

President's Advisory Committee on the Environment, Climate Change and Sustainability

Mandate

to advance coordination of the University's contributions and objectives pertaining to research and innovation, academic programs, and sustainability initiatives related to our operations



CECCS Annual Report, 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.

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



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

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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.”
(Samarasekera, 2009) in *Nature*

This has also been called the “Third Mission” of universities.
(e.g. Pinheiro et al, 2015)

CECCS Operating Principles

- Regenerative sustainability approach
- Integration of academic and operational sustainability

Committee members

- Alumni Maria Banda, Law
- Student Shamaila Bajwah, Undergraduate
- Student Conor Anderson, PhD candidate, UTSC
- Faculty Aimy Bazylak, Institute for Sustainable Energy
- Faculty Kenneth Corts, Rotman
- Faculty Shashi Kant, Forestry, UTM
- Faculty Liat Margolis, Architecture, Landscape and Design
- Faculty Fiona Miller, Health Policy
- Faculty Jennifer Murphy, Chemistry
- Faculty Kim Strong, School of the Environment
- Staff Tim Lang, Sustainability Office, UTSC
- Staff Andy Macdonald, Kinesiology and Physical Education
- Staff Derek Newton, Innovations and Partnerships Office
- Staff Daniella Mallinick, Academic Programs Office
- Staff Paul Leitch, Director, Sustainability Office

5 staff, 7 faculty, 2 students, 1 alumna

Three Subcommittees

Campus as Living Lab



University as Agent
of Change



Curriculum Innovation



22 meetings of CECCS and subcommittees to date

Campus as Living Lab

Current Activities

- Identify at least 2 projects per campus (1 new build; 1 retrofit)
- Work with project planning teams and identify student opportunities (write proposal)
- Types of student involvement: shadow design, monitoring and research, design charrettes; study of process
- Develop CLL principles/concept document

University as Agent of Change

Current Activities

- Work with Provost's Office re SMA requirement on Integrated Learning Experiences (cf. White Paper)
- Create typology of forms of student engagement, inventory, and Charter of Principles
- Community Engaged Learning (CEL) inventory (298 courses, 122 faculty, 3749 students)
- CCP/ACE Lab CEL workshop in fall
- Tri-Campus Clean Tech Challenge

Curriculum Innovation

Current Activities

- Course inventory (searched course outlines by SDG terms: 1542* sustainability-oriented courses)
- Sustainability curricular pathways initiatives
 - UTM – Dean’s support; major initiative underway
 - FALD – integrate sustainability in undergrad program
 - FAS – focus on injecting sustainability in big 1st year courses
 - UTSC – Working Group; targeting certificate program

Sustainability Course Inventories

- Inventory of courses:

University Divisions	Unique Sustainability Courses	Community-Engaged Learning Courses
ARTSCI- UTSG	700	93
UTSC	306	50
UTM	375	51
APSE	161	25
Total:	1542	298

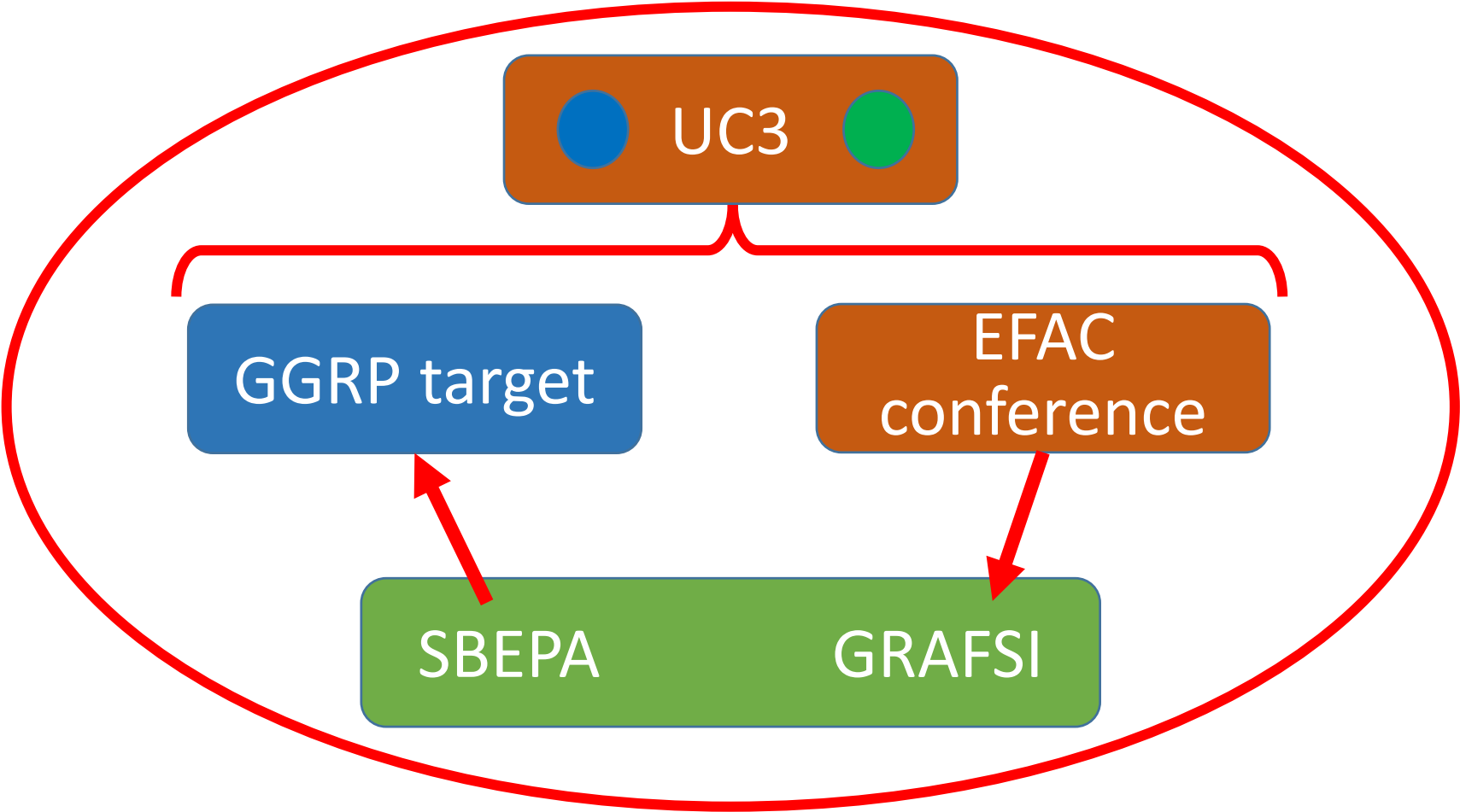
- Make sustainability course inventory available to students
- Create a community of faculty teaching in the sustainability area
- Contribute to the ECCS goal of creating curricular ‘sustainability pathways’ for U of T students
- Develop more curricular and co-curricular student engagement opportunities related to sustainability

Other activities

- Trinity College – food project; roof garden; Trinity One program; new building
- Engineering – 4th yr capstone and 1st yr Engineering Strategies and Practice (ESP) projects
- Sid Smith – sustainability in new building project
- Promoting CECCS approach in other universities
 - Copenhagen Business School
 - Utrecht University
 - University of Luxembourg
 - L'Université libre de Bruxelles

The Nexus

CECCS



Key:

Operational

Community

Research

CECCS Aspirations



- 1000 students/yr on CLL projects
- Global leadership in sustainability standards
- Signature sustainability projects



- 5000 students/yr on AOC projects in the community
- Develop sustainability-oriented CEL principles
- Sustainability a priority in CEL courses



- Sustainability curriculum pathways for every undergraduate student
- Sustainability community of practice for faculty



- International leadership in operational and academic sustainability
- Sustainability a key component of U of T identity