



University of Toronto Mississauga

Economic Impact Report

Final Report
April 12, 2013

Submitted to:
University of Toronto Mississauga

Submitted by:
KPMG LLP

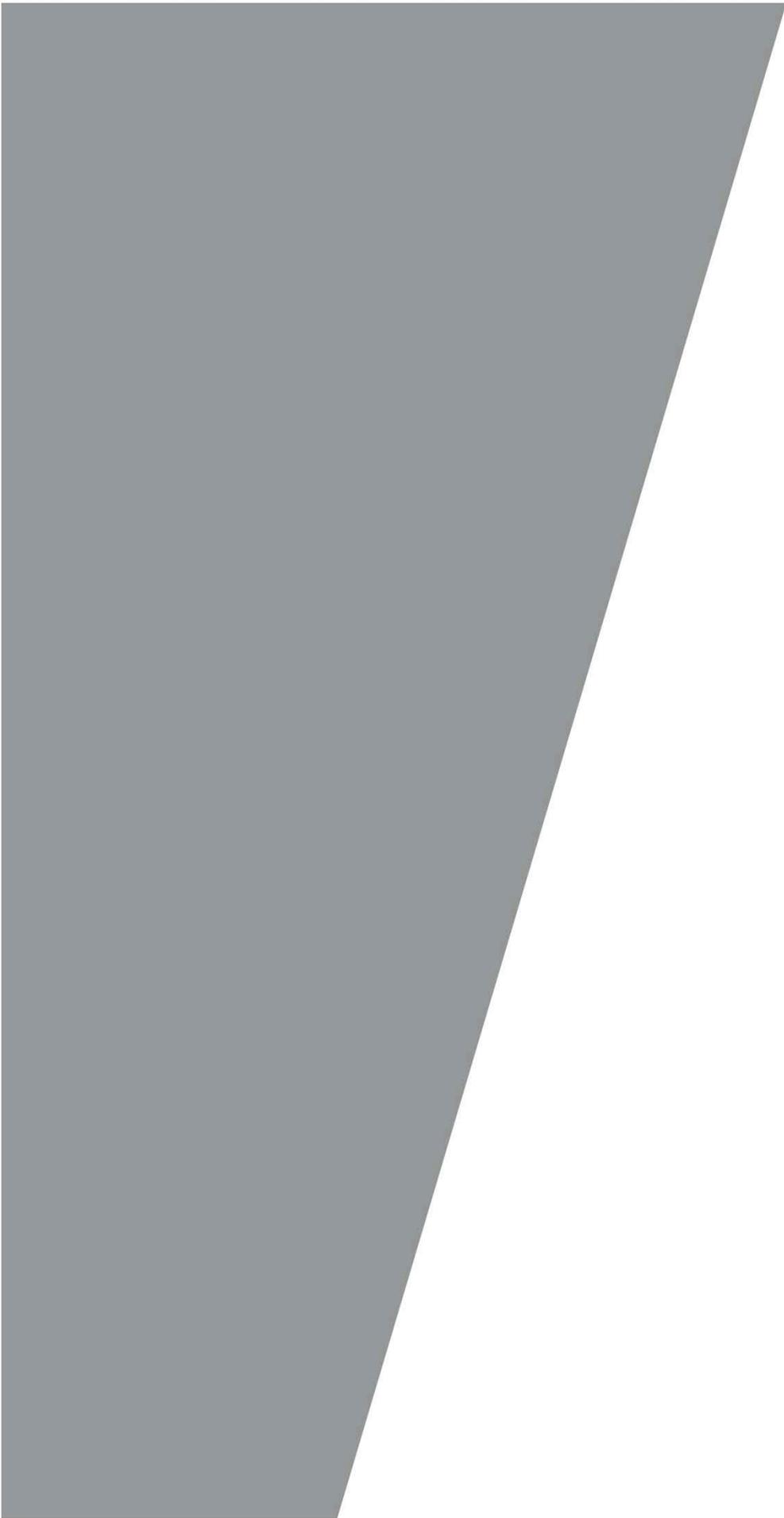


Table of Contents

1	Executive Summary	1
2	Introduction	3
3	UTM in Context	5
	A Diverse Student Body	6
	Unique Academic Offerings.....	7
	Dedicated Faculty and Staff.....	11
	A Green Campus with Award-Winning Facilities	12
	An Established Network of Alumni and Donors.....	13
4	UTM Impacts.....	14
	4.1 Economic Impacts through Expenditures.....	14
	Methodology	14
	Expenditures Generated by UTM	15
	Economic Impact of Ongoing Spending	16
	Economic Impact of Investment in Infrastructure.....	20
	4.2 Achieving Global Presence through Regional Impact	22
	Globally-oriented Studies and Research	22
	Partnerships with International Companies	25
	Attracting International Students	27
	4.3 Driving a Culture of Innovation	29
	Cutting-edge Research Spanning Many Disciplines.....	29
	Novel Academic Programs that Challenge the Status Quo.....	32
	Efforts to Promote an Innovative Economy and Community	35
	4.4 Strategic Growth and Meeting Unique Needs of the Community.....	38
	Supporting Community Events, Activities, and Health	38
	Promoting Community Engagement among Students	40
	Responding to the Community’s Academic Needs	42
5	Conclusion: Key Findings and Messages	48
	Appendix I – Methodological Framework.....	50
	Methodology	63
	Results.....	64
	Appendix II – List of Stakeholders Interviewed.....	67
	Works Cited	68

Notice to the Reader

This report has been prepared by KPMG LLP (“KPMG”) for the University of Toronto Mississauga (“Client”) pursuant to the terms of our engagement agreement with Client dated February 11, 2013 (the “Engagement Agreement”). KPMG neither warrants nor represents that the information contained in this report is accurate, complete, sufficient or appropriate for use by any person or entity other than Client or for any purpose other than set out in the Engagement Agreement. This report may not be relied upon by any person or entity other than Client, and KPMG hereby expressly disclaims any and all responsibility or liability to any person or entity other than Client in connection with their use of this report.

1 Executive Summary

The University of Toronto Mississauga (UTM) is the second-largest division of the University of Toronto (U of T) with 26 buildings, over 12,800 students and approximately 800 directly employed faculty and staff. UTM is located on 225 acres of protected greenbelt along the Credit River in the City of Mississauga, Canada's sixth largest city and the largest in the Region of Peel.

The economic impact of ongoing spending associated with UTM has resulted in the creation of approximately 2,450 full-time jobs and an estimated value-added of \$272.7 million in Ontario. Value added is the economic value that a producer adds to its intermediate inputs before generating its own output. This ongoing spending has significant local and regional economic impacts as a result of jobs created in Mississauga and expenditures made on local/regional suppliers of goods and services. The majority of jobs and value-added created directly by UTM and indirectly through purchases of goods and services accrue to Mississauga and the Region of Peel. UTM's presence creates over 1,290 jobs in Mississauga and a total of 1,370 jobs in the Region of Peel. An estimated \$141.0 million and \$143.6 million in value-added accrues in Mississauga and Peel Region, respectively. As part of its continued growth and investment in infrastructure, UTM's capital expenditures are expected to create an average 480 jobs in Ontario each year over the next five years and an estimated total of \$223.7 million in value-added between 2012/13 and 2016/17.

Summary of Quantifiable Impacts	
Jobs created by spending by UTM, students, faculty, and visitors attracted by the university (2012)	2,450 FTEs
Jobs created by capital spending by UTM (average annual impact)	480 FTEs
Total Impact (FTEs)	2,930 FTEs
Added value created by spending by UTM, students, faculty, and visitors attracted by the university (2012)	\$272.7 million
Added value created by capital spending by UTM (average annual impact)	\$44.7 million
Total Annual Impact (\$)	\$317.4 million

Beyond these quantified contributions, UTM has a pervasive social and economic impact locally. UTM has contributed significantly to human capital development in the local economy over the past 46 years. Recently, the university has cultivated important relationships with its municipal and regional partners, industry and the broader community that help further the City of Mississauga's economic development goals. It has become a promising feature of the region's economic future and an important generator of local innovation aligned to key industries. Its current fundraising campaign, Boundless, describes a vision of enhanced research, global presence, and community impact. In some areas, the university is already making notable strides towards these goals.

UTM trains students to take on leadership positions in the workforce and economy. UTM works closely with local non-profits, governments and multinational industry partners in Mississauga to prepare student talent for a knowledge-based economy. Its curricula include consulting projects, internships and work

placements; graduate student work placements have occurred at over 30 top pharmaceutical, biotech, health and accounting firms. Its student body is drawn from all over the world. UTM has been actively recruiting student talent from abroad through targeted campaigns to globalize its campus and broaden multi-cultural understanding and networks that ultimately benefit individual students, Mississauga, and broader Ontario. In 2012, approximately 18% of new undergraduate intakes were international students. Many of these students stay in Mississauga and the Peel Region to contribute to the local workforce after graduation. Others become important ambassadors in business and politics between Canada and their countries of origin. Last year, UTM alumni in Mississauga, the Region of Peel, and the broader GTA earned an estimated \$1 billion of additional income as reflected by average higher wages of those with university training.

Additional Human Capital Impacts

Estimated additional income earned by UTM alumni living in the broader GTA due to their university training at UTM (2012)	\$996.3 million
--	------------------------

While it has primarily been an undergraduate teaching campus historically, UTM has made significant contributions in research and innovation. It was the first university in Canada to develop an undergraduate forensic science curriculum, which now publishes peer-reviewed research annually. Its recent investments in life sciences programs include unique professional graduate degrees developed in consultation with industry to meet specific labour market needs, cutting-edge molecular cancer research, and the establishment of a medical academy. UTM’s faculty members have received over 30 national and international awards, honours and funding for their research contributions since 2009. At present, the university generates approximately \$9.1 million in research revenues annually, which represents 478 active research projects a year. Given the university’s interest in pioneering research and additional investment planned through the Boundless Campaign, these figures are expected to grow.

In addition to its expenditures, academic and human capital contributions to Mississauga and the Peel Region, UTM also plays an important role in enhancing quality of life outside the university’s campus and student population. It collaborates with multiple community organizations and local businesses to facilitate and host entertainment, skills-building and learning for children, youth, families and seniors in Mississauga and the Region of Peel. It shares its Recreation, Athletics and Wellness Centre (RAWC) with approximately 2,000 non-student members to promote health and well-being among community members. It holds several events throughout the year, some of which attract up to 1,500 community residents, and encourages broad participation in lectures and idea generation. Nearly 2,000 people enroll in courses offered through the School of Continuing Studies at UTM to upgrade their skills and accreditations, including immigrants and newcomers. UTM students engage in community volunteer programs, experiential learning placements, and other activities. According to testimonials, they provide key support to non-profit and government organizations with limited human resources and capacity. In 2012-13, they dedicated approximately 45,000 volunteer hours to enriching services to at-risk populations, improving protection of the environment, and raising awareness about issues of social justice.

2 Introduction

In an increasingly competitive and complex economy, quality of life, job creation and retention and socio-economic well-being are interlinked with a jurisdiction's ability to attract and train a qualified workforce and to spur creativity and ingenuity.¹ Access to capital, the presence of business clusters, available tax incentives and positive marketing contribute significantly to cultivating a knowledge-based economy. However, it is skilled human capital and a culture of innovation that ultimately inspire economic growth and social progress. These are the keys to prosperity in the 21st century.

In this context, universities play a critical role in shaping the economic future of their communities. Post-secondary institutions driving research and innovation through human capital development, training and learning create opportunities for new business, investment, and economic diversification. A study by Cornell University suggests that universities' roles in regional economic development are expanding as they increasingly become the primary agents in discovery, development, application and preservation of all forms of knowledge, including scientific, humanistic, and social scientific.²

With a growing reputation for high quality, market-driven curricula and research, the University of Toronto Mississauga (UTM) is a key contributor to the economic futures of Mississauga and the Region of Peel. Through investments in human capital and attracting bright, motivated minds, UTM advances productivity and helps build a knowledge-based economy by proactively addressing labour market needs with a qualified workforce. It engages industry, health, government, and other sectors in developing and applying academics to boost the economic growth and quality of life in these jurisdictions and beyond.

From February to March 2013, KPMG LLP undertook an economic impact study to develop an understanding of UTM's value to its municipal, regional and provincial jurisdictions. KPMG examined these impacts through a quantitative analysis of operating and recurring minor capital expenditures, major capital expenditures and non-local student and visitor expenditures. The KPMG team also conducted interviews with internal and external stakeholders (see Appendix II – List of Stakeholders Interviewed) and analyzed additional data from UTM to inform a qualitative examination of UTM's social and economic impacts on its community.

KPMG aligned its investigation of impacts to Boundless, the fundraising campaign for the University of Toronto Mississauga, to understand the degree to which the university is prepared to make or has already made contributions to the campaign's objectives. The Boundless Campaign's objectives include *Achieving Global Presence through Regional Impact*; *Driving a Culture of Innovation*; and *Strategic Growth and Meeting Unique Needs of the Community*. Through multiple internal and external stakeholder interviews, data collection from UTM and other sources and objective analysis, KPMG found that UTM is currently producing three main impacts against each objective. These impacts, in addition to economic impacts through expenditures, are described in the following sections:

¹ Science, Technology and Innovation Council: State of the Nation 2008 – Canada's Science, Technology and Innovation System.

² Walshok, Mary Lindenstein. (1997) Expanding Roles for Research Universities in Regional Economic Development. New Directions for Higher Education. Found at: <http://cardi.cornell.edu/cals/devsoc/outreach/cardi/calendar-events/upload/ExpandingRolesForUniv.pdf>

- **Economic Impacts through Expenditures**, including operating, recurring minor capital and major capital expenditures and their impact on employment and the economy, as well as the impact made through expenditures of non-local students and visitors;
- **Achieving Global Presence through Regional Impact**, including impacts made through globally-oriented studies and research, partnerships with international companies and attracting international students;
- **Driving a Culture of Innovation**, including contributions made through cutting-edge multidisciplinary research, novel academic programs that challenge the status quo and efforts to promote an innovative economy and community;
- **Strategic Growth and Meeting Unique Needs of the Community**, including the benefits associated with supporting community events and activities, promoting community engagement among students and responding to the broader community's academic needs.

3 UTM in Context

HIGHLIGHTS

Over the past 46 years, UTM has grown from its roots as the one building school of Erindale College to a campus with a diverse student population, dedicated faculty and staff, a wide range of academic offerings and a supportive alumni network.

- *UTM is the second-largest division of the University of Toronto **with 12,800 students from 125 countries, almost 800 faculty and staff, 26 buildings and over 43,000 alumni***
- *The number of **new undergraduate international students at UTM has more than doubled over the past decade** and represented approximately 18% of new undergraduate intakes in 2012*
- *UTM offers **125 academic programs in 70 areas of study through 15 academic departments**, and an **Institute of Communication, Culture and Information Technology**. UTM recently partnered with U of T's Faculty of Medicine and Trillium Healthcare Partners to establish the **Mississauga Academy of Medicine***
- *UTM students can take part in a **growing number of experiential learning opportunities** including special research programs, student exchange opportunities, internships and community service.*

The University of Toronto (U of T) is one of the top universities in Canada and ranked among the best in the world. It has gained a solid reputation for its academics and research and attracts renowned faculty and students globally. U of T ranked first in Canada and 21st in the world by the *Times High Education World University Rankings* (2012-2013), first in Canada and 27th in the world by the Shanghai Jiao Tong University's Academic Ranking of World Universities (2012) and second in Canada and 19th in the world by QS World University Rankings (2012).

The University of Toronto Mississauga (UTM), the second-largest division of U of T, was established in 1967 and began with one building, 155 students and 28 faculty members. Since then, it has grown significantly; today, UTM has 26 buildings, over 12,800 students and almost 800 full-time faculty and staff. It is located on 225 acres of protected greenbelt along the Credit River in the City of Mississauga, Canada's sixth largest city. UTM boasts the following:

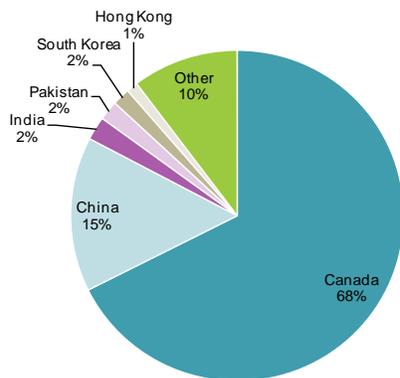
- **A diverse student body**
- **Unique academic offerings**
- **Dedicated faculty and staff**
- **A green campus with award-winning facilities**
- **An established network of alumni and donors**

This section provides background information on UTM in the above areas to provide context for the economic and social impacts that will be discussed later in this report.

A Diverse Student Body

UTM has approximately 12,200 undergraduate and 630 graduate students who study in over 125 programs. In 2011, UTM ranked 31st of 81 universities in Canada based on enrolment numbers.³ While the majority of students are enrolled in full-time programs, about 13% of students choose to complete their studies on a part-time basis. UTM has a diverse student population and, in 2012, 18% of new undergraduate intakes are international students.⁴ Many countries, including China, India, Pakistan and South Korea, are represented in its student body.⁵

Figure 1: New Intakes – By Country of Citizenship, September 2012⁶



Source: University of Toronto Mississauga

In 2012, the top feeder cities for UTM were Mississauga, Toronto and Brampton. The Region of Peel has the second largest population amongst the Greater Toronto Area (GTA) Regional Municipalities and has witnessed overall growth of 11.8% from 2006 to 2011. Driving much of the population increase is the City of Brampton, which has grown 20.8% in the same period.⁷ More and more, GTA Regional Municipalities require easy access to high quality post-secondary education to meet the needs of their growing populations. UTM plans to continue to expand its campus to accommodate growth in the western GTA.

³ Association of Universities and Colleges of Canada, Enrolment by university, 2011

⁴ Based on 544 international and international exempt new intakes out of 3,052 total enrolments as of November 2012

⁵ Based on citizenship country of 3,221 new intakes as of September 2012

⁶ Ibid.

⁷ Peel Economic Pulse. Economic Performance: Jan – June 2012. Located at: <http://www.peelregion.ca/finance/dashboard-eco/peel-eco-pulse/part3a.htm>

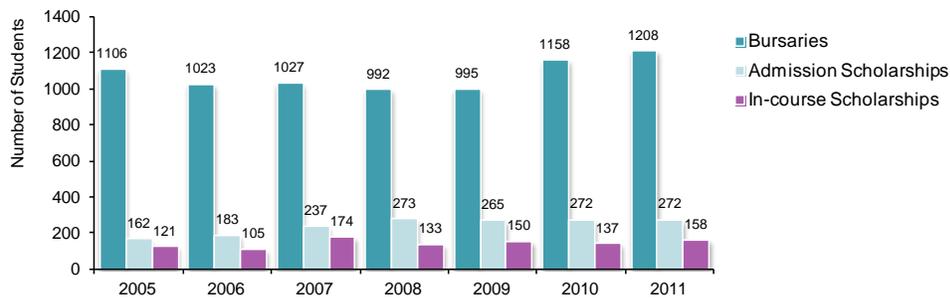
Figure 2: New Undergraduate Intakes, 2000-2017 Actual & Projected



Source: University of Toronto Mississauga

As part of the University of Toronto, UTM is committed to the pledge that no student offered admission to a program should be unable to enter or complete it due to lack of financial means. UTM provides a variety of bursaries, admission and in-course scholarships to its students. In 2011, UTM offered 1,208 bursaries to students to increase access to post-secondary education in the community.

Figure 3: Undergraduate Student Awards and Scholarships, 2005-2011

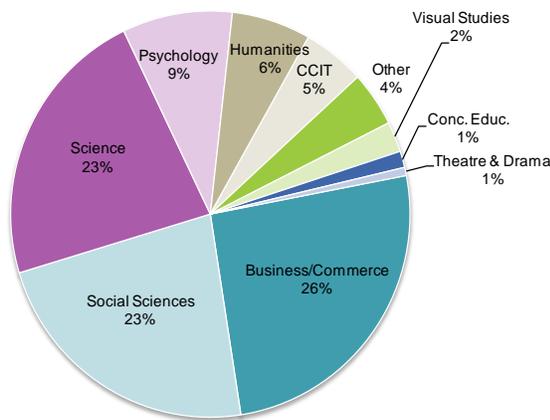


Source: University of Toronto Mississauga

Unique Academic Offerings

UTM offers a range of academic programs at both the undergraduate and graduate levels to meet the interests of students and the unique needs of the local labour market. UTM has 15 academic departments and 125 programs in 70 areas of study, as well as an Institute of Communication, Culture and Information Technology. The school is also in the process of establishing an Institute for Management and Innovation, which will house its professional Master Degree programs. In 2011, UTM opened the Mississauga Academy of Medicine, which is a partnership between UTM, U of T's Faculty of Medicine and Trillium Health Partners, and encompasses three main sites – Credit Valley Hospital, Mississauga Hospital and Queensway Health Centre.

Figure 4: New Intakes by Subject Area, 2012



UTM attracts students across a variety of academic disciplines. In 2012, the subject areas with the greatest intake at the undergraduate level were business and commerce (26%), social sciences (23%) and sciences (23%).⁸

In addition to U of T-registered doctoral-stream graduate students who conduct the majority of their training and research at UTM, the university hosts several innovative professional graduate programs. These programs have been designed in collaboration with industry leaders to cultivate the leadership, teamwork, knowledge and skills base deemed necessary for success in these industries.

Source: University of Toronto Mississauga, KPMG Analysis

Academic Programs and Departments		
Undergraduate Departments		
<ul style="list-style-type: none"> • Anthropology • Biology • Chemical and Physical Sciences • Economics • English and Drama • Language Studies • Geography 	<ul style="list-style-type: none"> • Historical Studies • Institute of Communication, Culture and Information Technology Management • Mathematical and Computational Sciences • Philosophy 	<ul style="list-style-type: none"> • Political Science • Psychology • Sociology • Visual Studies • Concurrent Teacher Education Program • Forensic Science
Graduate Departments		Professional Undergraduate and Graduate Programs
<ul style="list-style-type: none"> • Anthropology • Cell & System Biology • Chemistry • Ecology & Evolutionary Biology • Geography 	<ul style="list-style-type: none"> • Geology • History of Art • Mathematics • Physics • Psychology 	<ul style="list-style-type: none"> • Mississauga Academy of Medicine • Master of Biotechnology • Master of Biomedical Communication • Master of Management and Professional Accounting • Master of Management of Innovation • Master of Science in Sustainability and Management • Diploma in Investigative and Forensic Accounting

While the impact of UTM's innovative programs on the local economy will be discussed in greater detail later in this report, an overview description of various programs is provided below. These programs attract students from the region as well as from across Canada and abroad. UTM is committed to developing curricula that trains human capital to make a positive impact on the economy.

⁸ Science includes life sciences (13%), computer science, mathematics and statistics (4%), chemical and physical sciences (3%) and forensic science (3%)

Table 1: Unique and Innovative Academic Programs

Program / Department	Description
Undergraduate	
Institute of Communication, Culture and Information Technology (ICCIT)	ICCIT houses four interdisciplinary undergraduate programs that offer students a range of ways to explore communication, traditional and digital media, and technological innovation.
Concurrent Teacher Education Program (CTEP)	This innovative program allows students to earn two undergraduate degrees simultaneously over five years of full-time study: an HBA or HBSoc and a B.Ed. All successful candidates receive a certificate from the Ontario College of Teachers. Teacher candidates participate in education-friendly courses and field observations.
Forensic Science Honours BSc	The Forensic Science HBSoc program, the first of its kind in Canada, is designed to provide students with an understanding of scientific analyses, theories, laboratory skills, applications, and field techniques. Specialist programs are offered in the fields of forensic anthropology, forensic biology, forensic chemistry, and forensic psychology.
Joint Programs with Sheridan Institute of Technology and Advanced Learning	These programs build off the strengths and assets of each institution and include theatre and drama studies, art and art history and communication, culture and information technology.
Graduate	
Master of Biotechnology (MBSoc)	The MBSoc is a 24-month, course-based professional degree incorporating both science and introductory business courses with eight-12 months of paid work experience in the biotechnology, medical device and biopharmaceutical sectors.
Master of Biomedical Communication (MBSocBMC)	The MBSocBMC is a 24-month professional graduate program that prepares students for careers in the visual communication of science, medicine, and health. It is one of five accredited programs of this type in the world, and the only one in Canada.
Master of Management of Innovation (MMI)	The MMI is an accelerated, 12-month professional management degree, with eight months of courses and a four month experiential term in industry. The MMI is jointly offered by the Department of Management, UTM and the Institute of Health Policy, Management and Evaluation, Faculty of Medicine.
Master of Management and Professional Accounting (MMPA)	The MMPA is a unique 27-month program that introduces students to the ethical, human and technical foundations of businesses and the accounting profession. The program emphasizes innovation with realism and students participate in two work terms at the country's top accounting firms.
Master of Science in Sustainability and Management (MSSM)	The MSSM integrates strategic concepts in environmental science with economic management over a two-year period. Graduates become well positioned to respond to global issues such as climate change, economic insecurity, water shortages and ecological health. The aim of the program is to foster holistic and long-term solutions that consider the ecology and management of resources in a balanced way.

In addition to the programs listed above, UTM offers a growing number of experiential learning opportunities for students to complement and build on their academic experience outside of the

classroom. These include special research programs, student exchange opportunities, internships and community service. Both credit and non-credit opportunities exist and may be paid or unpaid depending on the program. These programs help students to gain essential professional skills that benefit them during and after their academic studies are complete. They are also intended to provide benefits to the community by assisting local organizations with projects or initiatives that they may not have the resources or capacity to assume otherwise.

Table 2: Experiential Learning Programs

Programs	Description
Research Opportunity Program (ROP)	The ROP is successful in attracting UTM undergraduate students to projects under faculty supervision. ROP allows students to earn one full course credit by participating in a faculty member's research project. Organizations participating in research projects have included Credit Valley Conservation, Riverwood Conservatory and Canadian Grasslands.
Internships	Fourth-year students can participate in many internship opportunities at UTM in a range of subject areas. Example organizations providing internships include: <ul style="list-style-type: none"> • City of Mississauga • City of Brampton • Dufferin Peel Catholic District School Board • Immigrant Women's Settlement Agency • Mississauga Transit • Ontario Provincial Police • RBC Capital Markets • Safe City Mississauga • Trillium Health Partners • YWCA Women's Shelter
Service Learning	Service learning is a method of teaching, learning and reflecting that combines academic classroom curriculum with meaningful service in the community. Students learn by doing practical work. Combined with directed reflection on their experience, this provides students a unique learning opportunity. They gain a richer understanding of civic responsibility, as well as the personal and societal benefits of lifelong community engagement.
Study Abroad	Students are invited to apply to earn credit towards their degree in their second year and beyond at one of U of T's many international exchange partner universities.
Field Trips/Field Courses	Field courses take students on a journey of learning outside the classroom. Experiences can be outdoor fieldwork, visits to historical sites or cultural events, or interactive tours of industrial sites.

"My internship with Evergreen both allowed me an opportunity to work within an environmental non-profit and to work directly with a number of environmental organizations in Peel Region. The experience allowed me to develop: 1) my interest in working for a non-profit, 2) an understanding of the environmental landscape in Peel, and 3) allowed me to develop the contacts I needed to gain employment. I was employed with Evergreen for a short contract after the internship ended and was soon hired to coordinate a Peel-based environmental project."

- **Past ENV400 Student, Associate Director, EcoSource**

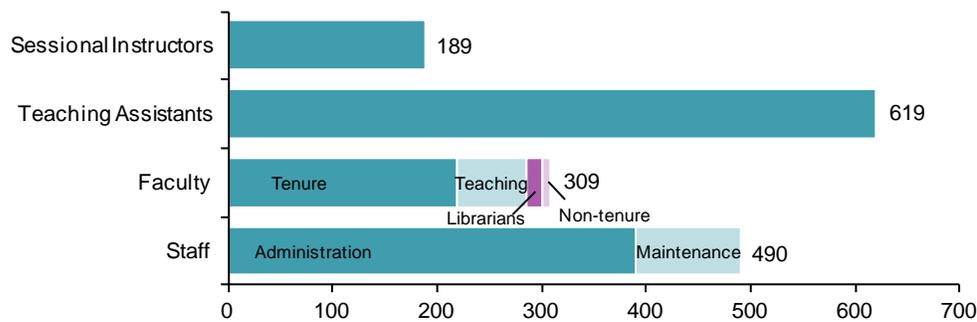
UTM offers continuing education courses through U of T's School of Continuing Studies (SCS) for members of the community to advance their learning, career and life goals, including a range of courses offered in applied and business-related areas. Many of the courses can lead to certificates and other professional accreditations such as Business Analysis, Risk Assessment, Project Management, Lean Six Sigma, Accounting (CMA, CGA) and others. SCS courses are offered in different settings, including the

classroom, distance and online formats. Newcomers can also have their credentials assessed to help launch their career in Canada. Through the SCS, UTM enables community members to pursue lifelong learning and improve their position in the job market.

Dedicated Faculty and Staff

Faculty and staff play an integral role in UTM’s impacts on its students and community. As of 2012, there were approximately 800 full-time faculty and staff employed by UTM in addition to 619 teaching assistants and 189 sessional instructors. The majority of faculty and staff live in Mississauga and the Western GTA. A number participate in municipal and regional strategic initiatives and working groups that focus on improving quality of life for communities.

Figure 5: Breakdown of Faculty and Staff, 2011/12



Source: University of Toronto Mississauga

UTM offers its faculty and staff a range of educational and training sessions, career counselling, health and wellness sessions, as well as child care. The U of T tri-campus, which includes UTM, has received a number of top employer awards, depicted below.



A Green Campus with Award-Winning Facilities

As noted earlier, UTM is situated on 225 acres of protected greenbelt and is home to many modern, award-winning facilities. In recent years, the university has invested significantly in its campus facilities to meet a growing student population. From 2004/05 to 2011/12, UTM undertook \$276 million worth of major capital projects. Examples of these major projects are listed in Table 3 below.

Throughout the year, the campus is used by the community for many events, conferences and meetings. For example, in addition to its student members, UTM's Recreation, Athletics and Wellness Centre (RAWC) has approximately 2,000 non-student members, which include alumni, seniors, faculty and staff and community members. The RAWC is also used as the Toronto Argonauts training facility. The Mississauga Aquatics Club runs part of their competitive stream program at UTM's pool, located in the RAWC, which involves 557 participants and 12 staff. In addition, UTM hosts many programs for children and youth on its campus including swimming lessons throughout the year and sports, leadership and dance camps in the summer.

UTM's campus has been recognized with a number of awards in building design. A selection of its awards is listed in the table below.

Table 3: Example of Award-Winning Facilities

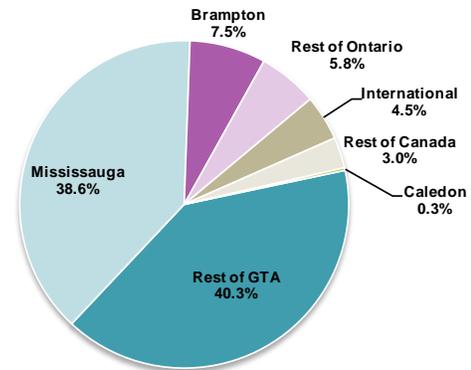
Facility	Description & Example of Awards
Communication, Culture and Information Technology Building	<ul style="list-style-type: none"> • \$48 million building to house the Institute for Communication, Culture and Information Technology • <i>2008 Governor General's Medals in Architecture</i> • <i>2007 Mississauga Urban Design Award of Excellence</i>
Hazel McCallion Academic Learning Centre	<ul style="list-style-type: none"> • \$34 million library and information complex • <i>2010 Ontario Library Association (OLA) – Building Design Award</i> • <i>2008 Ontario Association of Architects – Design Excellence Award</i> • <i>2007 City of Mississauga – Urban Design Award, People's Choice Award</i> • <i>2007 City of Mississauga – Mississauga Urban Design Award, Award of Excellence</i>
Instructional Centre	<ul style="list-style-type: none"> • \$70 million teaching and study space • <i>2012 International Interior Design Association – Global Excellence Awards (Best of Category - Cultural/Institutional/Educational)</i> • <i>2011 Mississauga Urban Design Award – Award of Excellence (Perkins+Will)</i>
Terrence Donnelly Health Sciences Complex, including Mississauga Academy of Medicine	<ul style="list-style-type: none"> • \$37 million health sciences complex • <i>2012 Governor General's Medal in Architecture</i> • <i>2012 Ontario Association of Architects (OAA) Design Excellence Award - "Best of Show"</i>

An Established Network of Alumni and Donors

UTM has a network of over 43,000 alumni that live in Mississauga, Brampton and the broader GTA as well as nationally and internationally. Alumni work in a range of industries including biotechnology, pharmaceuticals, government and finance. Many hold leadership positions within their organizations and the broader community. Alumni are encouraged to participate in UTM’s networking, social and volunteer events and to take full advantage of the facilities and benefits offered by the school.

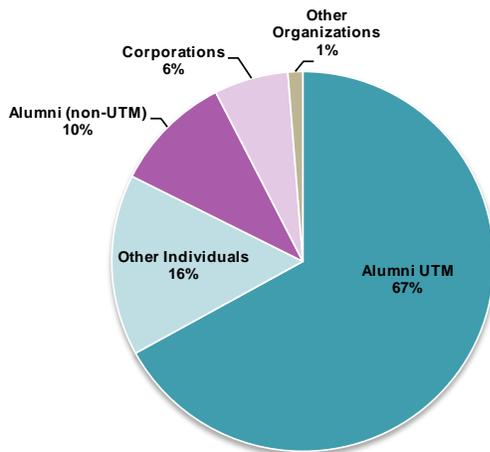
Over time, U of T alumni have given over \$15 million to UTM through 9,000 donations. Approximately 88% of the donations, amounting to \$1.4 million, have been made by UTM alumni. The high percentage of UTM alumni giving indicates the value associated with their alma mater and their desire to see the school continue to develop innovative programs, build state-of-the-art facilities and offer new experiential learning opportunities. In addition to alumni, corporations, other organizations and individuals continue to make donations to UTM each year. In 2012, UTM launched its \$60 million Boundless Campaign with more than \$30 million raised at the time of launch. The remaining \$30 million will be raised over the coming years.

Figure 6: Active UTM Alumni, 2013⁹



Source: University of Toronto

Figure 7: Sources of Donations, 2011/12¹⁰



Source: University of Toronto

⁹ Based on 43,032 active UTM alumni as of March 2013

¹⁰ Based on 397 donors in 2011/12

4 UTM Impacts

4.1 Economic Impacts through Expenditures

HIGHLIGHTS

Post-secondary institutions generate both tangible and significant economic benefits through the creation of high-quality jobs and ongoing expenditures that add value into the local, regional and provincial economies.

- The economic impact of ongoing spending associated with UTM included creation of about **2,450 full-time jobs** and an estimated **\$272.7 million in value-added**
- As part of its continued growth and investment in infrastructure, capital expenditures by UTM are expected to create an average 480 jobs in Ontario each year over the next five years and an estimated total of **\$44.7 million in value-added** between 2012/13 and 2016/17.

UTM contributes to the local, provincial and national economies through the creation of high-quality jobs as well as expenditures made on various goods and services required to operate the campus. Economic impacts include employment, business income generated by UTM staff and faculty, direct Canadian suppliers to UTM, indirect suppliers (i.e., suppliers to the direct suppliers) as well as induced impacts that result from spending of salaries and wages generated as a result of UTM.

Methodology

To assess the economic impact of UTM, the following four types of expenditures were analyzed:

- ***Annual operating expenditures that are a direct result of the operations of UTM, including recurring minor capital expenditures***
- ***Living expenses paid by students who originate from a location beyond commuting distance of UTM***
- ***Expenditures by non-local 'friends and family' visitors to UTM***
- ***Major capital expenditures due to the construction of new buildings and major reconstruction/renewal of existing facilities***

In conducting this analysis, KPMG's methodology was based on the use of economic input-output modeling – an approach that is commonly used for this type of analysis. KPMG has undertaken an analysis of the economic impact of expenditures related to UTM on both the Ontario and Canadian economies using the most recent (2008) version of the Statistics Canada Interprovincial Input-Output Model.

Economic impact is commonly measured in terms of GDP, employment, and value-added. Employment impacts are expressed in terms of full-time equivalent (FTE) positions. Under this approach, the combination of full and part-time jobs in each industry, and permanent and temporary employment, is converted into the equivalent of full-time jobs. Value-added measures economic value created through the production of goods and services – it is the value that a producer adds to its intermediate inputs

before generating its own output.¹¹ Value-added impacts are comprised of labour, business and government income.

The employment and value-added impacts estimated through input-output modeling are categorized as direct, indirect, or induced. Direct impacts capture the labour income paid to UTM faculty and staff, any indirect taxes, and depreciation paid by UTM. Indirect impacts are generated by the production of goods and services by suppliers to UTM. For example, the direct employment impact includes UTM employees and the indirect employment impact includes the workers employed by UTM suppliers. Similarly, direct labour income accrues to the employees of UTM, while indirect labour income accrues to the Ontario employees of the suppliers. Induced impacts are those resulting from re-spending of direct and indirect labour income generated (e.g. the impact of the spending of salaries and wages earned by UTM faculty and staff, and employees of suppliers).

Expenditures Generated by UTM

Each year, UTM spends millions of dollars to operate the university campus and invests in infrastructure to both maintain and expand the facilities available for students, staff and the community. In 2011/12, the annual operating and recurring minor capital expenditures of UTM, including those of partner organizations operating on campus¹², amounted to \$153.0 million. That amount includes \$103.5 million in salaries and benefits to UTM's faculty and staff, as well as over \$40 million to suppliers for various goods and services. Expenditures for goods and services consisted primarily of various professional services, utilities, laboratory equipment and supplies, IT and office equipment, office supplies, and library books.

As a result of these expenditures, UTM has created a number of high-quality jobs. In particular, UTM employs approximately 800 faculty and staff (full time equivalents). In addition, UTM supports over 600 teaching assistant positions and approximately 190 sessional instructors positions.

UTM also spends approximately \$28.7 million for goods and services provided centrally at the St. George campus on behalf of UTM. Goods and services provided include student recruitment/registration, information technology, library materials, research administration, financial management, human resources, and other goods and services.

UTM is increasingly attracting more students from abroad and outside Ontario as a result of the U of T brand and specialized programs offered at UTM. It is estimated that approximately, 16% of UTM's total current student body is international and another 21% reside in Ontario or the rest of Canada and are outside commuting distance from UTM.¹³ Thus, it is estimated that approximately 4,500 students originate from outside commuting distance of UTM and of those, an estimated 3,100 students live off campus. Those students generate economic impacts to the local economy and more broadly in Ontario as a result of their living expenses. Their spending which can be broken down into accommodation, food, books and supplies, local transportation, telecommunications, and leisure, was estimated at over \$45 million in 2011/12.

¹¹ Statistics Canada (2009). User's Guide to the Canadian Input-Output Model. Industry Accounts Division, System of National Accounts

¹² Partner organizations operating on campus include food services provided on campus

¹³ It was estimated that 63% of UTM students reside within commuting distance based on top feeder municipality and sub-municipality data. The number of current international students was estimated based on an average from 2008/09 to 2011/12.

As a result of many out-of-town students studying at UTM, family and friends are travelling to UTM to visit, as well as attend various open houses, orientation days, and other on campus events. Their spending includes expenditures on accommodation, local transportation, vehicle rental and operation, food and beverage at stores and restaurants/bars, recreation/entertainment, as well as retail purchases. These 'friends and family' visitors are estimated to have spent \$3.8 million in 2011/12 while visiting Mississauga. The impact of business visitors was analyzed but was found to be immaterial.

Table 4 summarizes the annual expenditures generated by UTM.

Table 4: Ongoing Annual Expenditures (\$ millions)

\$ millions	Annual Operating Expenditures		Non-local Student Spending	Friends and Family Visitor Spending	Total
	Direct by UTM	Central Services			
Salaries and Benefits	103.5	9.6	-	-	113.1
Commodities	40.7	12.9	45.1	3.8	102.5
Other	8.8	6.2			15.0
Total Expenditures	153.0	28.7	45.1	3.8	230.6

Source: University of Toronto Mississauga, KPMG analysis

Economic Impact of Ongoing Spending

The economic impacts of UTM-related expenditures were analyzed using the Statistics Canada Interprovincial Input-Output model to estimate the impacts on the economy in terms of employment, the creation of value-added, and indirect tax revenues for the provincial and federal governments.

Table 5 below summarizes the employment impact of UTM-related expenditures:

Table 5: Impact of UTM Annual Operating, Student and Visitor Expenditures on Employment in the Ontario Economy (FTEs) (rounded to the nearest 10)

2011/12	Annual Operating Expenditures		International students and other Non-Local students	Friends and Family Visitors	Total
	Direct by UTM	Central Services			
Total Direct Employment	800	110	290	50	1,240
Indirect Employment	330	110	130	10	580
Induced Employment	480	50	100	10	640
Total Impact	1,610	260	530	70	2,450

Source: KPMG analysis based on Statistics Canada Input-Output model results

Note: Totals may not add due to rounding.

UTM directly employs about 800 FTEs and an estimated 110 FTEs are employed to provide services centrally. Related expenditures have generated an additional 1,560 jobs for a total of 2,470 FTEs in Ontario. As compared to goods-producing sectors/industries that tend to import goods and services, UTM, students and visitors spend more money locally and regionally and consequently create a greater number of jobs in the local area. The total FTEs do not include teaching assistants and sessional instructors, however wages paid to these individuals are shown in the table below.

Table 6 summarizes the impacts of UTM related expenditures on value-added including labour, business and government income.

Table 6: Impact of UTM Operating, Student and Visitor Expenditures on the Ontario Economy (\$ millions)

2011/12	Annual Operating Expenditures		International students and other Non-Local students	Friends and Family Visitors	Total
	Direct by UTM	Central Services			
Labour Income					
Direct	103.5	9.6	10.5	1.2	124.7
Indirect	14.2	4.5	7.0	0.5	26.3
Induced	22.0	2.7	5.0	0.5	30.1
Sub-total Labour Income	139.7	16.8	22.4	2.2	181.1
Business Income					
Direct	8.0	6.2	10.2	0.7	25.1
Indirect	7.2	2.3	4.3	0.4	14.2
Induced	20.5	2.6	4.8	0.5	28.4
Sub-total Business Income	35.7	11.0	19.4	1.6	67.7
Government Taxes					
Direct	0.8	-	5.1	0.2	6.0
Indirect	3.1	1.0	0.7	0.6	4.9
Induced	10.8	1.3	0.8	0.8	13.0
Sub-total Government Income	14.7	2.3	6.6	0.3	23.9
Total Impact on GDP	190.1	30.2	48.4	4.1	272.7

Source: KPMG analysis based on Statistics Canada Input-Output model results.

Note: Totals may not add due to rounding.

UTM-related expenditures generate a \$272.7 million contribution to GDP in Ontario. The total value-added in Ontario includes:

- Annual labour income of \$181.1 million
- Annual business income of \$67.7 million
- Government income of \$23.9 million

Local and Regional Impacts of Ongoing Spending

The ongoing expenditures related to UTM have significant local and regional economic impacts as a result of jobs created in Mississauga and expenditures made on local/regional suppliers of goods and services. An analysis of UTM direct operating expenditures (excluding salaries and wages) indicates that 41% of goods and services were purchased from businesses located in Mississauga. A further 7% were purchased in other locations within the Region of Peel for a total of 48%. Expenditures on central services were not included in this analysis since only a minor amount is estimated to be spent in Mississauga and the Region of Peel.

Similarly, a large part of labour income earned by UTM faculty and staff, and suppliers is likely spent in locally and regionally. An analysis of data on the geographic distribution of faculty and staff indicates that 34% of wages and salaries were paid to faculty and staff residing in Mississauga with a further 4% to those living in other areas within the Region of Peel.

The following key elements were included in the analysis of the local and regional impacts (please see Appendix II.9 for details of the methodology used):

- All direct employment is within Mississauga/Region of Peel
- The direct impact of actual expenditures made by UTM on suppliers within Mississauga and the Region of Peel
- Induced impacts of spending by faculty and staff residing in Mississauga and the Region of Peel
- The direct impact of student living expenditures
- The direct impact of visitor expenditures

Figure 8 and Figure 9 summarize the value-added and employment impacts on Mississauga and Region of Peel.

Figure 8: Employment Impacts Mississauga and Region of Peel

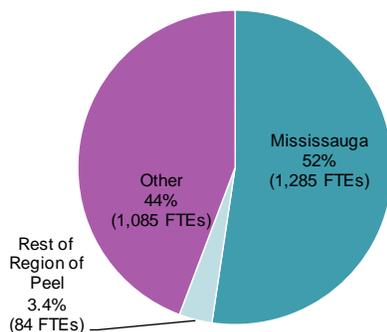
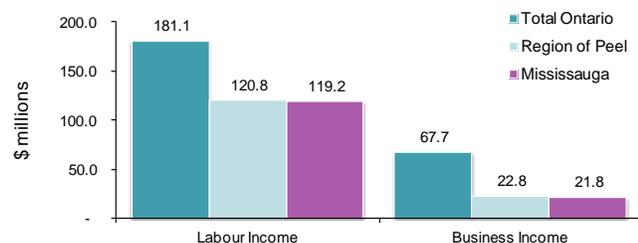


Figure 9: Value-added Impacts on Mississauga and Region of Peel (\$ millions)



Source: KPMG analysis based on Statistics Canada Input-Output model results

The majority of jobs created directly by UTM and indirectly through purchases of goods and services by UTM, students, and visitors accrue to Mississauga and the Region of Peel. The existence of UTM creates/maintains about 1,290 jobs (FTEs) in Mississauga and a total of 1,370 jobs (FTEs) in the Region of Peel (including Mississauga).

Table 7: Employment Impact of Total Ongoing Expenditures on Mississauga and Region of Peel (FTEs)

FTEs	Total	
	Mississauga	Peel Region
Total Direct Employment	1,030	1,080
Indirect Employment	140	160
Induced Employment	120	130
Total Impact	1,290	1,370

Source: KPMG analysis based on Statistics Canada Input-Output model results.

Note: Totals may not add due to rounding.

In terms of value-added, 66% of Labour Income, and 32% of Business Income accrues in Mississauga. Similarly, 67% of Labour Income, and 34% of Business Income accrues to the Region of Peel.

Table 8: Value-added Impact of Total Ongoing Expenditures on Mississauga and Region of Peel (\$ millions)

GDP Impact by Municipality and Region	Total	
	Mississauga	Peel Region
\$ millions		
Labour Income		
Direct Employment	108.4	108.4
Indirect	5.3	6.2
Induced	5.5	6.2
Sub-total Labour Income	119.2	120.8
Business Income		
Direct	15.1	15.1
Indirect	2.4	2.8
Induced	4.3	4.9
Sub-total Business Income	21.8	22.8
Total	141.0	143.6
Percent of Total	52%	53%

Economic Impact of Investment in Infrastructure

To serve the growing number of students choosing to attend UTM, new programs being offered, and the need to repair older facilities, the university has undertaken about \$280 million worth of major capital projects over the last eight years (2004/05 to 2011/12), and plans to undertake approximately \$220 million more over the next five years (2012/13 to 2016/17). Investments will include major renovations to existing student and laboratory spaces, as well as building reconstruction and expansion to accommodate the growth in the number of students, faculty and staff.

The economic impacts of capital expenditures were also analyzed using the Statistics Canada Interprovincial Input-Output model to forecast the expected impacts on the economy in terms of employment, the creation of value-added, and indirect tax revenues for the federal, provincial and municipal governments.

On an annual basis, capital expenditures by UTM are expected, on average, to create over 480 FTEs. The following table shows the employment impact of UTM's capital expenditures through direct and indirect suppliers, as well as the induced impact created by spending of salaries and wages earned by supplier employees.

Table 9: Impact of UTM Capital Expenditures on Employment (FTEs)

	Average Annual FTE Impact
Total Direct Employment	
Employment by Direct Suppliers	270
Employment by Indirect Suppliers	110
Induced Employment	100
Total Impact	480

Source: KPMG analysis based on Statistics Canada Input-Output model results

Table 10 summarizes the impacts of UTM capital investment on value-added including labour, business and government (through indirect taxes) income.

Table 10: Impact of UTM Capital Expenditures on the Ontario Economy (\$ millions)

2011/12	Average Annual Capital Expenditures	Total Capital Expenditures (2012/13 – 2016/17)
Labour Income		
Direct Employment		
Indirect Employment	22.0	109.8
Induced	4.8	23.9
Sub-total Labour Income	26.7	133.7
Business Income		
Indirect	7.8	39.2
Induced	4.5	22.3
Sub-total Business Income	12.3	61.5
Government Taxes		
Indirect Taxes on Direct and Indirect Suppliers	3.4	16.9
Induced	2.3	11.5
Sub-total Government Income	5.7	28.4
Total GDP	44.7	223.7

Source: KPMG analysis based on Statistics Canada Input-Output model results

Note: Totals may not add due to rounding.

Capital expenditures averaging \$45 million per year over the next five years are expected to generate a \$49.4 million contribution to GDP in Canada. \$44.7 million of that total (91%) is generated in Ontario. That represents a total impact of \$223.7 million over five years. The \$44.7 million value-added impact in Ontario includes:

- Annual labour income of \$26.7 million
- Annual business income of \$12.3 million
- Government income of \$5.7 million through indirect taxes

4.2 Achieving Global Presence through Regional Impact

HIGHLIGHTS

As each community becomes increasingly global, education is ever more critical in identifying business opportunities, solving complex problems, attracting investment, and promoting cross-cultural understanding.

- *UTM has actively engaged industry in preparing students for highly-skilled, knowledge-based work, such as through **graduate student work placements at over 30 top pharmaceutical, biotech, health and professional services firms, many international**, in Mississauga, Region of Peel and Toronto*
- *UTM has played an important role in advancing Mississauga's global presence through the Healthy City Stewardship Centre (HCSC), which won a **World Leadership Award gold medal** in the category of health*
- *UTM has actively **expanded the global reach of Mississauga through its recruitment strategies**. In 2012, **international students represented approximately 18% of new undergraduate intakes**, which has enriched multiculturalism, international networks and learning on campus*
- *UTM's Principal's Advisory Council (PAC), a group formed of **community, municipal and business leaders** in Mississauga, has regularly been engaged by UTM's Principal to **inform the university's direction and cultivate a future talent pipeline that addresses labour market needs**. It is another way that the university helps **foster business ties in Mississauga**.*

Over the past decade in particular, UTM has pursued international relationships and opportunities on a greater scale. As part of its Boundless Campaign, UTM strives to enhance its global reach further. Based on KPMG's qualitative data collection including multiple stakeholder interviews, quantitative and qualitative data collected from UTM and analysis, it appears that UTM's international presence is currently growing through three main areas, which are described further below. Each of these areas builds important human capital and business opportunities in Mississauga and the Region of Peel:

- **Globally-oriented studies and research**
- **Partnerships with international companies**
- **Attracting international students**

Globally-oriented Studies and Research

Companies are looking for highly-skilled workers with an understanding of global issues to contribute to the knowledge-based economy. Starting at the undergraduate level, UTM sees "preparing global citizens" as part of its objectives. Indeed, many of UTM's courses consider global issues, such as the environment, life sciences, human development, geography, religion and politics, among others. These courses include interdisciplinary approaches that stimulate students' creativity and problem-solving.

To solidify an understanding of global issues in an applied context, UTM's undergraduate program includes experiential learning initiatives, which draw students into the community to enrich their learning and future contributions. Several experiential learning courses are designed to help undergraduate students understand the significance of global issues starting from a local context.

For example, UTM's World Religion & Ecology course surveys how religious and spiritual concerns interface with contemporary environmental issues. It introduces students to concerns and debates in environmental ethics, in particular, the challenge posed to human and religious values by the present ecological situation. Insights from contemporary Jewish, Christian, Islamic, Buddhist, First Nations and other religious traditions are discussed, as are recent environmental debates concerning technology, sustainable development, and eco-activism. To deepen learning about this issue from a global perspective, the course includes a ten-hour volunteer immersion experience with a local organization in the area working on environmental issues.

Meanwhile, UTM's graduate students are immersed in research that carries global impact. Several examples illustrate UTM's growing investment in multiple fields of research, but particularly in Life Sciences.

Patrick Gunning's research on cancer is one example of UTM's involvement in research with global reach. Since joining UTM's faculty in 2007, Professor Gunning, who is from Scotland, **has attracted graduate students from around the world** to work in his lab developing cures for cancer through medicinal chemistry. The Gunning Lab originally started at 600 square feet with two fume hoods; and in a short five years has grown to 2,400 square feet and 12 fume hoods. There are now **13 PhD students, five post-doctoral researchers and six undergraduates** developing innovative molecule therapies to inhibit cancer growth. These discoveries, and others like them, are slated for commercialization. Eventually, Professor Gunning, who is one of the **Toronto Star's People to Watch in 2013**, hopes greater collaboration between UTM and Mississauga hospitals might lead to a globally renowned cancer centre in Mississauga.

Over the past five years, UTM has collaborated with approximately 90 academic and research institutions worldwide, including in the U.S., Europe, Australia, and Asia. Through these types of research initiatives, UTM is beginning to gain a reputation that has the potential to attract global industry to Mississauga and the surrounding region. Its students are training to become competitive social and life scientists at labs pursuing research with global implications. Companies in the pharmaceutical, life sciences, and tech sectors in Mississauga and the Region of Peel have begun to recognize UTM as an important feeder of valuable human capital into their ranks. This is well aligned to the City of Mississauga's Economic Development Strategy, which seeks to "provide a compelling global brand to attract business, investment and jobs".¹⁴ Stakeholder feedback suggests UTM could do more to raise its profile and develop its reputation, including further emphasizing the globally-oriented research it conducts moving forward.

"All municipalities want to become knowledge-based economies and this is fundamentally dependent on people. We want to build Mississauga's brain trust and make it a global city."

- **Deep Saini, Vice-President,
University of Toronto &
Principal, University of
Toronto Mississauga**

¹⁴ Millier Dickinson Blais Inc. City of Mississauga Economic Development Strategy "Building on Success". June 2010.

Table 11: Examples of UTM’s Research with Global Implications

Research Description	Global Impact
Animal Behavior and Mothering: UTM’s Professor Alison Fleming has studied the maternal instincts and effects of maternal deprivation through various animal species, including rats, monkeys, mice and humans. Her work has also included studies on post-partum depression’s impact on mothering motivation.	With over 150 papers published and a Psychobiology of Maternal Behaviour Lab dedicated to understanding mothering and maternal matters, Dr. Fleming’s work has contributed to global policy discussions on investing in mothers and children, human development trajectories, health, learning and society.
Learning Adaptive Software: UTM’s Professor Jeffrey Graham has developed software to accelerate the learning of math by tailoring curriculum according to each student’s ability. This initial software has evolved into educational software for various purposes, some of which was commercialized in 2008.	Today, the software is being used to expand access to education through more effective online teaching. Its application crosses sectors and age groups to facilitate the education and training of a wide variety of students and professionals.
Sensory and Cognitive Aging: UTM’s Professor Bruce Schneider conducts research on the impact of sensory organs on human cognition. Approximately 25,000-30,000 residents of Mississauga and the Region of Peel have participated in this long-term research study to understand the way newborns and the elderly use their senses to support their cognitive processing abilities.	This work is being used to help design classrooms for early learning by enhancing children’s sensory experience. It is also being applied to devising ways to improve quality of life for the elderly and to keep the growing population of seniors active and engaged in their communities.
Regional Innovation Systems: UTM’s Professor David Wolfe directed the Program on Globalization and Regional Innovation Systems (PROGRIS), whose mandate was to study how firms and institutions interact to foster the innovation process in an urban and regional context.	Through PROGRIS, a national network of researchers studying aspects of the regional innovation system was established across Canada. This research can also be applied to other jurisdictions globally as they seek a successful formula to activate innovation.

Certain research initiatives have intimately involved municipal leadership and have directly advanced Mississauga onto the international stage. Spurred by an initiative of the World Health Organization’s (WHO) Centre for Health Development (WKC) in Kobe, Japan, to improve the management of urban residents’ health, the City of Mississauga has worked closely with a UTM team of faculty and students to create a globally recognized “Mississauga Model” to advance urban health. The model entailed developing a framework to bridge the gap between research and policy making on health and quality of life issues at the municipal level.

UTM, the City of Mississauga and the WKC (see above) collaborated to improve tools for decision making related to residents’ health and well-being. From this initiative, key organizations in the city came together to collectively work toward improvements in local health and founded the Healthy City Stewardship Centre (HCSC). **The HCSC has won a World Leadership Award gold medal in the category of health.** This model of collaboration is seen as exemplary among the WHO Healthy Cities Network.¹⁵

¹⁵World Health Organization Centre for health Development. (2002) WKC Partnership Model: The Mississauga Model. Located at: http://whqlibdoc.who.int/wkc/2002/WHO_WKC_Tech.Ser._02.1.pdf

Partnerships with International Companies

As of 2012, 63 Fortune 500 companies have located their Canadian head offices or major divisional head offices in Mississauga; the city is home to 15 of the top employers in the GTA according to Globe and Mail's Top 100 Employers' List.¹⁶ These circumstances have presented UTM with a unique opportunity to develop important partnerships with industry to cultivate human capital and the next generation of leaders in the region and beyond. The university's leadership has actively engaged industry in shaping its curricula for students to meet the growing needs of Mississauga's knowledge-based economy. UTM's partnerships with international companies have resulted in professionally-oriented Master's programs that include work placements at some of the largest worldwide pharmaceutical, biotech, financial and professional services organizations.

Table 12: Examples of Work Placements from Master's Programs

Work Placements from Master's Programs		
Amgen	Cipher Pharmaceuticals	HATCH Ltd.
Apotex	Cunningham LLP	IBM
AstraZeneca	Deloitte & Touche LLP	KPMG LLP
Aventis Pasteur	Duffy, Allain & Rutten LLP	MacGillivray & Co. CA
Bayer Inc.	Education Resource Centre	Ministry of Health and Long-Term Care
BDO Canada LLP	Eli Lilly	MSCM LLP
BIOTECanada	Ernst & Young LLP	PricewaterhouseCoopers LLP
Business Development Bank of Canada	Fruitman Kates LLP	Soberman LLP
CanReg	Foragen	Starkman Eles LLP
Canadian Biotechnology Centre for Innovation in Complex Care (CICC)	Generex	Toronto General Hospital
	GlaxoSmithKline	
	Green Chencinski	

The university has forged productive relationships with globally-oriented industries through concerted effort. Enabling Mississauga's student population to remain close to home while pursuing a top education and building bridges to a stimulating career, UTM's faculty and staff, ranging from individual professors and administrators to the Principal, have collaborated with industry to prepare students for significant economic contributions with the potential for global impact.

UTM has multiple multi-national corporate donors, many of whom value the contribution the university makes in promoting the talent pool in Mississauga and the Peel Region. These donors help fund university expansions, faculty and innovative programs and foster the next generation of bright thinkers in Canada. Examples include:

- Amgen Canada recently announced support of \$425,000 that will create the Amgen Canada Fellowship in Biotechnology as well as the Amgen Canada Discovery Professorship in Health System Strategy.
- CGAO sponsored the 2013 Countdown to Success – an event designed to expose students, alumni and professionals to countless business and networking opportunities within the accounting, finance and management fields.

¹⁶ McCallion, Hazel. (2012) Mayor's Update. Located at: http://www.mississauga.ca/file/COM/2012_mayorsupdate_business.pdf

- Hatch, an organization that is a long-time supporter of new programs that advance innovative research and curriculum, established a Chair in Technology Management at UTM in the late 1990s. This was followed by the creation of a student award in 2006 supporting graduate students in the Master of Management of Innovation.
- AstraZeneca Canada made a key investment and established a Chair in Biotechnology in 1998. This Chair played a central role in the development of the Master of Biotechnology program and its link to local industry.

UTM has encouraged meaningful partnership and collaboration with multi-national and local stakeholders through its Principal's Advisory Council (PAC). This is likely to have enhanced the relevance of students' education to the economy and labour force. The PAC, a group formed of community, municipal and business leaders in Mississauga, has been engaged by UTM's Principal to inform the university's direction and act as a sounding board. The PAC is viewed by business leaders as a positive and unique way to become involved in cultivating a future talent pipeline through the university. As municipal representatives also participate in the PAC, it has been a useful networking forum. It is another way that the university helps build business ties in Mississauga. Several of the business and community leaders involved in the PAC have international ties that could help expand UTM's global impact in the future. Effective July 1, 2013, the PAC will transition to the UTM Campus Council and its Committees.¹⁷

As part of this study, representatives from several companies and business organizations were interviewed regarding the impact UTM has on their talent pipeline and business. Some of their impressions are documented below.

"UTM is an important institution in the community. It offers direct benefits to industry through its intern programs and new hires. The university shapes programs to meet community needs – it is cognizant of knitting itself into the fabric of the city and industry."

- **Anonymous, Industry Partner**

"When I take on a UTM intern student or hire a grad, I know what I am getting. Historically, grad programs were much more general. Today, students are offered world class, novel graduate programs with state-of-the-art infrastructure. This is attracting some of the best minds across the globe and they are graduating with a competitive advantage."

- **Nick Kuryluk, Director, Strategy and Program Management, Amgen Canada**

"All the different surveys and focus groups we have conducted with industry note that attracting and retaining talent is a key issue for businesses. UTM is a significant asset in our community....When businesses are looking to locate, they investigate what supports are there....Industry must have input on curriculum. In certain UTM curricula, industry is highly consulted."

- **Sheldon Leiba, President and CEO, Mississauga Board of Trade**

¹⁷ On behalf of U of T's Governing Council, the Campus Council will exercise governance oversight of campus-specific matters, as well as any matters assigned to it by the Governing Council from time-to-time. In general, the Campus Council will be concerned with matters affecting UTM's objectives and priorities, the development of long-term and short-term plans and the effective use of resources in the course of these pursuits. Members of the UTM community will have an opportunity to participate in local governance by serving on the Campus Council and/or its Standing Committees.

In some areas in particular, such as life sciences, there is evidence that UTM's academic programming, faculty and student body are gaining international attention from industry. In one example cited during a stakeholder interview, a group of Amgen representatives from California met with UTM students to hear more about their graduate work.

Attracting International Students

Mississauga is one of Canada's most diverse cities; indeed, the city had a total of 343,245 immigrants representing 51% of its 2006 population.¹⁸ It therefore seems suitable that UTM's campus and student body would seek to reflect its community's diversity.

In 2012, the proportion of new undergraduate international students among total intakes was approximately 18%.¹⁹ While the direct economic contributions of international students through the tuition they pay and their local spending are relatively easy to quantify, the long-term benefits of drawing international students to UTM must also be considered. International students bring with them networks and contacts that can grow into future economic opportunity. They can enhance the university experience by offering different perspectives to academic coursework, as well as diverse cultural norms that contribute to a more inclusive community.

A recent study developed by Oxford Economics and commissioned by the University of Sheffield outlines the long-term community benefits likely to result from the presence of international students at a local university. These include a boost to demand as a consequence of increased familiarity with locally-produced goods; the potential for international relations to be fostered by international students attaining positions of influence abroad; and increased tourism revenues if international students return to visit the region.²⁰ These align with benefits that UTM is advancing in Mississauga and the Region of Peel currently.

UTM is playing an increasing role in supporting Mississauga's goal of becoming "a global hub" of talented professionals:

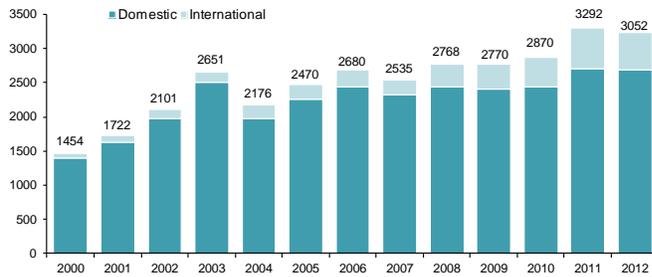
- It actively recruits international students at top Canadian high schools and abroad;
- In the future, a quarter of UTM's enrolment is anticipated to be international students;
- It is seeking ways to generate ambassadorial relationships for Mississauga through a well-networked student body.

¹⁸ Peel Data Centre. Ward Profile. Located at: <http://www.peelregion.ca/planning/pdc/data/census/wardprofiles/wds-Mississauga.htm>

¹⁹ Based on 544 international and international exempt new intakes out of 3,052 total enrolments as of November 2012

²⁰ Oxford Economics. (2013) The Economic Costs and Benefits of International Students. Located at: https://www.sheffield.ac.uk/polopoly_fs/1.259052!/file/sheffield-international-students-report.pdf

Figure 10: New Undergraduate Intakes, 2000-2012



Source: University of Toronto Mississauga

Figure 11: New Undergraduate Intakes – Citizenship Country, Excluding Canada, 2012²¹

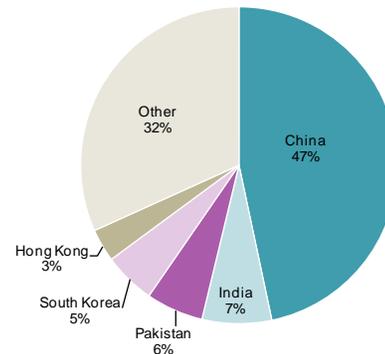


Figure 11, above, illustrates the citizenship countries of new international undergraduate intakes. Dozens of countries are represented on UTM’s campus, making the opportunities for international exchange and learning significant.

In exchange, UTM provides international students with the skills and professional training required to contribute successfully to work environments both in Canada and abroad. These students have access to internship and experiential learning placements that promote international collaboration, build lasting networks and develop leadership talent. International students graduate to become active agents in their economies. Approximately 4%, or nearly 2,000, of UTM’s 43,000 active alumni live abroad, while 39% continue to live in Mississauga and 45% in the broader Region of Peel.

“The international students who don’t stay in Mississauga become champions for our city. It is also important that we retain some of the international talent here.”

**Susan Amring, Director,
Economic Development,
City of Mississauga**

Through its Boundless Campaign, UTM aims to expand its global presence further. A Centre for South Asian Civilizations will promote student exchanges and more interdisciplinary research in South Asian studies, as well as a lecture series that will feature South Asian scholars, artists and public figures. Given that a large portion of the student body and surrounding community is of South Asian descent, this centre aims to improve economic links between Canada and South Asia. It is envisioned to support critical cultural and linguistic training to facilitate business and commerce.

²¹ Citizenship country as reported by 1043 new non-Canadian undergraduate intakes as of September 2012

4.3 Driving a Culture of Innovation

HIGHLIGHTS

Success in the pursuit of innovation must involve collaboration among academia, industry, government and the community. It starts with establishing a forum to cultivate new ideas and providing the supports to enable those ideas to become a reality.

- For **every \$1 of internal research funding** invested, UTM is able to **leverage this into over \$60 of external research funding** from federal and provincial grants and corporate and other sponsors
- UTM faculty have been recognized for their research contributions with **over 30 awards and honours since 2009, from institutions in Canada as well as around the globe** in science, psychology, linguistics, humanities and forensics
- UTM is establishing an **Institute for Management and Innovation** that will house its five professional graduate programs, many of which have been **developed with industry leaders to address perceived workforce gaps** and fulfill the needs of key sectors
- UTM is helping to drive innovation in the region's **key priority areas of advanced manufacturing, aerospace, life sciences and emerging technologies** through the various commercialization and business development initiatives.

UTM actively invests in innovation and takes a multi-faceted approach to promoting a practically-oriented innovation agenda. In recent years, it has been engaged in important municipal and regional discussions on fostering greater innovation in the local economy. Students, faculty, alumni, industry leaders and community partners are encouraged to work together to think critically about the future in order to advance the region. Through the Boundless Campaign, UTM anticipates playing an increasing role in promoting innovation in Mississauga and the Region of Peel. Based on our findings, there are three key areas where UTM is currently making a concerted push in driving innovation:

- **Cutting-edge research spanning many disciplines**
- **Novel academic programs that challenge the status quo**
- **Efforts to promote an innovative economy and community**

Cutting-edge Research Spanning Many Disciplines

Over the past decade, UTM has sought to expand its research capabilities through investments in infrastructure, attraction of world-class faculty, and partnerships with government and industry. This has enabled new and innovative research projects in science, linguistics, psychology and the humanities. In 2012, UTM ranked 19th for its social science research performance and 23rd for its science and engineering research performance in Canada.²² The positive implications of UTM's research agenda include national and international recognition, funding, and awards by governments and other organizations. Research has also enabled UTM to further develop ties with academic institutions around the world.

²² Jarvey, P and Usher, A. Measuring Academic Research in Canada: Field-Normalized Academic Rankings 2012. Higher Education Strategy Associates. Rankings based on H-index results (measure of overall productivity and impact) and 2010-11 federal granting council awards (each weighted at 50%).

Innovative Research Programs at UTM

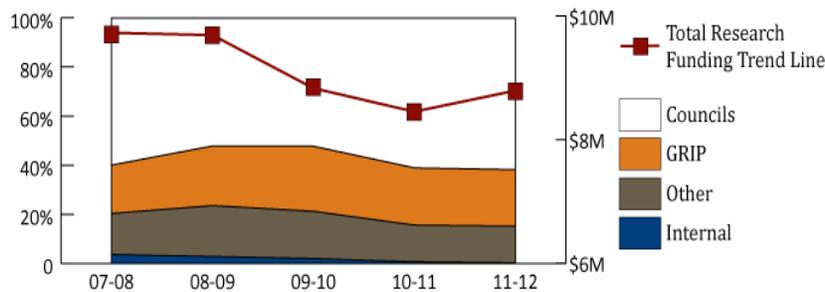
- The **Network for Sensory Research** is a partnership with institutions in Toronto, London, Glasgow, Boston and Cambridge, MA. The aim of this project is to develop new theoretical models of the senses that will fully incorporate and account for recent work in multisensory integration. The ultimate goal of this project will involve a creation of a research centre: the Toronto Institute for the Study of the Senses. – *M. Matthen, Department of Philosophy*
- The **Centre for Applied Biosciences and Biotechnology (CABB)** represents a highly interdisciplinary research consortium that has emerged from the success of this approach to research at UTM. CABB combines internationally competitive fundamental academic research strength in botany, chemistry and zoology with internationally competitive applied research strength in the areas of risk assessment, risk management and real-time analysis involving mathematics, geology, and geography. – *U.J. Krull, Department of Chemical and Physical Sciences*
- The **Centre for Historical Ecology in Northeast Asia** will establish partnerships to compare ancient human ecology in China, Japan and South Korea. The objective is to come to an understanding of the similarities and differences among the responses of early people to climate change and investigate human populations' impacts on local economy from a comparative perspective. – *G. Crawford, Department of Anthropology*
- The **MissCHIF – UTM Computer-Human Interaction Facility** specializes in computer-human interaction, a sub-discipline of computer science that studies, plans and designs technology to humanize our experience with the digital world. – *D. Wigdor, Department of Mathematical and Computational Sciences*

UTM contributes to the local economy through research funds attracted from outside the province and the country that are spent in the local region. Traditionally, UTM has focused on undergraduate education and has primarily been a teaching campus. However, as it aspires to increasingly adopt a research and innovation mandate, its research revenues are expected to grow.

The average annual (normalized)²³ research revenue at UTM from all sources is \$9.1 million, which represents an average of 478 active research projects a year. Approximately 50-60% of these revenues are provided through federal grants and councils in science, health and social sciences and 30% of revenues are obtained through federal or provincial funded programs that provide support for infrastructure or research salaries. Internal funding typically represents 1-2% of research funds. Thus, KPMG estimates that **for every \$1 of internal research funding invested, UTM is able to leverage it into over \$60 of external research funding.** The \$9.1 million in research revenue could be considered a growing base for continued efforts to expand the research contribution UTM currently makes.

²³ Research grants are often multi-year, with revenue coming to UTM in annual grant award installments so revenues are normalized.

Figure 12: Research Revenues and Sources, 2007-2012²⁴



Source: University of Toronto Mississauga

In fostering a research mandate, UTM will require additional investments in research over the coming years. From 2008 to 2012, UTM witnessed a slight decline in research revenues, simultaneous to the global economic downturn and its aftermath. Should the university plan to emphasize research more within its curriculum as intended, a focus on increased investments in research will be necessary.

Every year, UTM faculty members are awarded a number of awards and research funds from federal and international sources, spanning many disciplines. Notable sponsors in recent years include the U.S. National Institutes of Health, the Canadian Breast Cancer Foundation and the Henry Luce Foundation. These awards allow UTM to conduct world-class research in high-tech facilities and attract top faculty. Ultimately, this builds the competitiveness of the region and contributes to the innovation objectives of the municipal and provincial governments.

Substantial Federal & International Research Funds

- **Patrick Gunning** received **\$450K** from the Canadian Breast Council of Canada (2012)
- **Amrita Daniere** received **\$301K** from Social Sciences & Humanities Research Canada (2012)
- **Joel Levine** received **\$665K** from the Canadian Institutes for Health Research (2010)
- **Ulrich Krull** received **\$492K** from the Natural Sciences and Engineering Research Council of Canada – Strategic Partnerships Program (2009)
- **Robert Gerlai** received **\$1.2M** from the U.S. National Institutes of Health (2007)

Since 2009, UTM faculty have received over 30 awards and honours for their research contributions. They have been recognized by Canadian organizations as well as by institutions across the globe, including the Government of Spain, International Society for Iranian Studies, National Cheng Kung University and the Sloan Foundation in the U.S. The variety of awards demonstrates the growing national and global influence of the research programs at UTM, even though they are relatively new. From research in vertebrate paleontology to philosophy of perception to Italian language and literature, these awards also reflect the range of subject areas that UTM’s research spans. Furthermore, UTM’s research has the potential to make positive contributions to the local community in areas such as new treatments for type 2 diabetes, criminology, protection of Ontario’s agricultural crops and cancer.

²⁴ **Councils:** All direct Natural Sciences and Engineering Research Council of Canada (NSERC), Canadian Institutes of Health Research (CIHR) & Social Sciences and Humanities Research Council (SHRC) funding, including SSHRC Institutional Grant (SIG) funds attributed to departments; **GRIP:** Government Research Initiative Program (infrastructure & salary-support programs); **Other:** all other external sources (industry, government agencies and council sub-grants from other universities); **Internal:** U of T’s Connaught fund & other internal funding programs

Table 13: Examples of UTM Faculty Awards & Honours, 2012-2013

Year	Award/Honour	Sponsor	Recipient	Research
Faculty				
2013	Community Services Award	Life Sciences Ontario	Ulrich Krull	Analytic chemistry
2013	Distinguished Visiting Chair	National Cheng Kung University	Robert Reisz	Vertebrate paleontology
2013	Canada's Sloan Fellowship	Sloan Foundation (U.S.)	Vinod Valkuntanathan	New types of encryption
2012	Visiting Professor	Monash University, Australia	Kelly Hannah-Moffatt	Criminology
2012	MedChemComm New Talent Investigator	Royal Society for Chemistry	Patrick Gunning	Organic and inorganic synthesis
2012	CIHR New Investigator Award	Canadian Institutes of Health Research	Tina Malti	Developmental psychology
2012	Early Researcher Award	Ontario Ministry of Research and Innovation	Voula Kanelis	Developing new treatments for type 2 diabetes
2012	Early Researcher Award	Ontario Ministry of Research and Innovation	Marc Johnson	Protecting Ontario's agricultural crops
2012	RSC Fellowship	Royal Society of Canada	Mohan Matthen	Philosophy of perception

UTM students have also received awards and honours for their research work. In 2012, a psychology student won the Vanier Canada Graduate Scholarship from the Social Sciences & Humanities Research Council for research in prosocial behaviour. In 2011, a student in the chemical and physical sciences department won the Governor General's Gold Medal for work in analytical chemistry. Through its research programs, UTM is helping to develop a knowledge-based economy by enabling talented students to pursue innovative research projects.

"At UTM, I was able to match my ambition and research goals with a collegial work environment and quality students. The school is accommodating and puts their money where their mouth is."

- **Professor Patrick Gunning, Department of Chemical & Physical Sciences, UTM**

Novel Academic Programs that Challenge the Status Quo

Over the years, UTM has made a concerted effort to offer differentiated academic programs at undergraduate and graduate levels that help to drive a culture of innovation in the region. These programs have been designed specifically to meet perceived gaps in educational offerings and many have been tailored in collaboration with industry leaders and community partners. Through these programs, UTM is contributing to the development of a knowledge-based economy in Mississauga, the Region of Peel and the broader western GTA. Additionally, these programs meet the strategic priorities of the region in developing talent in key industries, such as health and life sciences and technology sectors.

“We need to capitalize on a void and focus on teaching students how to innovate as they become specialists in a chosen field.”

- **Ulrich Krull, VP, Special Initiatives, UTM**

The **Master of Biotechnology** (MBiotech) is a 24-month course-based professional degree for students with a background in life sciences who are interested in the intersection of science, business and technology. Faculty from the Departments of Biology, Chemical and Physical Sciences, and Management teach the coursework for this program and invite guest lecturers from the government, public and private sectors and other U of T departments. Teamwork, leadership, innovation and entrepreneurship are key target skills developed throughout the program.

The MBiotech was designed with the assistance of industry in Mississauga to achieve a curriculum producing graduates “ready for the workplace,” with the necessary technical and management expertise. The goal was to implement a program that delivered the core skills that industry actually needed. The program incorporates an international perspective to prepare students to work in a global environment. As part of the program, students undertake an eight-12 month paid work internship in the biotechnology, medical device and biopharmaceutical sectors. Many of these students go on to work with the same companies full-time. Industry partners include Amgen, AstraZeneca, Business Development Bank of Canada, EliLilly, Glaxo SmithKline, Hoffmann-La Roche, Sanofi Pasteur and Stryker.

About 80% of MBiotech graduates are employed in the biotechnology and biopharmaceutical sectors within six months of graduating. Many students go on to pursue advanced degrees and professional accreditations.

As part of the MBiotech program, students work in teams on projects that look to **commercialize products** and garner the interest of industry stakeholders. The teams focus on projects that are highly relevant to the private sector or hospitals and **develop business, marketing and financing plans** to bring their products to market within 24 months, keeping development costs to a maximum of \$200K. The **following projects are moving forward for funding** and have the potential for positive economic impacts on the regional economy.

- A portable ultrasound
- Internet medical records
- An insulin pump
- *C.Difficile* screening
- iPhone medical imaging

“UTM fosters the spirit of challenging the norm or changing the way of thinking...it has the flexibility as a school to take risks, be adaptive and respond...this is strength of the university...it is forward thinking.”

- **Jonathan Eckert, Senior Marketing Manager, AstraZeneca, MBiotech Graduate (2008)**

The **Master of Management of Innovation** (MMI) is a 12-month professional management degree that is jointly offered by the Department of Management, UTM, the Institute of Health Policy, Management and Evaluation in the Faculty of Medicine. Faculty are leading researchers in innovation, health policy,

economics, management and political science. Students complete a four-month work term in industry to complement their academic studies. The MMI program was designed in collaboration with leaders and employers in industry, government and research.

The **Master of Biomedical Communications** (MScBMC) is a 24-month professional graduate program for students wishing to pursue careers in the visual communication of science, medicine and health. This program is the only one of its kind in Canada. Students explore the use of images, interactive technologies and animation/simulation to communicate complex science and health topics to a range of audiences. Graduates in this program go on to work in areas such as pharmaceuticals, biotechnology and medical-legal visualization, health communication, research dissemination and textbook publication.

UTM is in the process of establishing an **Institute for Management and Innovation** that will build on its interdisciplinary programs in management, accounting, biotechnology, innovation and sustainability. The purpose of this institute is to **meet the needs of industry sectors in the region and drive innovation and economic growth**. The Institute will **enable collaboration between industry and government partners as well as the broader community**. The Institute will build on the following programs: Master of Biotechnology, Master of Management of Innovation, new Master of Science in Sustainability and Management, Master of Management and Professional Accounting, Bachelor of Business Administration and Bachelor of Commerce. **UTM plans to hire 40 new professors as it expands this Institute**, which will have economic and social impacts on the regional community through the knowledge, expertise and networks that this high quality faculty will bring.

UTM's **Forensic Sciences Honours BSc program** was the first of its kind to be offered in Canada. It was developed 18 years ago to help resolve perceived issues in the forensic sciences industry after a report was published on miscarriages in the Canadian justice system. Although the program began small as a double major option, it has grown significantly and students can now specialize in the fields of forensic anthropology, forensic biology, forensic chemistry, and forensic psychology. The program encourages innovation not only by looking at and addressing the needs of the forensic sciences industry, but also by predicting them in advance. For example, the program offers forensic visualization, which involves capturing evidence and displaying it visually.

During the fourth year, students participate in an internship ranging from policing, crime labs, courts, hospitals, and consulting. Some students have participated in international internships in countries such as Singapore and the UK. During this year, students also engage in novel research that the organizations either do not have the resources to mandate to undertake. Students then write up the research for publication as part of their final project. The *Identification Canada Journal* and the *Journal of Forensic Science* have accepted student's research in the past. The program attracts students from across Canada and abroad.

"UTM is creating the brightest minds, which creates sustainability and economic prosperity."

- **Michael Cloutier, Past President and CEO, Canadian Diabetes Association**

"There is a need for collaboration and converging ideas...that is where innovation is sparked...gone are the times of silos...UTM brings a highly educated talent pool aligned with key sectors."

- **Susan Amring, Director, Economic Development, City of Mississauga**

While UTM has collaborated substantially with industry to develop student talent that directly responds to labour market needs, opportunities to address future human capital requirements within the curriculum remain. For example, interviews described the need for engineering and additional finance programs beyond accounting at UTM to meet labour demand.

Efforts to Promote an Innovative Economy and Community

UTM highly values the partnerships it has developed with a range of local industry partners, including from life sciences, pharmaceuticals, financial and government sectors. Over the past ten years, UTM has cultivated research partnerships with over 35 companies; a few of these include companies formed by UTM faculty or alumni. This form of collaboration supports the Economic Development Strategy of the City of Mississauga, which aims to “leverage [Mississauga’s] post secondary institutions, centres of excellence and research institutes to drive innovation and economic impact”.²⁵

UTM’s average annual normalized research revenue from corporate sources is \$81,000, which represents an average of seven active corporate-funded projects a year. It is important to note that this sum does not account for in-kind contributions that are typically at levels equal to cash contributions. However, if UTM and industry wish to continue to expand innovation and commercialization efforts in the region, an increase in corporate-sponsored research funding is imperative.

Examples of industry sponsored research funding

- David McMillen received funding from ACGT Corporation for “optical and engineering design for an instrument platform” research
- Ulrich Fekl received funding from Green Galaxy Companies for “metal complexities” research
- Kathy Pichora-Fuller received funding from Oticon for “spatial listening, hearing loss and hearing aids” research

UTM’s research commercialization contributes to various industry sectors and has positive economic implications overall. In 2012/13, UTM had eight active commercialization projects, two disclosures under review, five patent applications, two patents issued and three license agreements being handled by U of T’s Innovations and Partnerships Office.²⁶ Through greater emphasis on research and continued collaboration with industry partners, UTM aims to further increase innovation and commercialization activity.

UTM, faculty and staff are currently involved in a number of innovative business and commercialization enterprises that enhance the local economy through the development of new ideas. These initiatives have the potential to bring economic prosperity to the region. From 2003 to 2005, UTM was a founding partner with the City of Mississauga of the **Mississauga Technology Business Accelerator (MTBA)**. Its mission is to “act as a centre of innovation for Mississauga’s technology cluster, enabling entrepreneurs to accelerate their technology businesses globally by providing a unique collaborative environment”. The

²⁵ Millier Dickinson Blais Inc. City of Mississauga Economic Development Strategy “Building on Success”. June 2010.

²⁶ Does not include any IP that was chosen by inventors to be privately managed outside of the U of T Innovations and Partnerships Office

MTBA provides assistance to entrepreneurs through access to resources at academic and research institutions and Mississauga's technology and business communities.

In 2005, UTM helped to create the **Western Greater Toronto Area Convergence Centre**, the precursor organization to the **Research Innovation Commercialization (RIC) Centre**. The RIC Centre was developed in 2009 in partnership with the Mississauga Board of Trade to help technology entrepreneurs in the Region of Peel to market their ideas. The RIC Centre collaborates with businesses, the government and academia to support and promote innovation in key priority areas such as advanced manufacturing, aerospace, life sciences and emerging technologies.

As a Founding Partner, UTM has been involved with the RIC Centre in many capacities. UTM's Vice-Principal of Special Initiatives, Ulrich Krull, played a pivotal role in the Centre's development and continues to support it by providing guidance when needed. As well, UTM previously served as the location of regular RIC Centre breakfast networking meetings. UTM's Principal, Deep Saini, sits on the RIC Centre's Board of Directors, while a graduate student from UTM's MBiotech program annually fills an internship position at the Centre. Undergraduate interns also assist in supporting the RIC Centre's client companies. Through such avenues, UTM is directly contributing to innovation and commercialization in the region.

"Students are invaluable because we are a not-for-profit organization...we don't have the bandwidth to pay someone to do that...the students are bright and resourceful and they keep you fresh."

- **Pam Banks, Executive Director, RIC Centre**

UTM plays an important role in economic development and the Mississauga's business relations through the **Mississauga Board of Trade** (MBOT). Since 2008, UTM's Executive Director of Advancement, Andrew Stelmacovich, has been a member of MBOT's Board of Directors. In 2010, he assumed the role of Vice-Chair and works closely with MBOT members and senior business leaders on local and regional policy issues, government affairs and strategic planning. He recently co-chaired a task force on MBOT's long-term business development goals and has helped advance a value proposition for MBOT centered on business connectivity, services for firms with high growth potential, and leadership in the municipal innovation agenda. UTM is actively supporting MBOT as it strives to become the pre-eminent business association in Mississauga.

UTM has been a significant supporter of City of Mississauga innovation initiatives, such as the **Mississauga Summit**, which convened residents to discuss topics related to sustainability, innovation and diversity from 2007-2011. Through this initiative, UTM focused on a key area of contribution – namely the creation of a post-secondary education task-force to promote economic and human capital development. In 2008, Andrew Stelmacovich, Executive Director of Advancement, joined the Summit's Steering Committee, became a member of the post-secondary education task-force, and, in 2010, helped drive the Mississauga Jobs Summit. UTM hosted the Summit's pinnacle event launching the post-secondary task-force ideas on October 25, 2011. This event brought together hundreds of citizens to learn of the Summit's efforts and the post-secondary task-force; it was co-chaired by Anthony Wensley, Professor and Director of the Institute for Communication, Culture and Information Technology.

Additional UTM professors, such as Ulrich Krull, Vice-Principal, Special Initiatives, and Professor Hugh Gunz, past Chair of the Department of Management, supported the task force's efforts leading to the creation of Mississauga Innovation Leadership Alliance. This ultimately became the organization currently known as Advantage Mississauga.

UTM has played a key role in the recent formation of **Advantage Mississauga**, an educational-business-government consortium that will enhance connectivity between business and academic institutions. This platform is intended to enable innovation and stimulate economic prosperity in the region. Other partners include the City of Mississauga, Sheridan College, the Mississauga Board of Trade, the RIC Centre and community organizations. This initiative was launched in September 2012 with a goal of "making the City of Mississauga recognized as a top global city for creativity and innovation".²⁷

Additional Examples of UTM's Industry and Community Collaboration that Drives Innovation

- **RiskLab** – An innovation hub at UTM that integrates academic research, industrial innovation and governmental oversight with financial risk management. U of T established an independent branch of RiskLab in 1996, sponsored by Algorithmics Incorporated, who has partnered with several RiskLabs throughout the world. In 2007, Professor Luis Seco was awarded the NSERC Synergy Award for Innovation in recognition of the fact that it was RiskLab at UTM that "franchised" and helped to form RiskLab Global (previously RiskLab International).
- **Trillium Therapeutics Incorporated (TTI)** – UTM hosts TTI, an organization that is presently leasing space and using the facilities at UTM for the research component of its business. TTI is a privately owned biopharmaceutical company that mainly focuses its research on cytoprotection and immune regulation, and has several therapeutic areas, such as cancer, stem cell transplantation and autoimmune/inflammatory disease.
- **Google** – Through a computer science grant from Google, Andrew Peterson, Senior Lecturer, Math and Computational Science and colleagues launched Computer Science for High School (CS4HS) in 2012. CS4HS is a workshop geared to help high school teachers develop skills and build computer science curricula. In supporting projects of this type, Google helps support computer literacy among high school and middle school teachers, ultimately educating students who may go on to pursue computer science or engineering at university.

UTM sees its role as supporting Mississauga and the Region of Peel to promote innovation in the local economy through its research, academic programs and industry collaborations. Through its Boundless Campaign, UTM aims to "build a better ecosystem for training future innovators, entrepreneurs and managers." In particular, the Institute for Management and Innovation aims to "drive innovation and develop products and services that deliver economic and social benefits to people's lives".²⁸

²⁷ Advantage Mississauga. Where talent creates opportunity. Located at: <http://advantagemississauga.ca/>

²⁸ Boundless Innovation: The Campaign for the University of Toronto Mississauga.

4.4 Strategic Growth and Meeting Unique Needs of the Community

HIGHLIGHTS

Civic engagement, social progress, and improving quality of life and living standards are core values of Canadian society. Educational institutions realize these values in community, municipal and regional contexts.

- *As part of U of T's pledge that **no student offered admission should be unable to enter or complete their studies due to lack of financial means**, UTM provides a variety of bursaries and scholarships to its students to **increase access and opportunity***
- ***Tens of thousands of community members use the Mississauga campus and its award-winning facilities each year** to improve their health, participate in professional and recreational activities, and enjoy campus events – among other attractions*
- *UTM **undergraduate students have contributed over 45,000 hours** of student service in Mississauga and the Region of Peel, amounting to an estimated \$1.1 million per annum in value for various community and other organizations*
- *The **Mississauga Academy of Medicine** is projected to reach an **enrollment of 216 students by 2015** and addresses a **pressing need for more physicians, including more family doctors**, in the Region of Peel*
- *Course enrolment at the **School of Continuing Studies (SCS) at UTM has more than doubled** in the last five years, indicating a high demand among community members for lifelong learning and retraining opportunities*
- *Specific SCS courses for **immigrant and newcomer populations** aid in successful integration and job placement. For example, of the 127 participants in the Pathways to Employment in Biotechnology program (described below), more than **50% of participants secured employment within 12 months of completing the program** and 73% were employed in their own or a related field by the end of July, 2012*
- *Based on a total alumni population of approximately 37,500, it is estimated that, **in 2012, UTM alumni living in the broader GTA had earned an additional \$1 billion** as a result of their undergraduate and graduate training at UTM. This is a reflection of higher wages due to increased productivity of those with university training.*

UTM is a recognized contributor to social and cultural life in Mississauga and the Region of Peel. Its campus is open to the broader community, its faculty are involved in city and industry initiatives, and its students are highly encouraged to participate in extra-curricular activities that include enhancing the area's quality of life. Among the ways in which UTM meets the strategic needs of the community, our findings point to three main categories of impact:

- **Supporting community events and activities**
- **Promoting community engagement among students**
- **Responding to the community's academic needs**

Supporting Community Events, Activities, and Health

UTM promotes quality of life in the community by making its space available to outside groups to host events and activities. Approximately 13 organizations, ranging from test prep companies, volunteer organizations, professional associations, and recreational clubs, regularly book meeting space at UTM. These organizations provide important services to families and youth practicing for post-secondary

entrance exams, seniors convening to socialize and stay active, and professionals building and maintaining their networks. These organizations draw thousands of people onto UTM’s campus each year, as described in the table below:

Table 14: Examples of Community Activities on UTM’s Campus, 2012

Name of Community Activity	Total Sessions (#)	Total People (#)
Rotary Club	49	1,470
Certified Management Accountants	75	5,625
Princeton Review	378	28,350
Mississauga Summit	1	350
Chess Club	50	7,500
TedX	1	500
Countdown to Success	1	500

In addition to regular meeting space, UTM also shares its facilities with diverse groups over the summer months. UTM partners with approximately 34 organizations to host athletic tournaments and training camps. From badminton to wheelchair basketball to yoga, the surrounding community is welcome to take advantage of the sports and recreational facilities that the campus offers.

From May to August 2012, approximately 20 different overnight conferences were hosted at UTM:

- Many of these are youth conference such as YWCA, Rotary, Special Olympics, and the Mississauga Grade 8 Girls Conference
- Over 2,250 overnight conference delegates from across the Region of Peel and the Greater Toronto Area used UTM’s facilities
- In hosting these events, UTM facilitates youth development, sports training, and academic, cultural and religious education

A number of university events are open to the community, some attracting up to 1,500 people at no charge. These events provide opportunities for continuous learning to residents in Mississauga, the Region of Peel and broader southern Ontario. In 2012, UTM organized several lectures including the Snider Series (featuring Jane Goodall), David Chilton (the Wealthy Barber), the Canadian Perspective Series, and other public lectures to inform and educate, offer new insights on current issues, and introduce new ideas and technologies that shape lives. Access to these events contributes to increased intellectual development and quality of life for the community.

Other examples of community outreach include UTM’s Department of English and Drama. Drama productions at the Erindale Studio Theatre are regularly reviewed in the Mississauga News and are frequently featured on the annual top ten lists of the online Ontario Art Review. Public performances, particularly matinees, are well-attended by local audiences and, at times, sold out. Attendance suggests this is an important cultural asset to the community.

The impact of UTM’s facilities extends beyond its students into the community. Whether community members stop by UTM to watch the Toronto Argonauts practice or whether they attend a lecture, the campus is a valued asset for residents of Mississauga and the Region of Peel. Some stakeholders expressed a desire for UTM to conduct more outreach and offer more community programming to encourage even greater use of the campus by Mississauga and surrounding residents. Its facilities provide important recreational, learning and athletic space to promote quality of life in the municipality and region.

Promoting Community Engagement among Students

Many of UTM’s 12,800 students spend part of their post-secondary years volunteering, pursuing local internships and engaging in experiential learning placements that enhance the capacity of individual organizations.

Through UTM’s residence programs and Student Life, undergraduate students can volunteer their time across a number of organizations. Though these volunteer contributions are unpaid, the value of the students’ time is not lost on the organizations they support, many of which are non-profits and have limited resources. Indeed, the students’ time and effort address a wide variety of organizational needs, from strategic communications and awareness-raising through social media, to event planning to combat violence against women in the Peel Region through “Take Back the Night” community events, to addressing the community’s acute needs for youth mentoring and food security. Examples of these volunteer organizations, the majority local, are presented below.

“The City of Mississauga has employed 25 interns over the past eight years....Working with UTM interns has enhanced the city’s ability to implement programs, and improved our partnership with the university and the community.”

*- Environmental Coordinator,
Transportation & Works,
City of Mississauga*

Table 15: Examples of Organizations at which UTM Students Volunteer

Activity	Description	Students (#)	Volunteer Hours per student
Big Brothers Big Sisters of Peel – Group Mentoring Program	A 24-week program brings 14 Littles (youth from 10-16) from the Peel Region to the university to interact with eight Bigs, (seven UTM students and one professional staff member), and take part in a variety of activities	8	55
Caledon Dufferin Victim Services (CDVS) – Community Innovation Project, Social Media Strategy	CDVS identified a need within their organization that they could not implement on their own, due to a lack of human resources and expertise. A team of five UTM students was convened (through an application and interview process) to develop a themed social media strategy, with a focus on Facebook, for CDVS, as well as a new branding strategy to increase awareness	5 students 2 staff	30 (students) 25 (staff)
Community Environment Alliance (CEA) – Food Security	CEA has started growing local organic food in a community farm and in a school community garden to help low-income families access fresh produce	5 students 2 staff	20 (students) 15 (staff)

“UTM does a good job of trying to offer as many [community-oriented] programs as possible. The university really encourages students to get involved and realize that there is a lot of learning to be done outside the classroom.”

- **Ashley Nunes, UTM Undergraduate Biology Student**

In addition to the community contributions through Student Life and programs offered through the residences, UTM undergraduate students volunteer their time through academic experiential learning programs. These practicum courses include unpaid internships that amount to approximately 45,000 hours per annum of student service in Mississauga and the Region of Peel. Stakeholder interviews and

“...I immigrated to Canada as an adult, meaning that I left all my networking achievements behind...the internship gave me not only an opportunity to learn about the Canadian working environment and its rules and ways around, but also to demonstrate to potential employers my strengths and knowledge...”

**Nataliya Zhukhova,
Former Biology internship student**

data collection suggested that experiential learning programs are highly valued by organizations at which students are placed, particularly the non-profits. These also provide important opportunities for students to gain professional experience and ready themselves for the workplace. The possibility of additional support to expand these programs was seen to offer significant benefit to the community. Stakeholders particularly noted opportunities to develop additional internships in priority labour market areas such as banking, supply chain, transportation and logistics.

A sample list of experiential learning internship placements is below:

Table 16: Examples of Experiential Learning Internships

Experiential Learning Internship Placements	
<ul style="list-style-type: none"> ● Citizens for the Advancement of Community Development ● City of Brampton ● City of Mississauga Community Services (<i>Urban Forestry, Planning & Heritage, Parks & Recreation</i>) ● Credit Valley Hospital (<i>Critical Care, Pathology, Speech & Audiology, Occupational Therapy, Peel Regional Cancer Centre</i>) ● Dufferin Peel Catholic District School Board 	<ul style="list-style-type: none"> ● Halton District School Board ● Immigrant Women’s Settlement Agency ● Mississauga Transit ● Peel District School Board ● Region of Peel (<i>Accessibility Planning, Environmental Health, Public Health, Waste Management</i>) ● Safe City Mississauga (<i>Police Crime Analysis</i>)

The economic and social impact of the unpaid internship and volunteer roles that students assume in the community is significant. Imagine Canada’s Volunteer Value Calculator, which estimates the dollar value of the time volunteers contribute by assigning a wage rate to each hour of volunteer activity, has been applied to UTM students’ volunteer hours and roles to determine an approximate dollar worth of these

contributions. Based on the roles that students typically perform and their wage values,²⁹ the average dollar value of each volunteer hour amounts to \$22.51 before benefits. This implies that UTM undergraduate students donated an estimated \$1.1 million worth of time and human resources to the community during the 2012-2013 academic year.

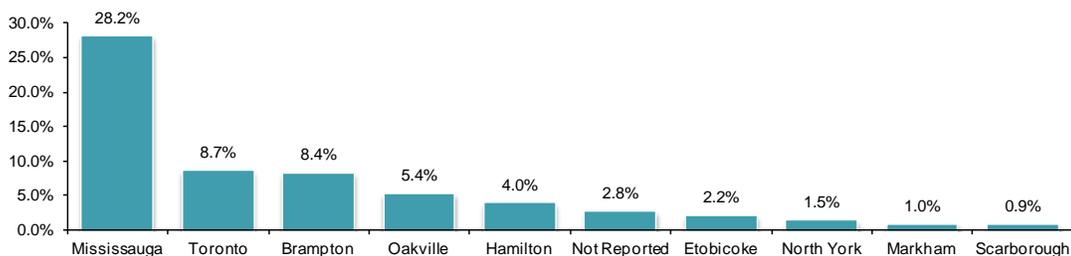
Responding to the Community's Academic Needs

UTM is helping to meet the demand for university education for families and students in the western GTA. The Peel Region and municipalities west of the GTA are home to approximately two million people. These populations need access to high quality post-secondary education. With its strong life sciences, tech, and finance industries, Mississauga attracts an educated workforce that desires to educate its next generation. The UTM campus provides prospective university students west of Toronto an opportunity to gain degrees at a world-class institution in their own backyard. Nearly a third of UTM's enrolled students were from Mississauga in 2012 and almost half came from areas west of Toronto, including other parts of the Region of Peel.

"Having a university in Mississauga is a significant factor for companies determining where to locate. It attracts settlers. If I have to relocate my family somewhere, I want to make sure it offers a good education."

**- Bob Dechert,
Member of Parliament,
Mississauga-Erindale**

Figure 13: UTM Top Feeder Municipalities and Sub-Municipalities for Enrolment, 2012³⁰



Source: University of Toronto Mississauga

As one of two post-secondary institutions in Mississauga and its only university, UTM comprises an important part of the education ecosystem in the western GTA. Availability and access to UTM has been recognized by several stakeholders as making the city more attractive to high caliber professionals recruited by the area's multinationals. Their interest in moving to Mississauga and the Region of Peel reportedly increases with the availability of a university close to home for their children.

²⁹ Based on data from UTM, it appears that students typically perform the roles of program and policy research, writing and PR, social and community work, conference and event planning. Imagine Canada suggests that wages for these activities range from \$17.21 to \$27.86, not including benefits. See <http://volunteercalculator.imaginecanada.ca/eng/default.asp?tabset=4> for more information.

³⁰ Based on data provided by UTM. For this data set, KPMG did not analyze the breakdown of postal codes for each municipality.

Furthermore, UTM offers joint programs with Sheridan College that augment the variety of educational opportunities available to both university and college students. For example, UTM's Institute for Communication, Culture and Information Technology (ICCIT) partners with Sheridan College for the delivery of its Communication, Culture and Information Technology (CCIT) and Digital Enterprise Management (DEM) programs. This partnership allows students to complete a Certificate of Digital Communication from Sheridan concurrently with a Bachelor of Arts degree from the University of Toronto. The professional and practical experience of Sheridan's faculty, as well as its advanced lab and media equipment, enhance student experience and provide a comprehensive preparation for future careers that involve such technical skills as web or graphic design and media production. This is one of several joint programs that enhance the educational options for students in Mississauga and the surrounding area. The Ontario Council for Articulation and Transfer (ONCAT), an organization that facilitates and supports academic collaboration and the development of transfer pathways among Ontario's publicly funded colleges and universities, has cited the UTM-Sheridan joint programs as an example of "successful student-centred partnerships between colleges and universities in Ontario."³¹ Stakeholders suggested that an even stronger partnership between UTM and Sheridan could be developed, with a focus on how this may evolve over time, especially as colleges continue to evolve.

The Mississauga Academy of Medicine

Beyond its high quality undergraduate programs and innovative Professional Masters programs, UTM has recently forged a pivotal medical program. The Mississauga Academy of Medicine, launched in August 2011 through a partnership with the University of Toronto's Faculty of Medicine, UTM, the Credit Valley Hospital and Trillium Health Centre (now Trillium Health Partners), is located at UTM's new Terrence Donnelly Health Sciences Complex and offers state-of-the-art learning spaces and laboratories for its students. In 2011, the Academy opened with 54 first-year students and is expected to reach a projected total enrollment of 216 students by 2015.

"There is a certain amount of credibility that a city gains with a university. With a medical school – that's a whole new facet. It helps grow Mississauga up. The spin offs that come from a medical school are tremendous."

**- Carlo Fidani,
Chair, Orlando
Corporation**

The Mississauga Academy of Medicine addresses a pressing need for more physicians, including more family doctors, in the Region of Peel. The Academy hopes to attract future physicians to open their practices in the community once they have completed their schooling and training, thereby increasing access to primary care and specialists for Mississauga residents. Through medical training at Trillium Health Partners, which has highly-specialized regional programs³² among other services, the expectation is that medical students will gain exposure to health issues that affect residents in Mississauga and the Region of Peel.

³¹ The College-University Consortium Council (CUCC). (2008) *College-University Partnership Successes*. See http://www.ontransfer.ca/www/files_docs/content/pdf/en/oncat_research_reports/oncat_research_reports_2.pdf

³² Regional specializations include Advanced Cardiac Surgery, Geriatric Mental Health Services, Hepato-Pancreato-Biliary Services, Neurosurgery, Palliative Care, Primary Percutaneous Coronary Intervention, Sexual Assault and Domestic Violence, Specialized Geriatric Services, Stroke, and Vascular Services. See: <http://www.trilliumhealthcentre.org/about/index.php>

A number of stakeholders interviewed for this study stressed the importance of the Mississauga Academy of Medicine to Mississauga and the Region of Peel. This is not only seen to bring greater educational options to students in the western GTA pursuing careers in medicine, but also as an opportunity to advance key medical research and promote unique partnerships with the life sciences industry around Mississauga. Some of their comments are summarized on the following page:

“We are already seeing the Academy change the healthcare system in the region. The merger of these two hospitals was in part driven by the possibility of educational opportunities. The potential for collaboration with the large number of health practitioners working together, to tackle problems that organizations can’t by putting on an academic hat and applying cutting edge research... this means that regional care will become a quality center of excellence to optimize healthcare delivery across Canada.”

- **Dr. Pamela Coates, Director, Mississauga Academy of Medicine**

“The value of a medical school is significant in the community. UTM worked very closely with the hospitals to develop an academic mandate and a path forward. It helped the institutions to accommodate high quality teaching. The medical school changes the role of the university in the community – people are choosing to train at UTM because it is a community setting with more varied cases.”

- **Anonymous, Industry Partner**

“I would love to see our research have closer contact with the Mississauga hospitals. There are a number of opportunities. We could create a cancer centre at UTM with direct links to Mississauga hospitals to develop local infrastructure for cutting edge cancer care.”

- **Professor Patrick Gunning, Department of Chemical & Physical Sciences, UTM**

Given UTM’s research advancements in the life sciences and its well established partnerships with the pharmaceutical and other industries, the Mississauga Academy of Medicine presents significant opportunity to expand important collaboration and further push the boundaries of quality healthcare and life sciences discovery.

The School of Continuing Studies

Recent research points convincingly to the importance of lifelong learning opportunities for a community. Given increasing competition in the labour market, professionals seek to improve or refresh their training to maintain a flexible and relevant skill set. Meanwhile, newcomers to Canada frequently depend on continuing education to support their integration and employability in their new cities.

“The business environment is ever changing. Continuing education programs are extremely important to professionals who constantly need to upgrade and keep their skills current.”

- **Sheldon Leiba,
President & CEO,
Mississauga Board of Trade**

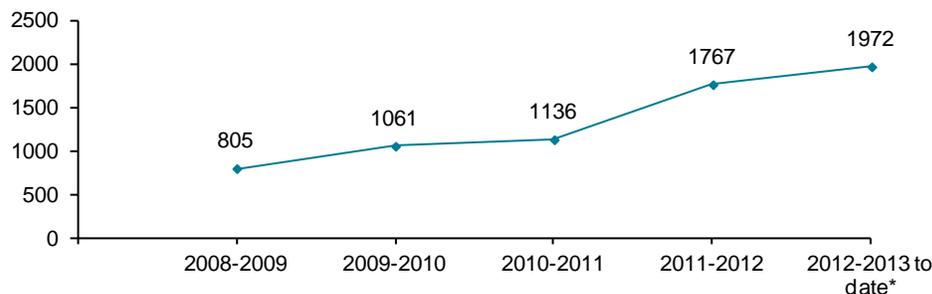
Any form of lifelong learning has been shown to produce significant positive returns for men and women in terms of both earnings and the Cambridge Social Interaction and Stratification scale (CAMSIS), which assesses social class or status. In fact, some research indicates that the effects of certain types of

lifelong learning result in a 20% increase in hourly earnings for both men and women 10 years after gaining a lifelong learning qualification.³³ Access to lifelong learning has therefore been linked to increased wealth for individual families.

Likewise, these learning opportunities are viewed as increasingly critical for newcomers. Studies have shown that Canada’s more recent immigrants are likely to take longer to close the earnings gap with native Canadians, compared to earlier generations. This has occurred even as the proportion of very recent immigrants with a bachelor’s degree or higher grew from 13.9% in 1981 to 42.2% in 2006. This negative trend is attributed to a number of factors, including language skills, a mismatch between newcomers’ skills and the labour market’s demand, and credential recognition.³⁴

To address the lifelong learning needs of its diverse community, UTM has collaborated with the broader University of Toronto’s School of Continuing Studies (SCS) to provide members of the western GTA and its surrounding regions opportunities for continuous learning, skill renewal, important career training and credential assessment programs. SCS has created innovative new courses and programs in order to enhance its ability to address learner’s needs and aspirations. These include new university graduates, in-career professionals, retirees, international students and new Canadians who typically hold advanced degrees and/or professional qualifications from abroad. A marked increase in SCS enrollment at UTM indicates that programs are addressing community needs.

Figure 14: Enrolment Count at UTM-SCS, 2008-2013



*As of March 5, 2013

Source: University of Toronto School of Continuing Studies

Many SCS courses provide important educational opportunities to newcomers. These programs have proven results. For example, of the 127 participants in the Pathways to Employment in Biotechnology program (described below), more than 50% of participants found employment within 12 months of completing the program and 73% were employed in their own or a related field by the end of July, 2012.

³³ Blanden, Jo; Franz Buscha, Patrick Sturgis, Peter Urwin. (2010) Measuring the Returns to Lifelong Learning. Centre for the Economics of Education, London School of Economics. Located at: <http://cee.lse.ac.uk/ceedps/ceedp110.pdf>

³⁴ Dawn Desjardins and Kristin Cornelson, RBC Economics, December 2011, Immigrant labour market outcomes in Canada: The benefits of addressing wage and employment gaps. Located at: <http://www.rbc.com/economics/market/pdf/immigration.pdf>

Table 17: Example UTM SCS Programs Offered for Immigrants and New Canadians

Program	Description
Academic English and Culture Education (ACE) program	ACE @ UTM is specifically designed by the SCS English Language Program for non-native speakers of English who have met the U of T academic admission requirements but require additional language enhancement as a condition of admission. The program launched in Summer 2011 with 55 registrants. In Summer 2012, it grew to 162 part-time and 12 full-time registrants
Pathways to Employment in Biotechnology (PEB)	This was a bridging program developed by the University of Toronto School of Continuing Studies, in partnership with UTM, AstraZeneca Canada, and the Government of Ontario to create a specific program for Internationally Educated Life Science Professionals. It ran from 2009-2012 and prepared internationally educated professionals to work in Canada at levels commensurate with their education and experience
Certificate in Life Science Enterprise (LSE)	This program evolved out of the PEB program and is delivered exclusively at UTM. It is fully funded by tuition fees and designed to attract all professionals who seek employment in the Life Science sector, particularly immigrant professionals and new Canadian university graduates. Bursary funding from the Ontario Government has been secured for the immigrant professionals, covering the approximately \$2,000 per person for tuition and books. Revisions to curriculum are market-driven. Three courses were designed to appeal to this wider pool of potential students: <ul style="list-style-type: none"> • Employment in Life Sciences, featuring job search and industry guests for networking. • Good Manufacturing Practice and Good Laboratory Practice • Effective Communication and Negotiation

To further promote the applicability of lifelong learning courses to labour market demand, the School of Continuing Studies at UTM also works with organizations in the community. This includes active membership in the Mississauga Board of Trade, joint activities with the Research, Innovation and Commercialization (RIC) Centre, the City of Mississauga and the City of Brampton, as well as community organizations like ACCES Employment, the Peel Newcomers Association, the Peel office of the Toronto Region Immigrant Employment Council (TRIEC) and Skills for Change.

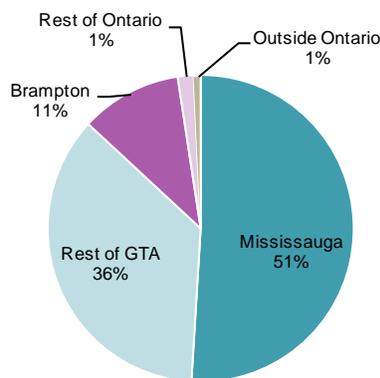
The School of Continuing Studies also offers financial incentives to promote lifelong learning in the community, including:

- **Incentives to U of T Graduates**
 - **All new U of T graduates** are provided a **\$600 credit**, available for 18 months after convocation, applicable towards any course offered by U of T School of Continuing Studies.
 - **Currently registered U of T degree students or post-doctoral fellows** qualify for a discount of 25% on all English Language Program part-time courses.
- **Comparative Education Services (CES)**
CES provides assessments of academic qualifications earned outside of Canada for the purpose of immigration, employment and professional certification. Individuals who obtain a CES assessment qualify for a **one-time \$200 (CAD) discount** towards any on-line or classroom course offered by SCS.

- Canadian Workplace Culture and Communication (CWCC) course**
 Designed specifically to meet the needs of internationally educated professionals, this course explores the key aspects of culture and communication in Canada. Upon completion of the CWCC course, SCS students may apply the \$350 tuition fee as a **discount of \$350 on tuition** for any other SCS course.

The majority of lifelong learners enrolled at UTM are from Mississauga, which suggests UTM plays an important role in providing retraining and professional development opportunities for residents of Mississauga and nearby. Given that SCS understands its mandate as assisting lifelong learners to leverage existing experience and education into a successful career, the availability of these courses to the populations of Mississauga and the Region of Peel is viewed as a contribution to improving individuals' income generation and career progression. Stakeholders interviewed asserted that more outreach to the community about the programs and courses offered through the SCS would be beneficial.

Figure 15: Residence of Enrolled UTM SCS Students, 2011/12



Source: University of Toronto School of Continuing Studies

Economic impact of the development of human capital

In order to quantify the impact that UTM has had on increased productivity through the enhancement of human capital, KPMG focused on the salary differentials between university graduates (undergraduate and graduate degrees) and people with no university training.³⁵ The portion of the differential generated by graduate students who undertook undergraduate training outside of UTM has not been taken into account.

Based on a total alumni population of approximately 37,500, it is estimated that, **in 2012, UTM alumni living in the broader GTA had earned an additional \$1 billion** as a result of their undergraduate and graduate training at UTM. This is a reflection of higher wages due to increased productivity of those with university training. An alumnus who may not be earning employment income was not considered in this estimate (see details in Appendix I – Methodological Framework, section II.10).

³⁵ Based on Statistics Canada 2006 Census data employment income groups for Ontario.

5 Conclusion: Key Findings and Messages

With capital assets of approximately \$2 billion, 12,800 students and approximately 800 full-time employees, the University of Toronto Mississauga campus has a significant direct economic impact on Mississauga and its surrounding region. The economic impact of ongoing spending associated with the UTM has created about 2,450 full-time jobs and an estimated \$272.7 million in value-added in Ontario. Of that total, over 1,290 jobs were created in Mississauga and a total of 1,370 jobs in the Region of Peel. In 2011/12, an estimated \$136.1 million and \$138.7 million in value-added accrued in Mississauga and Peel Region, respectively. A summary of economic impacts for 2011/12 is estimated below.

Summary of Quantifiable Impacts	
Jobs created by spending by UTM, students, faculty, and visitors attracted by the university (2012)	2,450 FTEs
Jobs created by capital spending by UTM (average annual impact)	480 FTEs
Total Impact (FTEs)	2,930 FTEs
Added value created by spending by UTM, students, faculty, and visitors attracted by the university (2012)	\$272.7 million
Added value created by capital spending by UTM (average annual impact)	\$44.7 million
Total Annual Impact (\$)	\$317.4 million

However, UTM's impacts exceed its direct quantifiable contributions. UTM also significantly contributes to its local community in the following ways:

- It develops international ties for Mississauga and the Region of Peel through its global student population, research and networks
- It attracts and supports industry and professional families who value world class education and provide a foundation for a long-term thriving economy
- It promotes the strategic directions of the community, namely developing engaged human capital, driving innovation in key sectors, and advancing a knowledge-based economy

The human capital contributions UTM makes to its local community are significant. In 2012, UTM alumni in Mississauga, the Region of Peel, and the broader GTA earned nearly \$1 billion of additional income as reflected by average higher wages of those with university training.

Additional Human Capital Impacts	
Estimated additional income earned by UTM alumni living in the broader GTA due to their university training at UTM (2012)	\$996.3 million

Throughout this report, a number of opportunities for improvement were cited based on stakeholder feedback. These are relevant particularly as UTM continues to grow and contribute to Mississauga, the Region of Peel and western GTA communities. Many of these opportunities align with UTM's Boundless Campaign and, with additional funding, have the potential to be addressed in the near future. These opportunities include:

- Further raise UTM's profile, especially at the national and global level, including greater emphasis on research
- Increase collaboration with industry to develop a wider variety of academic programs and curricula to address labour market needs
- Promote greater community outreach about access and availability of UTM's facilities and infrastructure, as well as the programs and courses offered through the SCS
- Develop an engineering program and additional finance programs beyond accounting to align with the region's labour needs
- Enhance students' learning and professional development through more internships and experiential learning placement opportunities tailored to the region's priority economic areas and/or community organizations that are resource strapped
- Encourage more academic partnerships between UTM and Sheridan College

Overall, UTM is deeply integrated into the social, economic, cultural and community fabric of Mississauga, the Region of Peel and the western GTA. It makes important contributions to enhancing quality of life and the economic potential of its community. In the coming decades, the university promises to further advance the educational and R&D infrastructure in to optimize local partnerships and assets, foster increased ingenuity, and realize a thriving, globally renowned city and region.

Appendix I – Methodological Framework

II.1 Scope of Economic Impact Assessment

The estimated economic impact of UTM is composed of the employment and value-added impacts that are generated in the Mississauga, Peel Region, Ontario and Canadian economies as a result of expenditures related to the University. Economic impacts include those generated by UTM itself, by the first round of Canadian suppliers to UTM, the indirect suppliers (i.e., the suppliers to the direct suppliers and suppliers to them, etc.) and the induced impacts that result from salaries and wages linked to UTM.

II.2 Economic Impacts

Economic impacts are characterized by the employment and value-added accruing as a consequence of the activities related to UTM. Employment impacts are measured in jobs, while value-added is measured in dollars.

Employment impacts are expressed in terms of full-time equivalent (FTE) positions. The FTE approach converts the combination of full and part-time jobs in each industry, and of permanent and temporary employment, and reflects the total in the equivalent of full-time jobs.

Value-added measures economic value created through the production of goods and services. Value-added impacts are composed of the following categories:

- labour income, which includes salaries and wages, plus workers' benefits (supplementary labour income), calculated before taxes.
- business income, which includes net before-tax income of unincorporated business, plus corporate business income before deductions for depreciation, interest, and corporate income tax.
- government income, which consists of net indirect taxes, as well as revenues from goods and services purchased from the government. Indirect taxes include taxes such as sales taxes and property taxes, but exclude personal income taxes and corporate income taxes, which are included in the above categories.

Direct, Indirect, and Induced Impacts

Both categories of economic impact are further categorized as direct and indirect, or induced. Direct impacts are those generated by UTM. The direct impacts of an organization's activities can be directly observed through an analysis of its employee base and associated payroll, of the indirect taxes that it pays, and of the organization's value-add (the difference between the value of sales and purchased inputs).

Indirect impacts are those generated by suppliers to UTM and suppliers to those suppliers. For example, suppliers to the University, in turn, purchase commodities from other (indirect) suppliers. Ultimately, expenditures made to purchase any good or service can be traced backward through an economy until they result in income to labour, income to business or government, or in the import of a good or service from another jurisdiction.

Economic impacts can also be defined to include induced impacts. Induced impacts are those impacts associated with a re-spending of direct and indirect labour income generated (e.g. impacts associated with the goods and services purchased by UTM employees and Canadian-based suppliers' employees using their wages and salaries earned). Induced impacts capture the economic impacts of increasing household income, which leads to spending by those households that receive the income. This spending in turn becomes the income of other firms and households, and the flow-on effect on economic activity continues around this circular flow.

In the results presented in this report, we estimate direct impacts (the wages and salaries paid, any taxes paid by UTM and depreciation), indirect impacts (the wages and salaries paid, the business income earned, and the taxes paid by suppliers to the UTM), and induced impacts (impact of the spending of salaries and wages earned by UTM employees and employees of suppliers).

For example, the direct employment impact includes UTM employees and the indirect employment impact includes the workers employed by UTM suppliers. Similarly, direct labour income accrues to the employees of UTM, while indirect labour income accrues to the Ontario employees of the suppliers.

II.3 Input / Output Models

To appropriately estimate direct, indirect and induced supplier impacts, economic analysts typically use an input/output model. An input/output model converts expenditures on goods and services into estimates of impact (employment and value-added) throughout the economy. The Statistics Canada model allows impacts resulting from a set of expenditures to be identified for each province individually.

An input/output model divides the economy into a matrix of industries and commodities. Relationships within the model map the production of commodities onto industries, and they identify the primary or intermediate commodities that are used in the production of each final commodity used by consumers or sold as an export. The model can then aggregate all of the employment and value-added impacts generated in the supply chain as commodities are produced. These results can be reported by industry sector. Input/output models also consider the role of imports, which tie the supply chain to the global economy.

In Canada, the most authoritative and comprehensive input-output model is the Interprovincial Input-Output Model maintained by Statistics Canada, and this is the model that has been used by KPMG for this analysis. The input/output model used in this analysis is the most recent version produced by Statistics Canada and is representative of the 2008 Canadian economy. The Statistics Canada Input-Output Model is independent of KPMG and UTM and is recognized by many as the benchmark by which economic modeling is undertaken in Canada.

The core principle of economic impact analysis is that each sector (and each firm within the sector) produces a sufficient output both to satisfy the final demand for its outputs (i.e., goods and services purchased by end-users) and to satisfy the intermediate demands of all other sectors in the economy that use its outputs as factors of production (i.e., as inputs).

Analyzing only the direct and indirect impacts from an input/output model may underestimate the economic impacts as the induced household spend activity is absent. Including induced impacts ensures that the economic activity created through the expenditures of salaries and wages is included. Therefore, including both pieces of analysis gives a range for the potential economic impact.

II.4 Application of Input-Output Model for this Study

Our analysis utilized the 2008 Input-Output Model to measure the impact of UTM on the Ontario and Canadian economies. The process for running the 2008 Input-Output Model is as follows:

- Define the expenditure data. The expenditure data to be analyzed includes all expenditures that occur as a result of the operations of UTM, including payroll and benefits information, as well as operating and capital expenditures on goods and services within Canada. More detailed information on the expenditure items is outlined in Section II.5 below.
- Define the jurisdictional level at which to disaggregate the expenditure data. Input expenditure data was all assumed to be spent in Ontario. Economic Impacts of those expenditures are reported at a provincial and national level, based on how goods and services flow between provinces.
- Define the level of commodity disaggregation. The analysis uses expenditure data to be disaggregated to what Stats Can defines as the “W” (“worksheet”) level where over 700 commodity items are defined.
- Collect the data in accordance with these definitions.
- Submit these data as inputs to Stats Can.
- Receive outputs from the Stats Can run of its Input-Output Model and interpret results.

In addition, Statistics Canada provides Input-Output Model multiplier tables. Multipliers define the economic impacts per \$1 of exogenous industry output shock. When detailed expenditure data is not available (i.e. at a commodity level), these multipliers allow analysis and estimation of employment and GDP impacts using expenditure data at a more aggregated level.

With respect to the study of UTM, we have analyzed the economic impacts that accrue in Canada. For clarity, we have excluded all impacts that accrue outside of the country.

II.5 Expenditure Data Inputs

We organized UTM related expenditure data into four categories based on the type of expenditures:

- Annual operating expenditures that are a direct result of the operations of UTM, including recurring minor capital expenditures
- Major capital expenditures due to the construction of new buildings and major reconstruction/renewal of existing facilities
- Living expenses paid by students who have originated from a location beyond commuting distance of UTM
- Expenditures by non-local visitors to UTM

A summary of total expenditures used as input data for the analysis is shown in Table 18 table below:

Table 18: Input Data (\$'000s)

	Annual Operating Expenditures		Major Capital Expenditures	Non-local Student Spending	Non-local Visitor Spending
	Direct by UTM	Central Services			
Salaries and Benefits	103,493	9,566			
Commodities	40,665	12,946	45,000	45,095	3,754
Depreciation	7,991				
Indirect Taxes & Grant in Lieu of Taxes	807				
Other		6,186			
Total Input Expenditures	152,956	28,698	45,000	45,095	3,754

Source: University of Toronto Mississauga, KPMG Analysis

Detailed expenditures at a worksheet level were available for Annual Operating Expenditures and Major Capital Expenditures. Consequently, the impacts of these expenditures were analyzed using the Input-Output Model by Statistics Canada. Spending by Non-local Students and Visitors was derived at a higher level of aggregation. Consequently, Input-Output Model multipliers were used to assess the impacts of these expenditures.

II.6 Annual Direct Operating Expenditures

Annual Direct Operating Expenditures are defined as expenditures integral to day-to-day operations of UTM. These are annual expenditures that are expected to continue on an ongoing basis. Annual Direct Operating Expenditures include:

Table 19: Description of Annual Direct Operating Expenditures

Item	Description
Direct university spending in Mississauga	Salaries, benefits, and purchases of goods and services, based on 2011/12 financial statement expenses, excluding interest and depreciation.
Partner organizations operating on campus	Purchases of goods and services from related organizations operating on campus including food services provided on campus. For example, food services delivered by a commercial provider.
Recurring minor capital expenditures	Capital spending on small laboratory equipment, IT, facilities maintenance, etc. that occur on an annual basis. The level of these expenditures does not vary significantly from year to year. Individual purchases fall below \$2M.
Central Services	Salaries, benefits, and purchases of goods and services, based on 2011/12 financial statement expenses that are provided on the St. George campus on behalf of UTM.

Table 20 summarizes the estimated impact on employment in Canada associated with the Annual Direct Operating Expenditures of UTM. The table indicates the direct, indirect and induced impacts of UTM across Canada. Note that the data is presented in terms of full-time equivalent (FTE) positions, adjusting for part-time or temporary employment.

Table 20: Employment Impact in Ontario of Annual Direct Operating Expenditures (FTEs)

Employment Impact by Province			
Full Time Equivalents (FTEs)	Direct by UTM	Central Services	Total
Direct Employment	799	106	905
Indirect Employment	330	105	434
Induced Employment	477	44	521
Total	1,605	255	1,860

Source: Developed using Statistics Canada Input-Output model

Note: Totals may not add due to rounding.

Table 21 summarizes the estimated value-added impacts of the total Annual Direct Operating Expenditures of UTM on the Canadian economy. These impacts are measured through labour income, business income and government income.

Table 21: Value-added Impact of Annual Direct Operating Expenditures of UTM in Ontario (\$'000s)

2011/12	Annual Operating Expenditures		
	Direct by UTM	Central Services	Total
Labour Income			
Direct	103,493	9,566	113,059
Indirect	14,207	4,523	18,730
Induced	21,978	2,736	24,713
Sub-total Labour Income	139,678	16,824	156,502
Business Income			
Direct	7,991	6,186	14,177
Indirect	7,196	2,291	9,487
Induced	20,527	2,552	23,079
Sub-total Business Income	35,714	11,029	46,743
Government Taxes			
Direct	807	-	807
Indirect	3,121	993	4,114
Induced	10,791	1,335	12,126
Sub-total Government Income	14,719	2,328	17,047
Total Impact on GDP	190,110	30,182	220,292

Source: Developed using StatsCan Input-Output model

The following summarizes the estimated impacts on the Ontario economy from the Annual Direct Operating Expenditures of UTM as developed in accordance with the methodology and limitations described in Sections II.1 and II.2 (with results presented in 2012 dollars):

- The estimated Annual Direct Operating Expenditures of UTM support 1,860 FTE positions in the Ontario economy annually.
- The estimated labour income created by the Annual Direct Operating Expenditures is \$156.5 million annually.
- The estimated business income created by the Annual Direct Operating Expenditures is \$46.7 million.
- The estimated total government income created by the Annual Direct Operating Expenditures is \$17.0 million from provincial, federal, property and indirect taxes (this does not include personal or corporate income taxes).
- The estimated value-added created through the Annual Direct Operating Expenditures in Ontario is \$220.3 million.

II.7 Major Capital Expenditures

UTM has undertaken \$276.1 million worth of major capital projects over the last eight years (2004/05 to 2011/12), and plans to undertake approximately \$218.3 million more over the next five years (2012/13 to 2016/17). Planned major capital projects from 2012/13 to 2016/17 include the following:

Planned Major Capital Projects
<ul style="list-style-type: none"> • UTM Innovation Complex • Major Renovation - Davis Research Labs • Building Reconstruction - North Phase 2 • Major Renovation - Davis Meeting Place • Research Greenhouse • Building Expansion - Library • Colman Commons Expansion • Building Expansion - Student Centre • Various Other Infrastructure Projects

Major capital costs include: general contract, construction contingency, consultant costs, furniture and equipment, taxes, capitalized interest, other contingencies, and other related costs.

To estimate the annual impact of major capital expenditures on the economy, the average annual expenditures were calculated based on the total forecast amount over the next five years. Capital expenditures are forecast to be on average \$45 million each year over the next five years.

Table 22 summarizes the estimated impact on employment in Canada from the Major Capital Expenditures. The table indicates direct, indirect and induced impacts across Canada. Since major capital projects are contracted out to firms specializing in that area, there is no direct employment or labour income to UTM staff related to these projects. Note that the data is presented in terms of full-time equivalent (FTE) positions, adjusting for part-time or temporary employment.

Table 22: Annual Employment Impact of Major Capital Expenditures by Province (FTEs)

Employment Impact by Province									
Full Time Equivalents (FTEs)	Atlantic Canada	QC	ON	MB	SK	AB	BC	Northern Territories	Total
Direct	0	1	274	0	0	0	0	0	275
Indirect	2	11	112	1	1	3	3	0	133
Induced Employment	2	10	98	2	1	3	4	0	119
Total	3	22	484	3	2	7	7	0	527

Source: Developed using Statistics Canada Input-Output model

Table 23 summarizes the estimated value-added impacts of the Major Capital Expenditures. These impacts are measured through labour income, business income and government income.

Table 23: GDP Impact of Major Capital Expenditures (\$'000s)

GDP Impact by Province									
\$'000s	Atlantic Canada	QC	ON	MB	SK	AB	BC	Northern Territories	Total
Labour Income									
Direct and Indirect	76	618	21,970	67	46	264	196	4	23,240
Induced	67	442	4,778	65	35	215	172	4	5,777
Sub-total Labour Income	142	1,060	26,747	132	81	479	368	8	29,017
Business Income									
Direct and Indirect Suppliers	81	358	7,844	50	99	299	114	13	8,858
Induced	78	337	4,458	65	96	330	153	13	5,530
Sub-total Business Income	159	695	12,303	115	195	629	267	25	14,388
Government Taxes									
Direct and Indirect	4	35	3,372	6	6	13	14	0	3,449
Induced	16	102	2,308	15	11	34	37	1	2,525
Sub-total Government Income	20	137	5,680	21	17	47	51	1	5,974
Total Impact on GDP	321	1,892	44,731	268	293	1,155	686	35	49,379

Source: KPMG analysis based on Statistics Canada Input-Output model results

The following summarizes the estimated impacts on the Canadian economy from Major Capital Expenditures by UTM, developed utilizing the methodology described in Sections II.4 and II.6. Results are presented in 2012 dollars.

- The estimated annual Major Capital Expenditures support 527 FTE positions in the Canadian economy. The majority of the FTEs are realized in Ontario, representing 92% of the total.
- The estimated labour income created by the Major Capital Expenditures is \$29.0 million. The majority of the labour income is realized in Ontario, representing 92% of the total.
- The estimated business income created by the Major Capital Expenditures is \$14.4 million. The majority of the business income is realized in Ontario, representing 86% of the total.

On an annual basis, the Major Capital Expenditures are estimated to impact the **Ontario** economy in the following way:

- 484 FTEs yielding \$26.7 million in labour income
- \$12.3 million business income
- \$5.7 million government income
- \$44.7 million total value-added

Values are in nominal dollars.

- The estimated total government income created by the Major Capital Expenditures is \$6.0 million from provincial, federal, property and indirect taxes (as described previously this does not include personal or corporate income taxes).
- The estimated value-added created through the Major Capital Expenditures in Canada is \$49.4 million per year over the next five years. The majority of the value-added impact is realized in Ontario, representing 91% of the total.

II.8 Student Living Expenditures – Non-Local Students

Student Living Expenditures are defined as expenditures made by students attending UTM who originate from outside commuting distance of the University.

Of the 12,288 students registered at UTM as of September 2012, KPMG estimated 63.1% were within commuting distance based on UTM's top feeder cities for new intakes (see Table 24 below). Thus, the remaining 36.9% of students were assumed to be outside of commuting distance with 16% estimated to be international students and the remaining 20.9% estimated to be from the rest of Ontario and Canada. The percentage of international students was calculated based on an average of the number of new international students from 2008/09 to 2011/12. We subtracted the expenditures of students living in residence because their expenditures on accommodation and food have been accounted for through UTM's operating expenditures.

Table 24: Top Feeder Municipalities and Sub-Municipalities, 2012

City	Count	%
Mississauga	908	28.2%
Toronto	280	8.7%
Brampton	272	8.4%
Oakville	174	5.4%
Hamilton	129	4.0%
Not Reported	90	2.8%
Etobicoke	70	2.2%
North York	48	1.5%
Markham	31	1.0%
Scarborough	30	0.9%
Total	2032	63.1%

Living expenses in Mississauga were estimated based on information available from UTM, Immigration Peel and Sheridan College for an eight-month school term. Local public transportation costs for students were not included since UTM offers its students a U-Pass paid for through student fees that provide unlimited fare-free rides on Mississauga Transit's bus system.

Student Living Expenditures were calculated as shown in Table 25 below:

Table 25: Living Expenditures of Non-Local Students (2012 dollars)

	Spending Per Person	Rest of Ontario and Canada	International	LESS: Residence Students	TOTAL
Number of Non-Local Students	-	2568	1966	1379	3155
Living Expenses by Non-Local Students					
Accommodation	\$6,000	\$15,409,152	\$11,796,480	(\$8,274,000)	\$18,931,632
Food	\$2,400	\$6,163,661	\$4,718,592	(\$3,309,600)	\$7,572,653
Books and supplies	\$900	\$2,311,373	\$1,769,472	-	\$4,080,845
Local transportation (student fares)	Free	-	-	-	\$0
Telecommunications (telephone; Internet)	\$1,200	\$3,081,830	\$2,359,296	-	\$5,441,126
Leisure	\$2,000	\$5,136,384	\$3,932,160	-	\$9,068,544
TOTAL (\$)		\$32,102,400	\$24,576,000	(\$11,583,600)	\$45,094,800

Source: University of Toronto Mississauga, Immigration Peel, Sheridan College, KPMG Analysis

Table 26 summarizes the estimated impact on employment in Canada associated with the Student Living Expenditures. The table indicates the direct, indirect and induced impacts of UTM across Canada. Note that the data is presented in terms of full-time equivalent (FTE) positions, adjusting for part-time or temporary employment.

Table 26: Employment Impact of Student Living Expenditures (FTEs)

Employment Impact	
Full Time Equivalents (FTEs)	Ontario
Direct Employment	0
Employment by Direct Suppliers	289
Employment by Indirect Suppliers	134
Induced Employment	104
Total	527

Source: KPMG analysis using Statistics Canada Input-Output Model multiplier tables

Table 27 summarizes the estimated value-added impacts of the total Student Living Expenditures on the Ontario economy. These impacts are measured through labour income, business income and government income.

Table 27: Value-added Impact of Student Living Expenditures in Ontario (\$'000s)

GDP Impact	
\$'000s	Ontario
Labour Income	
Direct	10,478
Indirect	6,984
Induced	4,937
Sub-total Labour Income	22,339
Business Income	
Direct	10,242
Indirect	4,377
Induced	4,809
Sub-total Business Income	19,429
Government Taxes	
Direct	5,077
Indirect	725
Induced	761
Sub-total Government Income	6,564
Total Impact on GDP	48,392

Source: KPMG analysis using Statistics Canada Input-Output Model multiplier tables

The estimated impacts on the Ontario economy from Student Living Expenditures include:

- The estimated Student Living Expenditures support 527 FTE positions in the Ontario economy annually.
- The estimated labour income created by the Student Living Expenditures is \$22.4 million annually.
- The estimated business income created by the Student Living Expenditures is \$19.4 million.
- The estimated total government income created by the Student Living Expenditures is \$6.6 million from provincial, federal, property and indirect taxes (as described previously this does not include personal or corporate income taxes).

- The estimated value-added created through the Student Living Expenditures in Ontario is \$48.4 million.

II.8 Visitor Expenditures

Visitor Expenditures are defined as expenditures made by family and friends of students attending UTM who originate from outside commuting distance of the University.

Of the 12,288 students registered at UTM as of September 2012, KPMG estimated 63.1% were within commuting distance based on UTM's top feeder cities. Thus, the remaining 36.9% of students were assumed to be outside of commuting distance with 16% estimated to be international students and 20.9% estimated to be from the rest of Ontario and Canada. The percentage of international students was calculated based on an average of the number of new international students from 2008/09 to 2011/12. KPMG conservatively assumed that students attending UTM from the rest of Ontario and Canada typically had 2 visitors on average and international students had 1 visitor on average each year. We used this to calculate the total number of friends and family visitors for UTM.

Tourist spending by friends and family visitors was estimated based on the Ontario Ministry of Tourism, Sport and Culture – Region 5 (GTA) visitor spending and visits data (2010), which is based on Statistics Canada microdata. The visitor spending is presented in 2012 dollars.

Visitor Expenditures were calculated as shown in Table 28 below:

Table 28: Visitor Expenditures (2012 dollars)

	Spending/Person	Rest of Ontario and Canada	International	TOTAL
Number of Non-Local Students	-	2568	1966	4534
Number of Visitors per Student	-	2	1	-
Total Number of Friends and Family Visitors	-	5136	1966	7102
Tourist Spending by Friends and Family Visitors				
Accommodation	\$133	\$681,009	\$260,673	\$941,682
Public & Local Transportation	\$146	\$752,393	\$287,997	\$1,040,390
Vehicle Rental & Operations	\$33	\$168,224	\$64,392	\$232,616
Food and beverage at stores	\$18	\$90,103	\$34,489	\$124,592
Food and beverage at restaurants/bars	\$94	\$483,590	\$185,106	\$668,696
Recreation/entertainment	\$37	\$192,567	\$73,710	\$266,277
Retail/other	\$68	\$346,873	\$132,774	\$479,647
Total		\$2,714,758	\$1,039,142	\$3,753,900

Source: University of Toronto Mississauga, Ontario Ministry of Tourism, Sport and Culture, KPMG analysis

Table 29 summarizes the estimated impact on employment in Canada associated with the Student Living Expenditures. The table indicates the direct, indirect and induced impacts of UTM across Canada. Note

that the data is presented in terms of full-time equivalent (FTE) positions, adjusting for part-time or temporary employment.

Table 29: Employment Impact of Visitor Expenditures (FTEs)

Employment Impact	
Full Time Equivalents (FTEs)	Ontario
Direct Employment	-
Employment by Direct Suppliers	46
Employment by Indirect Suppliers	11
Induced Employment	10
Total	67

Source: KPMG analysis using Statistics Canada Input-Output Model multiplier tables

Table 30 summarizes the estimated value-added impacts of the total Visitor Expenditures on the Ontario economy. These impacts are measured through labour income, business income and government income.

Table 30: Value-added Impact of Visitor Expenditures (\$'000s)

Employment Impact	
2011/12 (\$'000s)	Ontario
Labour Income	
Direct	1,175
Indirect	537
Induced	486
Sub-total Labour Income	2,199
Business Income	
Direct	733
Indirect	352
Induced	474
Sub-total Business Income	1,558
Government Taxes	
Direct	161
Indirect	64
Induced	75
Sub-total Government Income	301
Total Value-added	4,058

Source: KPMG analysis using Statistics Canada Input-Output Model multiplier tables

The estimated impacts on the Ontario economy from Visitor Expenditures include:

- The estimated Visitor Expenditures support 67 FTE positions in the Ontario economy annually.
- The estimated labour income created by the Visitor Expenditures is \$2.2 million annually.
- The estimated business income created by the Visitor Expenditures is \$1.6 million.
- The estimated total government income created by the Visitor Expenditures is \$0.3 million from provincial, federal, property and indirect taxes.

The estimated value-added created through the Visitor Expenditures in Ontario is \$4.1 million.

II.9 Assessment of Expenditure Impacts on Mississauga and Peel Region

The University of Toronto Mississauga has local and regional economic impacts as a result of jobs created in Mississauga and expenditures made on local/regional suppliers of goods and services. Similarly, the vast majority of the first round economic impacts of student living and visitor expenditures will accrue to Mississauga and the Region of Peel due to the very nature and location of those expenditures. Firstly, students and visitors are likely purchasing most goods and services from direct suppliers in Mississauga.

Methodology

The Statistics Canada Input-Output model is designed to estimate the economic impacts of expenditures at a national and provincial territorial level. However, it cannot disaggregate impacts at a local and regional level. As a result, KPMG developed an approach to estimate the share of economic impacts accruing to Mississauga and the Regions of Peel.

The steps to estimate the local and regional impacts involved:

Annual Direct Operating Expenditures:

- Transaction-level expenditure data on goods and services purchased by UTM were aggregated by vendor
- Each vendor was mapped to a location within Mississauga, the rest of the Region of Peel or outside the region through postal code information provided.
- The total amount of expenditures made to vendors within Mississauga and the Region of Peel was calculated as a share of total expenditures to vendors to estimate the share of total economic impacts that accrued to both.
 - Approximately 41% and 48% of UTM's operating expenditures are made to businesses located in Mississauga and the Region of Peel, respectively. These rates were used to estimate the share of direct supplier impacts that accrue to Mississauga and the Region of Peel.

- Using non-identifying data on city of residence for all faculty and staff, the share of total salaries paid to faculty and staff living in Mississauga and the Region of Peel was calculated to estimate the share of induced impacts that accrue to Mississauga and the Region of Peel.
 - Approximately 34% of UTM faculty and staff live in Mississauga, while 38% live in the Region of Peel. If UTM employees living in Mississauga and the Region of Peel make 70% of their purchases at businesses^{36, 37} near their homes, then the impacts are as shown in Tables 29 and 30.

Non-Local Student Living Expenses:

- It is assumed that UTM students neither living on campus nor at home, all live in Mississauga (and consequently Peel Region).
- It is assumed that all expenditures on accommodation, food, books& supplies, and half on leisure are incurred in Mississauga. These expenditures represent 80% of the total. The remaining expenditures are assumed to be made outside Mississauga/Peel Region. This rate was used to estimate the share of direct supplier impacts that accrue to Mississauga and the Region of Peel.

Family and Friends Visitors:

- By definition, visitor expenditures have been identified to include only those incurred locally within Mississauga (and consequently Peel Region). Therefore, all direct supplier impacts will accrue to Mississauga and the Region of Peel.

Results

Table 31 summarizes the estimated impact on employment in Mississauga and Region of Peel as a result of Total Ongoing Expenditures related to UTM.

Table 31: Employment Impact of Total Ongoing Expenditures on Mississauga and Region of Peel (FTEs)

(FTEs)	Annual Direct Operating Expenditures		Non-Local Student Living Expenses	Family and Friends Visitors	Total	
	Mississauga	Peel Region	Mississauga/Peel Region	Mississauga/Peel Region	Mississauga	Peel Region
Total Direct Employment	799	799	231	46	1,030	1,076
Indirect Employment	135	158	n/a	n/a	135	158
Induced Employment	119	134	n/a	n/a	119	134
Total Impact	1,053	1,091	231	46	1,285	1,368

³⁶ Cowell, Deborah; Greene, Gary. (1994) Community Attachment and Spending Location: The Importance of Place in Household Consumption, Social Science Quarterly (University of Texas Press); Sep94, Vol. 75 Issue 3, p637-655

³⁷ Statistics Canada, Survey of Household Spending, 2011.

Table 32 summarizes the estimated impact on employment in Mississauga and Region of Peel as a result of Total Ongoing Expenditures related to UTM.

Table 32: Value-added Impact of Total Ongoing Expenditures on Mississauga and Region of Peel (\$'000s)

GDP Impact by Municipality and Region	Annual Direct Operating Expenditures		Non-Local Student Living Expenses	Family and Friends Visitors	Total	
	\$'000s	Mississauga	Peel Region	Mississauga/ Peel Region	Mississauga/ Peel Region	Mississauga
Labour Income						
Direct	103,493	103,493	4,470	430	108,393	108,393
Indirect	5,286	6,188	n/a	n/a	5,286	6,188
Induced	5,514	6,204	n/a	n/a	5,514	6,204
Sub-total Labour Income	114,293	115,885	4,470	430	119,192	120,784
Business Income						
Direct	7,991	7,991	6,555	586	15,132	15,132
Indirect	2,360	2,763	n/a	n/a	2,360	2,763
Induced	4,335	4,877	n/a	n/a	4,335	4,877
Sub-total Business Income	14,686	15,631	6,555	586	21,828	22,773
Total Value- added	128,980	131,516	11,025	1,016	141,020	143,557

II.10 Impact through the Development of Human Capital

To assess UTM's contribution to the development of human capital, KPMG took the average salary differential between people with a bachelor's degree and people without an equivalent level of education in Ontario from the Statistics Canada 2006 Census³⁸ (reported in 2005 dollars) and inflated it to 2012 dollars³⁹. This was multiplied by the number of active UTM alumni with undergraduate degrees living in the broader GTA.⁴⁰ Similarly, KPMG factored in the average salary differential between people with graduate degrees and people with a bachelor's degree in Ontario. This was multiplied by the number of active UTM alumni with graduate degrees (from one of UTM's five professional Masters programs) living in the broader GTA. An alumnus who may not be earning employment income was not considered in this estimate of economic impact of university training.

Table 33: Impact of university training on productivity (in 2012 dollars)

IMPACT OF UNDERGRADUATE TRAINING ON PRODUCTIVITY	
Salary differential between alumni with an undergraduate degree and workers with no university training	\$26,864
Number of UTM alumni with undergraduate degrees living in the broader GTA	36,323
Total differential for UTM alumni with undergraduate degrees	\$975,773,849
IMPACT OF POSTGRADUATE TRAINING ON PRODUCTIVITY	
Salary differential between graduate students and undergraduate students	\$18,255
Number of UTM alumni with graduate degrees living in the broader GTA	1,127
Total differential for UTM Master graduates	\$20,573,356
Total impact of UTM's training on productivity in the broader GTA	\$996,347,205

Source: University of Toronto, University of Toronto Mississauga, Statistics Canada, KPMG analysis

³⁸ Statistics Canada (2006). 2006 Census: Data Products – Topic-based tabulations. Employment income groups (Ontario). Located at: <http://www12.statcan.gc.ca/census-recensement/2006/rt-td/lbr-tra-eng.cfm>

³⁹ Statistics Canada (2013). Consumer Price Index, historical summary (1993 to 2012). Located at: <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ46a-eng.htm>

⁴⁰ Broader GTA includes Mississauga, Brampton, Caledon and the rest of the GTA based on Canada Post's postal codes breakdown

Appendix II – List of Stakeholders Interviewed

University of Toronto Mississauga Stakeholders

- Amy Mullin, Vice-Principal, Academic and Dean
- Ashley Nunes, Undergraduate Biology Student
- Bill McFadden, Director, Hospitality & Retail Operations
- Christine Capewell, Director, Business Services
- Colin McFarlane, Administrative Coordinator, Facilities Management and Planning
- Deep Saini, Vice-President, University of Toronto and Principal, University of Toronto Mississauga
- Diane Crocker, Registrar & Director of Enrolment Management
- Kelly Hannah-Moffatt, Vice-Dean, Undergraduate
- Ken Duncliffe, Director, Physical Education and Athletics
- Lynda Collins, Director, Human Resources
- Pamela Coates, Director, Mississauga Academy of Medicine
- Patrick Gunning, Associate Professor, Department of Chemical and Physical Sciences
- Paull Goldsmith, Director, Facilities Management and Planning
- Rena Kauldhar, Research Analyst
- Tracy Rogers, Director, Forensic Science Program
- Ulrich Krull, Vice-Principal, Special Initiatives

External Stakeholders

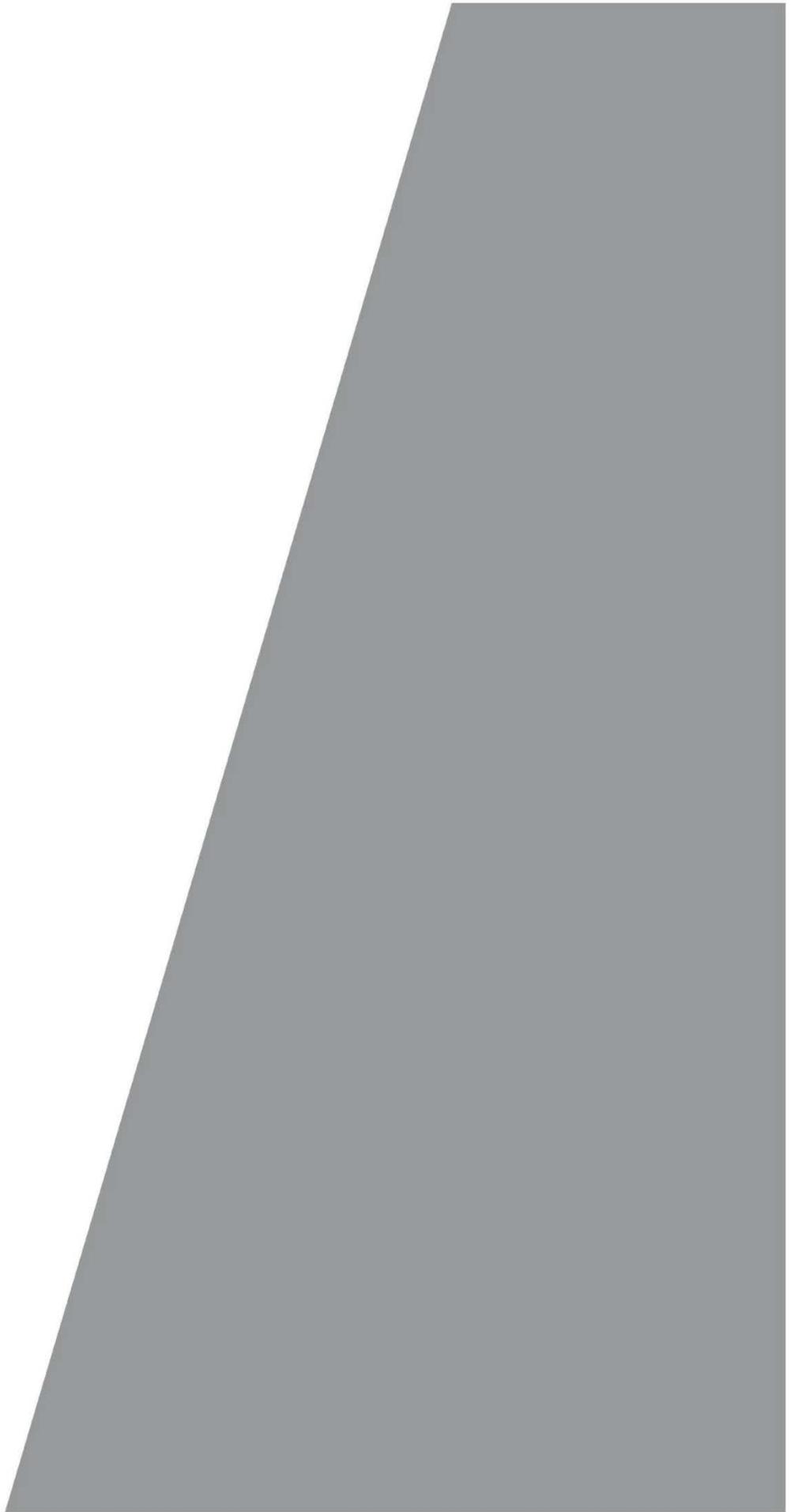
- Bob Dechert, Parliamentary Secretary to the Minister of Foreign Affairs and Member of Parliament for Mississauga-Erindale
- Bonnie Crombie, Councillor Ward 5, City of Mississauga
- Carlo Fidani, Chair, Orlando Corporation
- Eric Zvaniga, Senior Project Manager, Eastern Construction
- John Switzer, Chair, RIC Centre and UTM alumnus
- Jonathan Eckert, Senior Marketing Manager, New Product and Business Development, AstraZeneca Canada and UTM MBiotech alumnus
- Katie Mahoney, Councillor Ward 8, City of Mississauga
- Mike Cloutier, Past President and CEO, Canadian Diabetes Association
- Neil Skelding, President and CEO, RBC Insurance
- Nick Kuryluk, Director, Strategy and Program Management Office, Amgen Canada Inc. and UTM alumnus
- Pam Banks, Executive Director, RIC Centre
- Sheldon Leiba, President and CEO, Mississauga Board of Trade
- Susan Amring, Director, Economic Development, City of Mississauga

Works Cited

- Advantage Mississauga. (2013). *Where talent creates opportunity*. Retrieved March 2013, from <http://advantagemississauga.ca/>
- Association of Universities and Colleges of Canada. (2011). *Enrolment by university*. Retrieved March 2013
- Blanden, J., Buscha, F., Sturgis, P., & Urwin, P. (2010). *Measuring the Returns to Lifelong Learning*. Retrieved from Centre for the Economics of Education, London School of Economics: <http://cee.lse.ac.uk/ceedps/ceedp110.pdf>
- Cornelson, K., & Desjardins, D. (2011, December). *Immigrant labour market outcomes in Canada: The benefits of addressing wage and employment gaps*. Retrieved from RBC Economics: <http://www.rbc.com/economics/market/pdf/immigration.pdf>
- Cowell, D., & Greene, G. (1994). *Community Attachment and Spending Location: The Importance of Place in Household Consumption*. *Social Science Quarterly* (University of Texas Press) Sep94, Vol. 75 Issue 3, p637-655.
- Immigration Peel. (2011). *Cost of Living in Peel*. Retrieved March 2013, from <http://www.immigrationpeel.ca/money/cost.htm>
- Jarvey, P., & Usher, A. (2012). *Measuring Academic Research in Canada: Field-Normalized Academic Rankings 2012*. Higher Education Strategy Associates.
- McCallion, H. (2012). *Mayor's Update*. Retrieved March 2013, from http://www.mississauga.ca/file/COM/2012_mayorsupdate_business.pdf
- Millier Dickinson Blais Inc. (June 2010). *City of Mississauga Economic Development Strategy "Building on Success"*.
- Ontario Ministry of Tourism Sport and Culture. (2010). *Regional Tourism Profiles*. Retrieved March 2012, from <http://www.mtc.gov.on.ca/en/research/rtp/rtp.shtml>
- Oxford Economics. (2013). Retrieved March 2013, from The Economic Costs and Benefits of International Students: https://www.sheffield.ac.uk/polopoly_fs/1.259052!/file/sheffield-international-students-report.pdf
- Region of Peel. (2013). *Peel Data Centre. Ward Profile*. Retrieved March 2013, from <http://www.peelregion.ca/planning/pdc/data/census/wardprofiles/wds-Mississauga.htm>
- Region of Peel. (2012). *Peel Economic Pulse. Economic Performance: Jan - June 2012*. Retrieved March 2013, from Located at: <http://www.peelregion.ca/finance/dashboard-eco/peel-eco-pulse/part3a.htm>
- Science, Technology and Innovation Council. (2008). *State of the Nation 2008 – Canada's Science, Technology and Innovation System*.
- Sheridan College Institute of Technology and Advanced Learning. (n.d.). *Living Expenses*. Retrieved March 2013, from <http://www.sheridancollege.ca/international-centre/prospective-students/living-expenses.aspx>
- Statistics Canada. (2006). *2006 Census: Data Products*. Retrieved March 2013, from <http://www12.statcan.gc.ca/census-recensement/2006/rt-td/lbr-tra-eng.cfm>
- Statistics Canada. (2013). *Consumer Price Index, historical summary (1993 to 2012)*. Retrieved March 2013, from <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/econ46a-eng.htm>
- Statistics Canada. (2011). *Survey of Household Spending*.
- The College-University Consortium Council (CUCC). (2008). *College-University Partnership Successes*. Retrieved March 2013, from http://www.ontransfer.ca/www/files_docs/content/pdf/en/oncat_research_reports/oncat_research_reports_2.pdf
- Trillium Health Partners. (2013). *About Us*. Retrieved March 2013, from <http://www.trilliumhealthcentre.org/about/index.php>
- University of Toronto Mississauga. (2012). *Boundless Innovation: The Campaign for the University of Toronto Mississauga*.

Walshok, M. L. (1997). *Expanding Roles for Research Universities in Regional Economic Development. New Directions for Higher Education*. Retrieved March 2013, from <http://cardi.cornell.edu/cals/devsoc/outreach/cardi/calendar-events/upload/ExpandingRolesForUniv.pdf>

World Health Organization Centre for Health Development. (2002). *WKC Partnership Model: The Mississauga Model*. Retrieved March 2013, from http://whqlibdoc.who.int/wkc/2002/WHO_WKC_Tech.Ser._02.1.pdf



www.kpmg.ca

This report has been prepared by KPMG LLP ("KPMG") for the University of Toronto Mississauga ("Client") pursuant to the terms of our engagement agreement with Client dated February 11, 2013 (the "Engagement Agreement"). KPMG neither warrants nor represents that the information contained in this report is accurate, complete, sufficient or appropriate for use by any person or entity other than Client or for any purpose other than set out in the Engagement Agreement. This report may not be relied upon by any person or entity other than Client, and KPMG hereby expressly disclaims any and all responsibility or liability to any person or entity other than Client in connection with their use of this report.

The KPMG name, logo and "cutting through complexity" are registered trademarks or trademarks of KPMG.

© 2013 KPMG LLP, a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Canada.