



TORONTO REGION RESEARCH ALLIANCE



2008
Annual Toronto Region
Innovation Gauge
Executive Summary

“Research is to see what everybody else has seen, and to think what nobody else has thought.”

- **Albert Szent-Gyorgyi**, Hungarian
Biochemist, 1937 Nobel Prize for Medicine

The Toronto Region has an innovative research base with a highly-educated and growing population that benefits from a diversified manufacturing base and other major advantages compared to its competition – that’s the good news.

However, the Toronto Region faces some significant challenges to meeting its full potential to become one of the top research centres in the world. The obstacles to be overcome include the need for even more post-graduate students, stronger governmental support for research and development, more private sector R&D, and greater focus on knowledge and technology transfer.

That’s the conclusion reached from a review of the Toronto Region’s research and innovation system conducted by the Toronto Region Research Alliance (TRRA).

The second edition of the *Annual Toronto Region Innovation Gauge* analyzes the current strengths and weaknesses of the region relative to other regions with strong research bases. The report compares the Toronto Region’s performance to six regions that have similar attributes to the Toronto Region and are – or have been – successful in innovation: Illinois, Massachusetts, Michigan, Montreal, Research Triangle and Silicon Valley. The comparators were selected based on: population, proximity, industrial make-up, strong manufacturing base, research intensity, and innovation performance.

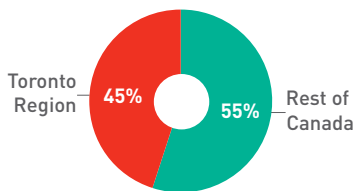
ATRIG indicators fall into three broad categories which paint a picture of the Toronto Region’s innovation performance: who we are – a description of the region’s population and economy; what we offer – factors that facilitate innovation; and how we perform – measures of innovative outputs.

These findings will help key decision makers in government, industry and post-secondary education better understand how the Toronto Region can grow and prosper by focusing attention on building a stronger research base that will benefit us all.

WHO WE ARE

The population of the Toronto Region is growing rapidly, fueled by an influx of skilled, educated immigrants from around the world. **The region's economy benefits from diverse industrial sectors outside its traditional manufacturing base** (including "fast" companies with strong potential for growth), solid employment levels, superior wages and healthy household income.

- > **80,000 +** ↑ average population increase in the region each year
- > **45%** of new immigrants to Canada settle in the Toronto Region



- > Average **14** "fast companies" per year over the last **6** years
- > **11** industrial sectors above the average North American concentration, more than comparator regions

WHAT WE OFFER

The Toronto Region has high levels of post-secondary and post-graduate education in the 25-34 age range, with recent Business, Science and Technology graduates poised to become the next generation of managers and entrepreneurs. This needs to be sustained. The scale of private and public R&D funding in the U.S. far outstrips Canada, although collaborative private/public sector funding for R&D in the Toronto Region universities is increasing. More government R&D investment would strengthen the universities' R&D facilities and human resources, improve graduate training, making the region more attractive to R&D-intensive industries as partners.

- > **65%** of workforce 25-34 years of age has a post-secondary degree or diploma
- > Ahead of only one comparator in the number of engineers graduating with a bachelor's degree
- > **2x** increase in NSERC Collaborative Research & Development project funding ('98-'08), from \$5.1 to \$10.2 million
- > **Lowest** of all regions in government R&D funding per capita

HOW WE ARE PERFORMING

Like the comparators, the Toronto Region is publishing more and increasing its numbers of licenses, inventions and patents. These commercialization and knowledge transfer mechanisms are tangible proof that R&D is being transferred to the marketplace. **The region is not performing as well as many of its comparators in terms of absolute numbers of technology transfers or relative impact** – where it publishes and how much it commercializes.

- > ↑ **29%** in publications, a trend that matches all comparator regions
- > Ahead of just one comparator in average relative impact factors

| Average Relative Citations, 2000-2006 | |
|---------------------------------------|--------------|
| Silicon Valley | 1.846 |
| Massachusetts | 1.841 |
| Research Triangle | 1.603 |
| Illinois | 1.511 |
| Michigan | 1.511 |
| Toronto Region | 1.409 |
| Montreal | 1.296 |

- > Improving on total licenses, patents and invention disclosures ('01-'06); however, the highest performing regions produce **4x** more than the Toronto Region



IN SUMMARY

The Toronto Region has a strong foundation – a large and highly-educated population, diverse industries and high employment rates, for instance – upon which it can build to improve its performance. But to compete successfully to become a truly innovative research base will require significantly more sustained efforts – and a collaborative approach between government, industry and the post-secondary education sector.

TRRA invites you to read the full report at www.trra.ca and welcomes feedback. Please email us at info@trra.ca.

ATRIG ADVISORY COUNCIL

TRRA is grateful for the assistance and guidance provided by the members of our *ATRIG Advisory Council*.

Mr. Michael Benedict

Principal, MCB Strategies Inc.

Mr. Charles Davis

Edward S. Rogers Sr. Research Chair in Media Management and Entrepreneurship

Ryerson University

Dr. Paul Genest

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Mr. John Hoicka

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Colleges Ontario

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TRIEC

Mr. James Milway

Executive Director

Institute for Competitiveness and Prosperity

Martin Prosperity Institute

Ms. Avvey Peters

Executive Director, Communications & Government Relations

Communitech

Mr. Shahrokh Shahabi-Azad

Senior Economist, Innovation and Corporate Policy Branch, Ministry of Research and Innovation

Ms. José Sigouin

Research and Information Analysis

University of Toronto

Ms. Natasha Tang Kai

Senior Advisor, Performance Measurement and Results

Ministry of Research and Innovation

Mr. John Tennant

CEO

Canada's Technology Triangle Inc.

Dr. David Wolfe

Co-Director, Program on Globalization and Regional Innovation Systems

University of Toronto

Primary Author

Dr. Karen Sievwright

Director, Research

TRRA

Research Assistants

Bettina Cheung

Odila Duru

Alex Hunt

Richard Liang

Michael Wolfe

Andrew Wong



TORONTO REGION RESEARCH ALLIANCE

MaRS Centre, Heritage Building, 101 College Street, Suite HL30, Toronto ON M5G 1L7

Tel: 1 416 673 6670 Fax: 1 416 673 6671 Email: info@trra.ca

Read the full report at www.trra.ca

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