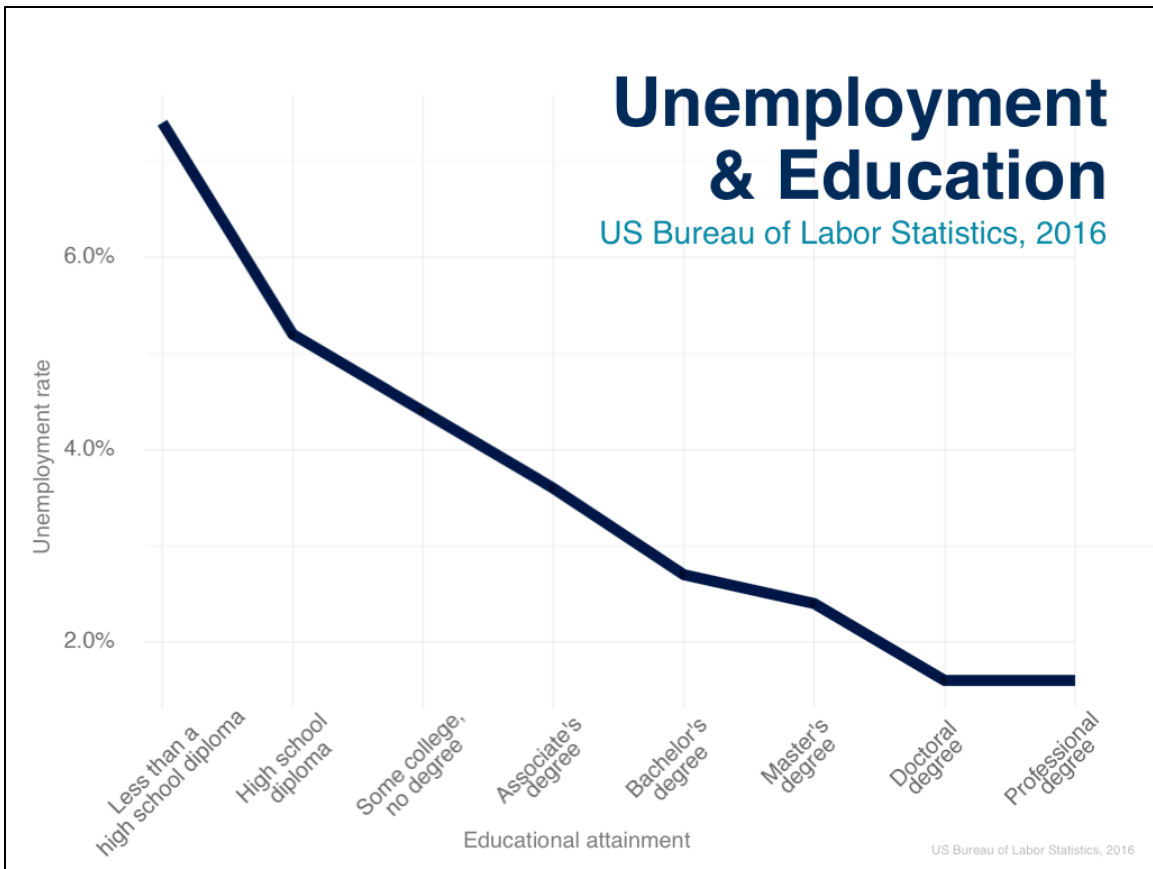


As you can see from the slide, U of T is 6<sup>th</sup> among public universities worldwide, and we are 14<sup>th</sup> overall. The University of Toronto is also the *top public institution in North America*, ahead of UCLA, Berkeley, Michigan and many other great public universities.

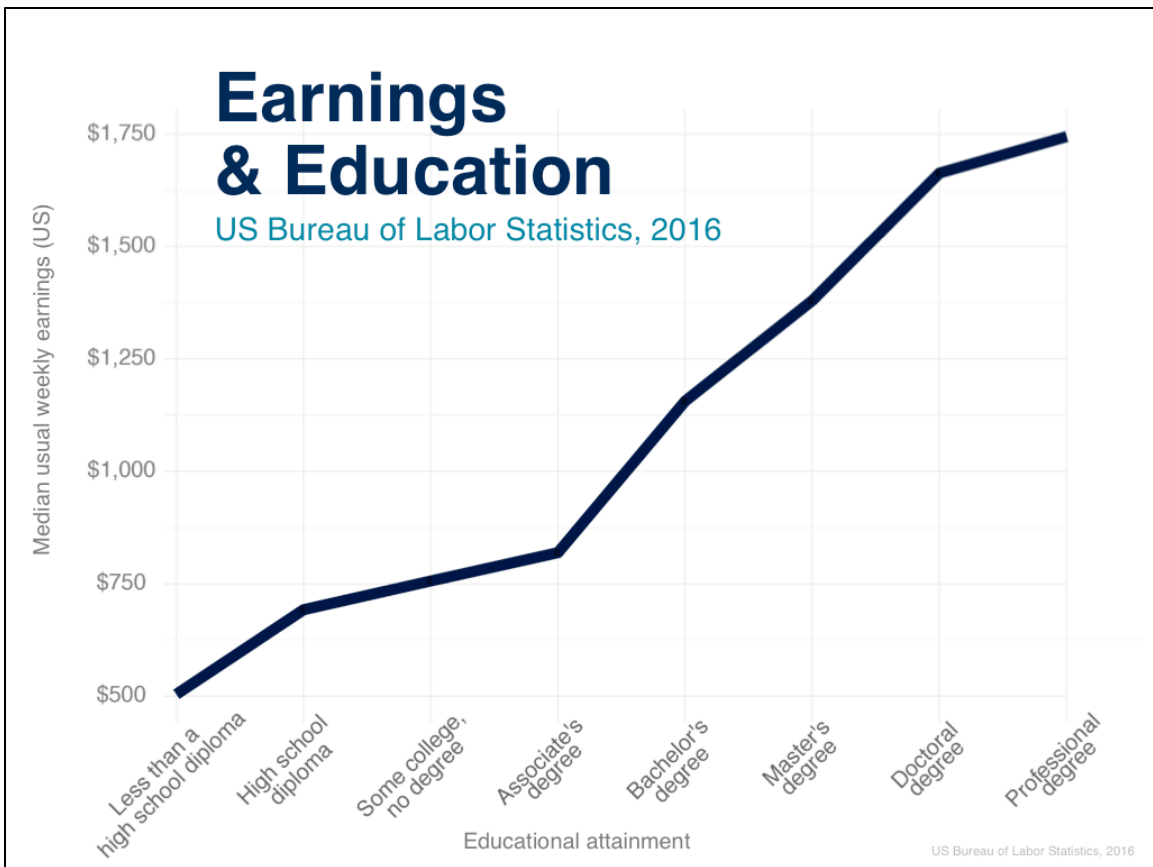
One striking lesson I take from this is that employers around the world seem to be keenly attuned to the *quality* of individual university degrees, which are not all created equal.

I'll return to this point in a few minutes. Nevertheless, a more general point is clear: universities play a vital role in preparing students for employment and future prosperity. It has been demonstrated conclusively that unemployment rates and earning potentials vary *dramatically* with educational attainment.

As you can see from this slide, the best antidote to unemployment is a university degree. Here I am using US data, which show that unemployment rates are inversely related to educational attainment.



And as you can see from the next slide, median weekly earnings are directly and positively related to educational attainment.



These data have profound implications for regional economic development and for the role universities play in it.

Moreover, a college or university education is important for more than just getting a job. We know that all sorts of outcomes – related to health, social mobility, poverty, retirement security, civic involvement, and more – are meaningfully correlated with higher education. And these are all factors, of course, that contribute to economic development and prosperity.

**Second**, universities like the one I have the privilege to lead are critically important as *portals of opportunity* for large numbers of young people.

The University of Toronto and the Province of Ontario invest heavily in student aid and access.



The image on the slide is from orientation week this year. About a quarter of our undergraduate students come from families with household incomes of less than \$50,000 a year. 20 percent of our undergraduate students are the first in their



family to attend university. And since we happen to be situated in a region in which *fully 50 percent of the population was born outside of the country*, U of T is the most culturally and socio-economically diverse university in Canada – and one of the most diverse anywhere.

My larger point is that public higher education is a vitally important driver of social mobility and regional prosperity. It is one of the primary mechanisms by which newcomers and those from economically and socially disadvantaged backgrounds become full participants in our society. And in an era of an aging workforce, this is of obvious importance.

For sure, there are substantive conversations to be had about tuition fees, public support for education and research, and student debt, but it is nonetheless true that education has never been more accessible to more people worldwide, regardless of socio-economic or demographic factors. According to the United Nations there were *100 million more people* enrolled in tertiary education in 2012 than there were in 1999.

Needless to say, this is good news for economic development.

**Third**, returning to the theme of talent, universities also *attract* talent as well as educate it. Fully one half of U of T's faculty are hired from outside of Canada, and roughly one quarter of our students come from abroad. We welcome international students from a growing list of countries, at a time when the US, UK, Australia and others seem to be heading in the opposite direction.

The next slide, for example, shows members of Professor Peter Herman's photonics research team – with members from Canada, China, Turkey, Iran, England, India and more.

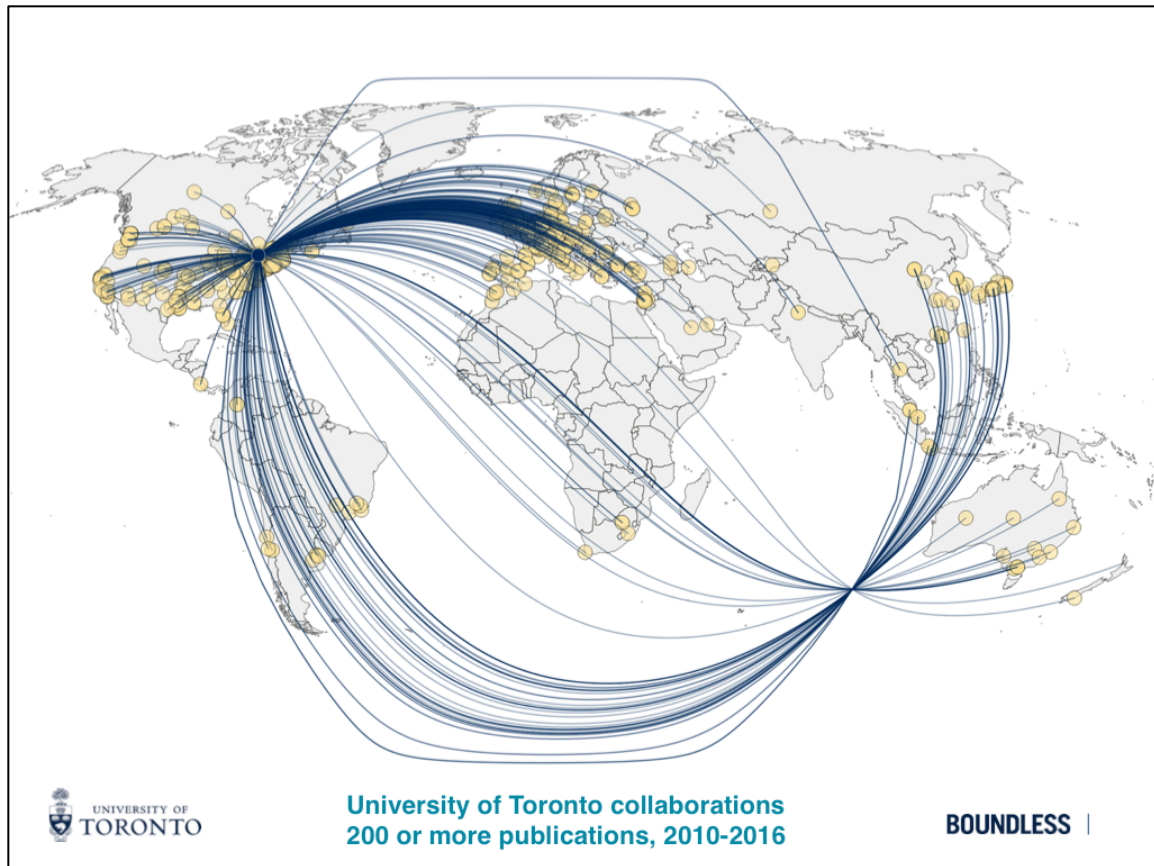
These students and researchers join a vibrant multicultural region here in Toronto, attracted by – and contributing to – not just our universities, but also the city's cultural buzz and social harmony, our safe and vibrant neighbourhoods, our stable property markets, our parks, hospitals and public schools, and our global reputation as a welcoming place. Diverse local populations also bring vitality, energy, and ingenuity to the city, helping create a deep, dynamic and entrepreneurial labour force.



**Fourth**, even as U of T helps attract the world to Toronto, our research helps *connect* Toronto to the world. In 2016, U of T faculty and students published more scholarly research than any institution in the world except for Harvard. Those publications involved more than 9,000 international collaborations.

This collaboration is crucial to the success of our host region. Quite obviously, Toronto's present and future prosperity, like that of all cities, depends on our ability to access and use knowledge produced not just locally, but also in *other* leading centres of research and innovation around the world. And this kind of inter-university collaboration is one of the primary vectors for this kind of knowledge circulation.

This map shows U of T's collaborations around the world between 2010 and 2015 that generated at least *200* peer-reviewed publications.



Moreover, there is growing evidence that these global knowledge networks do much more than just *circulate* ideas and discoveries: they also *catalyze the production* of new ideas and discoveries. In doing so, institutions that collaborate internationally enhance the competitive advantages of their host regions.

The recent literature on creativity, collaboration and innovation supports this idea. It demonstrates that those institutions and regions that collaborate most intensively with their global peers generate especially influential research, file a larger number of global patent applications, and attract a greater share of venture capital funding – directly benefitting the local urban region.

**Fifth**, highly educated, connected talent and world-class research also attract investments and businesses from around the world, particularly in knowledge-intensive industries.

Toronto provides a nice example again. Since 2015, Johnson & Johnson’s J-Labs (pictured here), Thomson Reuters, Bayer and Versant Venture’s BlueRock Therapeutics, and AutoDesk have all announced new or expanded R&D

investments in the city. Our new Vector Institute for Artificial Intelligence has attracted partners such as Google, Uber and Nvidia. And there are more R&D-related investments in the pipeline. All of these firms have cited the quality of the local talent and research being produced by our local universities, and the innovation landscape in Toronto more broadly, as primary motivators for their decision to locate here.



Notice that government subsidies and tax incentives, though often helpful, were not the driving force in these moves. This is entirely consistent with the observation of former New York City Mayor Michael Bloomberg, who has argued that “talent attracts capital far more effectively and consistently than capital attracts talent”.

**Sixth**, and finally, let me say something about Toronto’s entrepreneurial ecosystem. In many ways, entrepreneurship pulls all the foregoing threads together: talent, research, connections, investments, and opportunities. The University of Toronto, like many of the world’s great research-intensive institutions, is driving a huge surge in start-up activity.

The metrics are impressive. (And I will once again be a bit un-Canadian here).

<b>Total startups reported to AUTM</b>		
Single reporting institutions (excludes systems), common AUTM definitions, 2013-2016		
Rank	Institution	#
1	University of Toronto	64
2	University of Pennsylvania	63
3	MIT	62
4	Stanford	60
5	Columbia	59
6	Purdue Research	57
7	University of Utah	55
8	University of Washington	50
9	University of Florida	47
10	University of Minnesota	45

Since 2013 the University of Toronto community has created *more startup companies than any single institution in North America*.

- The slide here shows the top 10 universities in North America by startups created in the past 3 years.
- The data here are based on the common AUTM definition of a startup company.

The burgeoning local innovation ecosystem helps explain our successes:

- At U of T alone, there are 10 startup accelerators or incubators on our three campuses...

- And over 170 entrepreneurship-related academic courses with nearly 12,000 students enrolled in them.
- In just a three-year period – between 2011 and 2014 –members of our community filed more than 300 licenses, more than 300 new patent applications, and registered over 1,100 inventions in more than 60 fields.
  - About three-quarters of U of T inventions were co-developed by students or post-doctoral fellows

Beyond U of T, one can point to the MaRS Discovery District, OneEleven, Ryerson’s DMZ and other key assets in this dynamic innovation ecosystem.

Together, they comprise the very essence of urban resiliency, reshaping old industries or creating new ones. Many of U of T’s startups are disrupting traditional sectors and shifting entire economic paradigms.

- For instance, one can point to several examples that are leveraging Toronto’s strength in machine learning to transform business models in multiple sectors – such as DeepGenomics and Cyclica in medicine, BlueJay Legal and ROSS in legal services, and Sensibill in FinTech.

Creating the conditions for urban re-invention and resiliency is perhaps the most fundamental contribution universities make to urban economic development. Think of the evolution of London or New York or Boston or San Francisco or Pittsburgh or Singapore and the role that local universities and research institutions have played in their transformations.

Toronto, too, has reinvented itself continually over time. We’ve gone from textiles and tanning, to farm implements and food processing, and more recently to finance, fintech, pharma, film-making and machine learning.

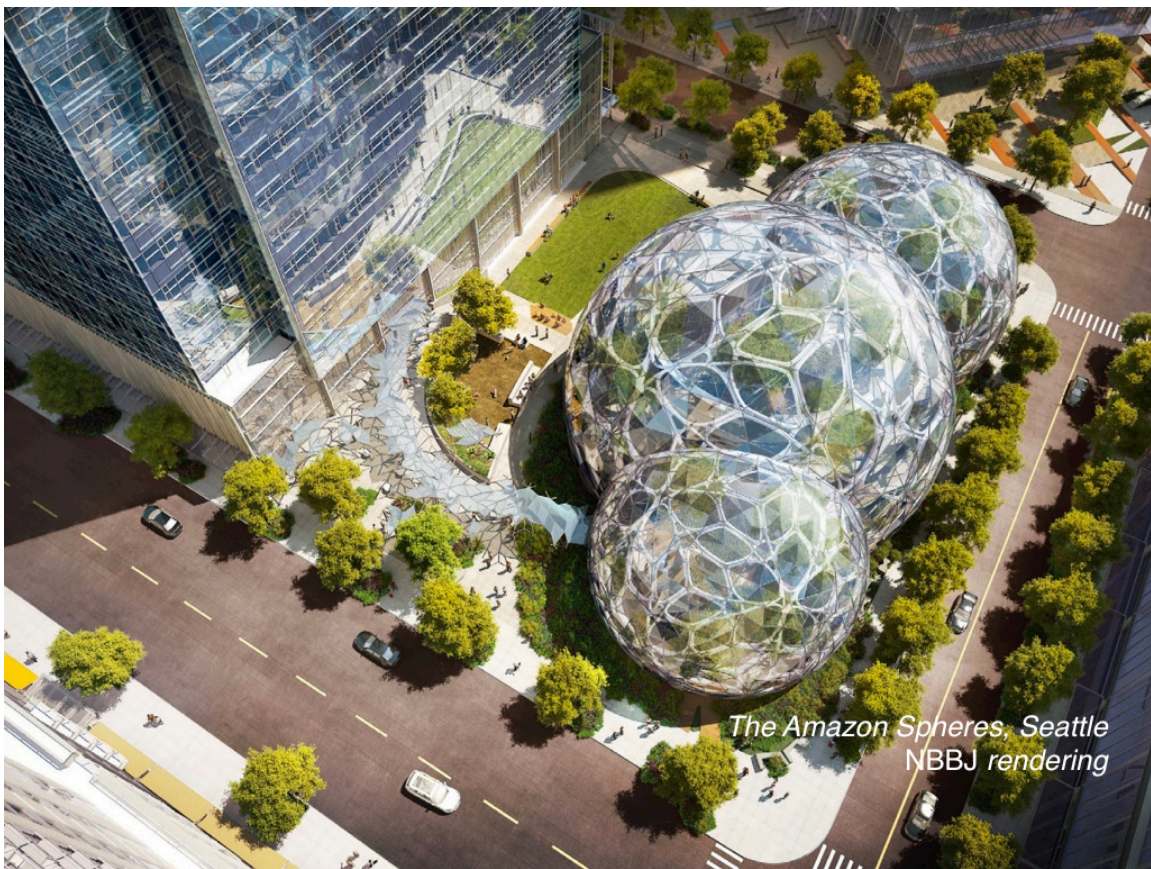
I should highlight an important point here. Universities like my own promote urban economic development for at least two reasons.

As a public institution, we have a social responsibility to do this. But it also comes down to a matter of *enlightened self-interest*.

The partnership between university and city *benefits both partners*. The more we do to make the Toronto region a better place in which to work, study and live, the more we do to help ourselves attract great talent from across Canada and around the world. In this sense, the relationship between a region's post-secondary institutions and their host city-region is *fundamentally symbiotic*. A strong University helps build a strong city, and *vice versa*: a strong host city helps a university excel. This partnership drives regional prosperity.

Let me conclude my remarks with an observation and a proposal.

First, the observation.



The Amazon Spheres, Seattle  
NBBJ rendering

As I'm sure you all know, one month from today, October 19, is the deadline for bidders to respond to Amazon's HQ2 RFP.

Amazon has created a veritable buzz storm with the announcement that it is planning to build a second headquarters in North America requiring up to 8

million square feet of space for as many as 50,000 well-paid employees. Amazon expects to make more than \$5 billion dollars in capital expenditures over the course of the project.


The selection process for a suitable location is going to be intense – and I would hazard to guess that many of the people in this room this morning are actively engaged in these sweepstakes.

Let's look at the criteria Amazon is seeking. I am quoting here in several places directly from the RFP.

## **Amazon's HQ2?**

**A checklist for modern, successful cities**

- Large, stable, business friendly metro region of 1M+ people
- Incentive programs at the state/province and local level
- A deep, highly educated labour force
- A strong university system, broad disciplinary strengths, STEM
- Globally connected, robust infrastructure along multiple modalities
- A diverse cultural and community environment
- A high quality of life, quality of place

 UNIVERSITY OF TORONTO

- A metropolitan area with more than one million people with a stable and consistent business climate and an expeditious timetable to development.
- Incentive programs available for the project at the state/province and local levels.
- A highly educated labour pool is critical.



- A strong university system is required with broad disciplinary strengths, including STEM
- Global connections and a robust transit infrastructure including traditional modes such as an international airport, major highway corridor and arterial roadway capacity.
  - But also additional connectivity options like bike lanes, trams, metro, bus, light rail, train, and other options.
- A compatible cultural and community environment for long-term success.
  - This includes the presence and support of a diverse population, excellent institutions of higher education, local government structure and elected officials eager and willing to work with the company, among other attributes.
- A community where employees will enjoy living, with recreational opportunities, educational opportunities, and an overall high quality of life.

As Bloomberg News recently noted, this wish list is a “blueprint for [North] American cities”. They also pointed out that few cities could meet all of the criteria Amazon wants, and they singled out just six that fit the entire bill: Toronto, Boston, Washington, Atlanta, Dallas and Denver.

Whether or not you agree with this assessment, let me point out that every item on this list is one that a university like the University of Toronto – or MIT, Georgia Tech, the University of Texas, and so on – helps impart to its host urban region.






True, universities might not help with government incentives. But look at the rest of the list:


- a deep talented workforce;
- a world class university with deep disciplinary excellence and a strong STEM community;
- a globally connected hub;


- cultural diversity;
- and high quality of place with hospitals, vibrant neighbourhoods, stable markets, cultural and recreational interests and more.

# Amazon's HQ2?

## A checklist for modern, successful cities

- Large, stable, business friendly metro region of 1M+ people
- Incentive programs at the state/province and local level
- A deep, highly educated labour force 
- A strong university system, broad disciplinary strengths, STEM 
- Globally connected, robust infrastructure along multiple modalities 
- A diverse cultural and community environment 
- A high quality of life, quality of place 

 = a local university helps foster



This observation leads to my proposal. I began these remarks with a question: how do universities contribute to urban economic development?

I have argued that universities like U of T exert an outsized influence on the current and future prosperity of Toronto and Canada. If this is right, then how do we nurture, promote, and leverage this relationship?

My proposal is that we look to Amazon's RFP as that blueprint. Accordingly, we should:

- Invest in excellence in research and education, strategically supporting a differentiated system of higher education and an entrepreneurial innovation ecosystem.
- Invest in access to education and promote opportunities for a growing and socio-economically diverse population.
- Encourage cultural diversity and a globally fluent, internationally connected population – through immigration, international students and scholars, research and business collaborations and more.
- Invest in a region's built form, its infrastructure and transportation systems, its cultural and artistic scenes and amenities, its public facilities and parks. These are crucial contributors to quality of life and place – and they are too rarely recognized as pillars of economic prosperity and innovative dynamism.

Implemented properly, these investments and initiatives would greatly contribute to a flourishing, symbiotic partnership between a university and its host region – and, in turn, spur local economic development and prosperity.

As ever, the devil is in the details and the politics can be difficult. There is no uniquely successful set of policy prescriptions and I don't want to suggest that Toronto gets everything right – as anyone who had to sit in traffic to get here will attest.

One of the great privileges of participating in this annual conference is the opportunity to hear and learn from such a remarkable array of experts and experiences. I hope I have provided some food for thought and further discussion.

Thank you for your kind attention. I look forward to our discussions.