

**FOR RECOMMENDATION**

**PUBLIC**

**OPEN SESSION**

**TO:** Academic Board

**SPONSOR:** Professor Scott Mabury, Vice President, University Operations

**CONTACT INFO:** 416-978-2031, [scott.mabury@utoronto.ca](mailto:scott.mabury@utoronto.ca)

**PRESENTER:** As above

**CONTACT INFO:** As above

**DATE:** May 16, 2016 for May 26, 2016

**AGENDA ITEM:** 5(c)

**ITEM IDENTIFICATION:**

Lab Innovation for Toronto (LIFT) Project - UTSC Campus Vivarium & S-Wing Research Labs Renovation and Growth: Project Approval and Funding Sources

**JURISDICTIONAL INFORMATION:**

The *Policy on Capital Planning and Capital Projects* provides that capital projects exceeding \$10 million (Approval Level 3), at UTSC will first be considered by the UTSC Campus Council, which shall recommend approval to Academic Board. The *Policy* further states that “If a project will require financing as part of the funding, the project proposal must be considered by the Business Board.” Following consideration and approval by the Academic Board, such proposals are then brought forward to the Executive Committee for endorsement and forwarding, before being considered by the Governing Council for approval. Execution of such projects is approved by the Business Board. If a project will require financing as part of the funding, the project proposal must be considered by the Business Board.”

**GOVERNANCE PATH**

**A. Project Planning Brief**

1. UTSC Campus Council [for recommendation] (May 26, 2016)
2. **Academic Board [for recommendation] (May 30, 2016)**
3. Executive Committee [for endorsement and forwarding] (June 14, 2016)
4. Governing Council [for approval] (June 23, 2016)

## **B. Execution of the Project**

1. Business Board [for approval] (June 16, 2016)

### **PREVIOUS ACTION TAKEN:**

At its meeting on May 9, 2016 the Executive Committee approved in principle that the two projects were being submitted by the University of Toronto to the Federal Government's Post-Secondary Institutions Strategic Innovation Fund (SIF) - the Lab Innovation for Toronto (LIFT) Project, and the Partnerships in Innovation and Entrepreneurship (PIE) Complex (Phase 1A).

The Chair of the Governing Council signed a letter that formed part of the University's submission to the Government of Canada formally confirming that governance approval had been received and that the University of Toronto would process with completion of these projects pending confirmation of funding support from the Federal and Provincial Governments.

### **HIGHLIGHTS**

The Post-Secondary Institutions Strategic Investment Fund (SIF) is a time-limited federal program that will provide up to \$2 billion to accelerate strategic construction, repair and maintenance activities at universities and colleges across Canada. The SIF aims to generate direct economic activity and to enhance the research and innovation infrastructure at post-secondary institutions.

Projects eligible under the SIF are those that support the enhancement, expansion, new construction and repair of infrastructure assets at post-secondary institutions.

The University of Toronto proposes an urgent, tri-campus renewal of research labs across nine divisions. The labs rejuvenated by the U of T Lab Innovation for Toronto (LIFT) project are on average 50 years old and comprise approximately 54,300 square metres of grossly inefficient space. The project will result in 561 fully renovated labs, which will provide state-of-the art research facilities to an estimated 800 researchers, 4,500 graduate students and 1,100 undergraduates.

Due to the accelerated nature of this program and the deadline for the applications, the project components do not have full project planning reports. Briefs have been prepared for each individual component that detail scope of work.

### **UTSC LIFT component**

At UTSC, renewal of existing infrastructure within the Academic Departments of Biological Sciences, Health Studies, Psychology and Anthropology is required to support a diversity of research strengths and provide the necessary infrastructure to establish modern laboratories by converting existing older infrastructure for research in areas such as molecular immunology and cell biology research.

Infrastructure renewal will also provide access to core infrastructure more broadly across all four departments.

*Academic Board – Lab Innovation for Toronto (LIFT) Project - UTSC Campus Vivarium & S-Wing Research Labs Renovation and Growth: Project Approval and Funding Sources*

The renovation of 20 research laboratory spaces will support and grow UTSC's award winning research in biological science, psychology, anthropology and growing areas of research such as health studies. Faculty will be provided with space for productive research and the engagement of undergraduate and graduate students with hands-on research experience.

The renovation and growth of the UTSC Campus Vivarium will remedy the compliance and space recommendation(s) identified by the Canadian Council on Animal Care (CCAC) and will provide opportunities for growth in animal related research. Currently faculty hires are being delayed in this area of research until space is made available.

**SIF Funding Criteria**

All U of T projects are expected to be substantially completed by April 30th, 2018, and must correspond to at least one of the three SIF program categories below:

- a) Improve the scale or quality of facilities for research and innovation, including commercialization spaces used by industry;
- b) Improve the scale or quality of facilities for specialized training at colleges focused on industry needs;
- c) Improve the environmental sustainability of research and innovation related infrastructure at post-secondary institutions and college training infrastructure.

Total funding from federal sources will cover up to half (50%) of the project's eligible costs.

**LIFT Benefits**

While specific work will vary across each renovation component, all share the goal of modernizing U of T labs to increase usable space and enhance its quality. The renewed labs will be designed to support collaboration, flexibility of space allocation, and will support integrated basic science research platforms.

Modernized floor plans will encourage proactive interaction and support, open discussion and cooperation. The revitalized research labs will also provide improved research grade laboratories with equipment and support rooms that will be used jointly by faculty, post-doctoral fellows, graduate students and undergraduates. Finally, the consolidation and revitalization of these research labs across all U of T campuses will address basic infrastructure improvements such as air handling, climate, and electrical systems, which are currently overloaded and inefficient.

This project will eliminate perpetual barriers to breakthrough discovery and transform U of T's capacity to contribute to Canadian innovation. The key benefits of the U of T LIFT project will be realized through increased basic science discoveries, applied research innovations, commercialized products, spin-off companies, new and expanded industry partnerships, and more sophisticated research training opportunities for our students and graduates.

In the immediate term, the U of T LIFT project will generate significant direct economic activity and job creation in the Toronto region. The project will also produce on ongoing savings of at least \$3 million per year in utility expenses and reduce our environmental footprint by a minimum of 5,400 tonnes of eCO<sub>2</sub>.

Revitalizing these existing assets to serve the demands of 21<sup>st</sup> century science is a highly cost-effective approach to supporting the needs of the Canada’s evolving knowledge economy, and will save an estimated \$450 million over the cost of constructing new research facilities.

## **UTSC**

### **1. Campus Vivarium & S-Wing Research Labs Renovation and Growth**

NASM: 2,030

Researchers: 38

20 research labs and 11 teaching labs that will be fully renovated. The Campus Vivarium will undergo renovation and growth to remedy serious compliance and space recommendations. Infrastructure will be upgraded to support existing and planned levels of research, improve efficiency and reduce environmental impact.

***The St. George Campus and University of Toronto Mississauga components have been provided in Appendix A to indicate the full scope of the proposal to the government.***

## **NEXT STEPS**

Achieving successful completion within the time frame allowed will require projects to be grouped and executed in an efficient manner. Generally, this will mean that multiple initiatives in any given building will be bundled together as a “project” for the purposes of both design and construction.

To expedite the design/documentation process, architects will be single sourced. A list of firms of appropriate size and experience will be assembled with a view to matching firm experience with each project. One firm for each project will be provided with as complete project brief/scope of services as possible and asked to submit a fee proposal. The fee proposal will be reviewed to determine consistency with industry standards.

This single sourcing process will be pursued in a manner consistent with the regulations governing the contracting of licensed professionals.

The bundled, building-based initiatives will be documented and tendered as one project, which should result in economies of scale for contractors. The number of current pre-qualified contractors is sufficient to include five bidders for each project; economies can be achieved through proximity of projects within a building which requires less fixed overhead (job boxes, supervision, scheduling, etc.) and facilitates redirection of labour with less down time.

Phasing of projects within the ‘group’ will not be possible. Consequently, all spaces within the defined project construction must be emptied, de-commissioned and available for construction no later than the date of tender close. This allows the contractor to mobilize quickly and complete the work efficiently.

Billing and administering of separate component parts will reflect the program's reporting requirements but will otherwise not be allowable.

## **FINANCIAL IMPLICATIONS**

Discussion of overall costs can be found in the *in camera* document for this project.

### **The funding sources for UTSC are as follows:**

Strategic Investment Fund  
UTSC

### **The funding sources for the St. George Campus and UTM are as follows:**

Faculty of Arts & Science  
Dalla Lana School of Public Health  
Daniels Faculty of Architecture, Landscape, and Design  
Faculty of Dentistry\*  
Faculty of Applied Science & Engineering  
Faculty of Medicine  
Faculty of Music  
UTM

The Province of Ontario's Facilities Renewal Program requires expenditure of deferred maintenance funds for this project. These will be allocated within the sub-projects.

\* The Faculty of Dentistry may seek borrowing for a portion of their component cost.

## **RECOMMENDATION:**

Be It Recommended to the Governing Council:

1. THAT the Lab Innovation for Toronto (LIFT) Project submitted to the Federal Government's Strategic Investment Fund (SIF) is a priority for the University of Toronto and the institution will provide all required administrative support for the completion of the project by April 30, 2018.
2. THAT the Lab Innovation for Toronto (LIFT) Project – UTSC Campus Vivarium & S-Wing Research Labs Renovation and Growth Component, totalling approximately 2,030 NASM (net assignable square metres), to be funded from the following sources:

Strategic Investment Fund  
UTSC

be approved.

## **Appendix A: St. George Campus & UTM LIFT Components**

### Faculty of Arts & Science

1. Ramsay Wright  
NASM: 5357                      Researchers: 158

A total of 26 labs will be renovated in the Ramsay Wright Building. Cell & Systems Biology and Ecology and Evolutionary Biology research labs on the 3<sup>rd</sup>, 5<sup>th</sup> and 6<sup>th</sup> floors will be renovated to meet current standards and consolidated into one space (currently EEB has space in Earth Science building). Research support spaces including the Aquatics facility, Vivarium and Microscopy Suite will be renovated and expanded.

Current Psychology teaching labs on the 3<sup>rd</sup> floor will be renovated and converted into wet research labs for faculty currently working in the basement.

2. Lash Miller Sustainability Upgrades  
NASM: 16,730                      Researchers: 75  
This project will reduce energy consumption and modernize the infrastructure in the Lash Miller Building. The work includes new ventilation, cooling, fire protection, building controls, lighting and electrical supply.
3. Koffler Scientific Reserve Lab Expansion in Racing Barn  
NASM: 535                      Researchers: 38

This project will take the remaining 75% of an inhabitable racing barn and transform it into a modern research facility. 3 dry labs will be created and new roof top 60 kw solar panels will be installed.

### Dalla Lana School of Public Health

1. Research Lab Renovation  
NASM: 400                      Researchers: 15

10 discrete labs will be renewed in Gage Building, and the mechanical systems will be upgraded. Two additional laboratories will be created from currently unused space in the basement of the building.

### Daniels Faculty of Architecture, Landscape, and Design

1. Expansion of Grit Lab  
NASM: n/a                      Researchers: 8

The expansion of the GRIT Lab will be housed at One Spadina Crescent and include both roof and at-grade structures A green roof, smart irrigation system, Silva cells and planting soil, porous paving and high-reflective concrete paving, earthworks and plantings will be installed.

Faculty of Dentistry

1. Research Lab Renovation  
NASM: 3,800                      Researchers: 65

95 labs will be renovated into 21 labs, located on the 4<sup>th</sup> and 5<sup>th</sup> floors of the Dentistry Building. The overall renovation will provide large, open-plan labs, shared support rooms, faculty offices, dedicated trainee space as well as shared multi-user collaboration space. The building systems will be upgraded with new energy-efficient ones and energy-efficient equipment.

Faculty of Applied Science & Engineering

1. UTIAS Lab Renovation  
NASM: 351                      Researchers: 26

The UTIAS project at 4925 Dufferin Street will update the current Field Robotics Lab and expand and renovate the Sustainable Aviation Design Lab.

2. Civil Engineering and Electrical & Computer Engineering Lab Renovations  
NASM: 3,944                      Researchers: 178

44 labs will be renovated in Galbraith, Sandford Fleming and the Engineering Annex. These renovations will bring the research lab space up to current standards, including the much needed environmental controls (temperature and humidity) needed to support sensitive research equipment. Many of the spaces will also be opened up to create more collaborative facilities that will support a higher number of grad student researchers.

3. Mechanical and Industrial Engineering Lab Renovations (Lassonde &Haultain)  
NASM: 221                      Researchers: 16

5 labs will be renovated in Lassonde Mining and Haultain. These renovations will revitalize the research labs and bring their capabilities up to our standard labs, providing clean, modern, and well-serviced facilities for thermal & fluid sciences and energy & environmental engineering research.

4. Mechanical and Industrial Engineering Lab Renovations (Mechanical Engineering Bldg)  
NASM: 157                      Researchers: 5

6 labs will be renovated in the Mechanical Engineering Building. The proposed renovations include complete renewal of the research labs, the replacement of 6 existing fumehoods, the addition of 2 new fumehoods, and the installation of new HVAC systems.

5. IBBME Lab Renovation

NASM: 629                      Researchers: 17

10 labs will be renovated in the Rosebrugh Building for the Institute of Biomaterials & Biomedical Engineering. The proposed renovations include opening up the research environment to create a more collaborative work space, the replacement of fumehoods, the provision of emergency power, and the installation of new mechanical and electrical services.

6. Material Sciences & Engineering and Chemical Engineering & Applied Chemistry Lab Renovations

NASM: 893                      Researchers: 94

10 labs will be renovated in the Wallberg and Pratt buildings, and the infrastructure in both buildings will be upgraded. The proposed renovations include new fumehoods, new lab furniture, window replacement, and the replacement and modification of the mechanical and electrical services.

Faculty of Medicine

1. Research & Teaching Lab Renovation

NASM: 12,243                      Researchers: 272

The Medical Sciences Renewal Project includes 3 separate areas of the building; the research floors, the Anatomy teaching and support facilities, and the NMR facility. The research lab renovations are planned for lab and lab support rooms on floors 3 to 7 in MSB, with the exception of the 4th floor of the west wing (Block B), which will serve as temporary lab spaces for the remaining occupants during the renovations. 389 research and teaching labs will be renovated to current standards with upgraded infrastructure and centralized facilities. A new structural slab, emergency power and stair will be provided for the NMR facility.

Faculty of Music

1. Electro-Acoustic Music Studio Renovation

NASM: 122                      Researchers: 6

The Electro-Acoustic Music Studio at Edward Johnson Building will be renovated to improve air quality, extend performing space and provide adequate acoustical separation.



UTM

1. Davis Building Research Lab and Infrastructure Upgrades  
NASM: 6,859                      Researchers: 95

Six inter-dependent elements are planned in the Davis Building: Back-up Power, A-wing HVAC Renewal, a Retrofit of Electrical Power System, renovations of 1st Floor (D Block) Neural and Cell Biology Laboratories, and the 3rd Floor (A Block) Medicinal Chemistry and Molecular Biology Laboratories. A total of 63 labs will be renewed.