TORONTO
A Global Center for R&D

Innovation enhanced with skilled-based collaboration, stable research funding and an impressive record of groundbreaking achievements are propelling Toronto to the forefront of biomedical pre-eminence. Toronto is one of the largest combined biomedical and biotechnology clusters in North America. With nine universities, twelve research hospitals and numerous private sector research facilities, Toronto offers a wide range of research and business development opportunities.

A strong foundation of research has led to discoveries such as insulin, the identification of normal and cancer stem cells, the gene responsible for cystic fibrosis as well as genes associated with Alzheimer's disease and breast cancer, to name but a few.

"These discoveries are just the tip of an almost 100-year-old iceberg of excellence in both scientific discovery and its application to human disease," says Toronto native Dr. Alan Bernstein, inaugural executive director of the Global HIV Vaccine Enterprise in New York City. Bernstein was the founding president of the Canadian Institutes of Health Research, Canada's counterpart to the National Institutes of Health.

The Toronto Area Draw: Public and Private Sector Support for Research

The Discovery District, in the heart of Toronto, is a one-square mile research park that includes many university, hospital and independent research facilities, biomedical and biotechnology companies, government, finance and business support services. Each year, more than $1 billion is invested into research in the District. Government tax credits and incentives available to R&D-intensive companies are impressive. Direct Canadian government funding for research now stands at $7.5 billion annually. The Ontario government has committed $730 million for new research in the sector through 2008, and $6.2 billion in Ontario's post-secondary institutions through 2010. This is one of the world's best scientific research & experimental development tax benefit programs for companies engaged in R&D activities. For those that qualify, the cost of every $100 invested in R&D can be reduced to $37 or less.

Collaboration Is Key to Toronto's Success

Collaboration is pivotal to Toronto's reputation for innovation and productivity, and it is

TORONTO ECONOMIC DEVELOPMENT & TORONTO REGION RESEARCH ALLIANCE

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nurtured within more than $1 billion of new research convergence facilities in the Discovery District. These include the 750,000 sq. ft. MaRS Centre (a second 750,000 sq. ft. unit is scheduled to open in 2010), the Terrence Donnelly Centre for Cellular and Biomolecular Research, the Leslie Dan Faculty of Pharmacy, the new Centre for Addiction and Mental Health CNS Campus, and the McEwen Centre for Regenerative Medicine. These facilities position Toronto as a global leader and partner in advanced biotechnology research and commercialization.

All of these compelling attributes are attracting leading researchers to the Toronto area. Dr. Tom Hudson came from Montreal via Boston to lead the new Ontario Institute for Cancer Research (OICR). Dr. Hudson and his multi-disciplinary research team were founding members of the International Haplotype Map Consortium, which made a major contribution to the international human genome program. OICR focuses on translating health research into treatments, devices, procedures and services that will benefit cancer prevention and treatment. OICR's budget for its first five years is $347 million.

"It is very exciting to be leading the research which will have a significant impact on controlling cancer," says Hudson. "We are very fortunate that Ontario has world-leading capability in cancer research, and we are able to build on that to achieve our goals."

Toronto: A World Leader in Stem Cell Research

Two Toronto-based researchers, Drs. Ernest McCulloch and James Till, set the stage for modern stem cell research when they discovered blood forming stem cells that enabled bone marrow transplants. The region is now home to other leading stem cell researchers: Dr. John Dick discovered cancer stem cells in leukemia and colon cancers; Dr. Peter Dirks identified cancer stem cells in brain tumors; and Dr. Gordon Keller discovered hematopoietic, vascular and cardiac lineages from embryonic stem cells. They are joined by other researchers whose work contributes to making the region a world-class hub for stem cell investigation: Drs. Janet Rossant, Andras Nagy, Bob Casper, Armand Keating and Peter Zandstra. The region will soon host Canada's first human embryonic stem cell library to be led by Dr. Mick Bhatia at McMaster University's Michael G. DeGroote Centre for Learning and Discovery in nearby Hamilton, Ontario.

The future of stem cell research in the region is bright. Last year, California Governor Arnold Schwarzenegger visited Toronto and, together with Ontario Premier Dalton McGuinty, announced the Cancer Stem Cell Consortium, with the Canadian part based in Toronto. Ontario will contribute $30 million to the Consortium to support the discovery and development of new therapies for cancer. Partners in this new initiative include UC Berkeley's Stem Cell Center in California, and Ontario-based OICR and the International Regulome Consortium.

THE ONTARIO GOVERNMENT HAS COMMITTED **$730 MILLION FOR NEW RESEARCH IN THE SECTOR THROUGH 2008**, AND $6.2 BILLION IN ONTARIO'S POST-SECONDARY INSTITUTIONS THROUGH 2010.

Toronto's immense research and development opportunities continue to attract global attention. "Toronto's health research community is simply one of the best anywhere," says Dr. Bernstein. ■

REGIONAL POPULATION: 7,200,000 (Q4 2007)

TOP THREE REVENUE-GENERATING INDUSTRIES: Biotech/Pharma (3rd largest in N.A.), IT (4th largest in N.A.), Financial Services (3rd largest in N.A.)

NO. OF LIFE SCIENCE COMPANIES: 1200+ (Q4 2007)

NO. OF LIFE SCIENCE JOBS: 140,000+ (Q4 2007)

NO. OF INSTITUTIONS OF HIGHER LEARNING: 29 with bio-related programs of study (Q4 2007)

NO. OF LIFE SCIENCE-FOCUSED VCs: 31 (Q4 2007)

UNEMPLOYMENT RATE: 6.3% (Q1 2008)