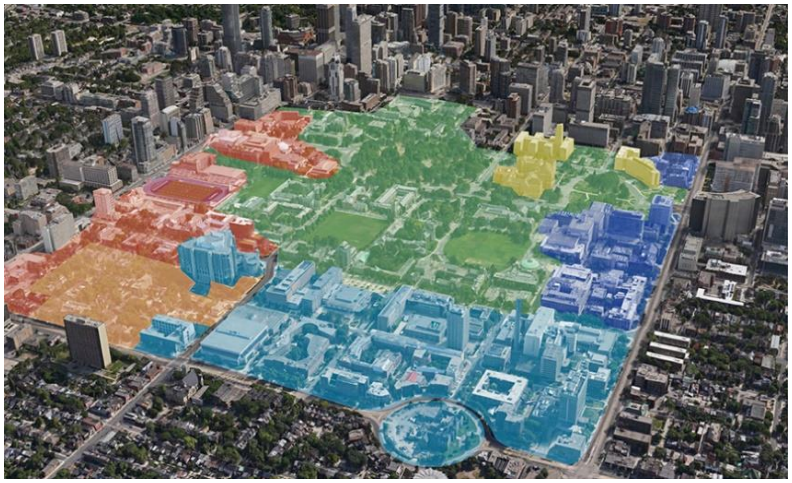
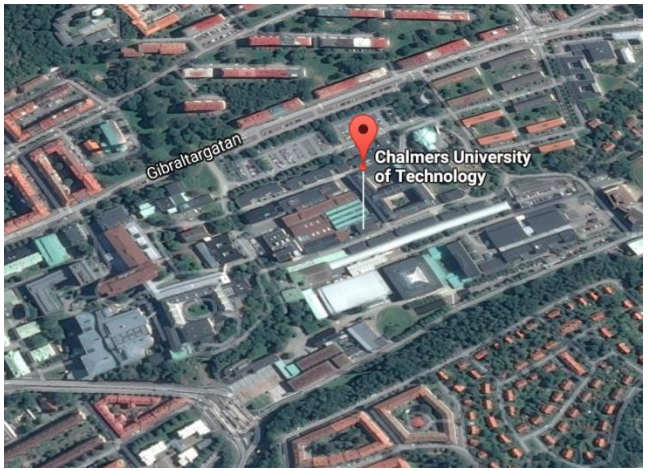
Making a Difference: Universities as Living Labs and Agents of Change





Presentation to G7 side-event

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Bologna
Jun 11, 2017

A New Social Contract?

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OPINION

Universities need a new social contract

To reconcile solution-driven research and blue-skies thinking, academic institutions urgently need innovative collaborations and new funding models, says **Indira V. Samarasekera**.

Over the past year, academic leaders from around the world have met to contemplate the future of higher education and university research, against the backdrop of global financial upheaval. As president of the University of Alberta in Edmonton, Canada, I have participated in some of these international roundtables. My conclusion? It is time to construct a new social contract between research universities and their public and private partners: one that both promotes the pursuit of basic research and encourages solution-driven work. We, the academic leaders and universities, should embrace this new relationship, establishing a funding mechanism to fit. We should devise new ways to measure success, and actively copy the organizations that work best. If we can do all that, we stand a better chance of solving the world's problems — now and in future.

Public and private universities worldwide face a bleak financial future. The value of endowments has plummeted — by as much as 30% in some institutions over the past year. Government support has been slashed — by up to 20% in the United States and up to 8% in Canada. Philanthropic support is harder to come by, and aspiring students can barely afford current fees, let alone increases in debt.

Yet nations are counting on the talent of graduates and on the discoveries of university researchers to restore and advance the global economy. As testimony to this faith, investments in research and development feature in stimulus packages — including US$16 billion in the United States and Can$2 billion in Canada. Many of these investments are targeted to support solution-driven research in specific areas. The US stimulus package includes funding for advanced energy research and climate-change research. The Canadian package funds ready-to-be-built infrastructure projects at colleges and universities. In addition, Can$200 million over seven years has been committed to the Canada Excellence Research Chairs, a new federal programme to attract top academics to build world-class centres. These hubs will focus on areas identified as strategically important to Canada's long-term economic plan: environment, natural resources, life and health sciences and information technology.

This push towards more solution-driven research funding, which pre-dates the recession, is a source of growing concern for many academic researchers, and for good reason. They are worried about the potential devaluation of basic-science research and arts scholarship, which have led to profound advances in human knowledge and to major commercial successes. Such 'blue-skies' research was, until recently, considered the mainstay of universities and a crucial part of the education of undergraduate and graduate students, and it must remain so.

But converging forces — the expansion of globalization, the increasing ease of communication and the trend of 'open innovation', whereby companies promote research outside their own buildings — are reshaping how public universities work, and to what end. Understandably, the supporting populace, governments, industries, philanthropic organizations and social agencies are calling for researchers to focus on seeking solutions to specific challenges.

Some researchers have responded enthusiastically. But academic thinking and funding mechanisms have not kept pace with the dual imperatives of blue-skies research and solution-driven research. It is time to bridge this gap.

SUMMARY

- Answers to big global problems are being lost to structural inertia
- Interdisciplinary, inter-institutional, international projects need support
- The world's government funding leaders must design a fix together

Slow going

The most urgent problems demanding scientific and technological research attention today are global — from international security to energy, environmental sustainability and economic recovery. To be fast and effective, we must stimulate and support interdisciplinary, inter-profession and inter-sector approaches, funded internationally.

What obstacles stand in the way? Inertia and

C. LAW

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"It is time to construct a new social contract between research universities and tier public and private partners; one that both promotes the pursuit of basic research and encourages solution–driven work."

(Samarasekara, 2009) in *Nature*

This has also been called the "Third Mission" of universities.

(e.g. Pinheiro et al, 2015)

Campus as Sustainability Test-Bed

Universities uniquely suited for this role:

- Single (owner-) occupiers
- Public mandate
- Teaching
- Research

Develop integrated sustainability solutions:

- Demonstration and research
- Engage and train students; develop new curricula and programs

Responding to societal challenges

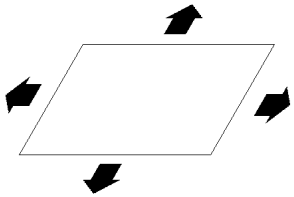
Two cross-cutting approaches:

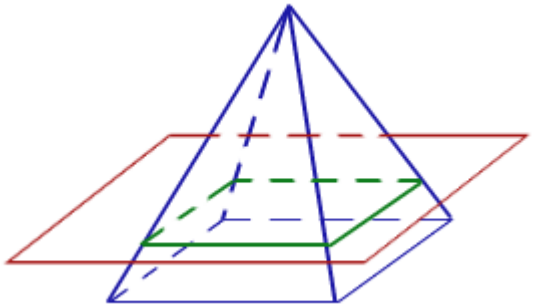
Campus as Living Lab

University as
Agent of Change

Institutional Culture Change

Academic





Operational

Academic

Operational

Regenerative Sustainability

Simultaneously increase human
And environmental wellbeing

(What processes? At what scale? Role of universities . . .)

CLL/AOC typology

- Different models
  - Centre-led (UBC, Chalmers)
  - Distributed (U of T)
  - Hybrid (CBS)
- Most universities in latter two categories, at least at the start

UNIVERSITY OF TORONTO

Committee on the Environment, Climate Change and Sustainability

Mandate: to identify ways to advance the University's contribution to meeting the challenge of climate change, with a particular focus on research and innovation, teaching, and University operations.

Three Subcommittees

1. **CAMPUS AS LIVING LAB**
   - Pursue campus as 'test bed' for environmental and sustainability research and best practices
   - new renewable energy projects
   - tri-campus clean-tech challenge
   - Utilities Reduction Revolving Fund
   - more rigorous energy efficiency standards

   - One Spadina
   - St. George Retrofit Study
   - Trinity College
   - Sussex residence
   - King's College Circle (?)
   - Student engagement
   - Sustainability Fellows

2. **AGENT OF CHANGE IN THE COMMUNITY**
   - Identify opportunities to motivate culture change internally and externally
   - tri-campus clean-tech challenge
   - Collaboration with industry

   - Strong partnerships with the private and public sectors and civil society
   - Sussex residence
   - Student engagement
   - Sustainability Fellow

3. **CURRICULUM REFORM**
   - Inventory of courses and research
   - $750,000 for climate-change related academic initiatives
   - climate change-related themes in selected programs and curricula
   - Promote student opportunities/achievements

   - Student engagement
   - Pathways concept
   - Sustainability Fellowsz

Student Engagement

- Goal: thousands of students working with partners on sustainability projects
  - Both graduate and undergraduate
  - 5000 off campus/1000 on campus
- Two models
  - For pay – internships; work-study
  - For credit – community engaged learning on- and off-campus
- ATLAS grant
  - Inventory of courses and CE learning
  - Inventory of potential partners
  - Match-making!

Teaching & Learning Vision: Integration across the University

Each student, regardless of their degree program, should have access to an education in sustainability via a "sustainability learning pathway" (UBC Sustainability Academic Strategy, 2009*)*