

## **Guidelines for UTSC Core Facilities**

*Original Guidelines Endorsed by UTSC Executive Team - November 22, 2022*

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### **Purpose**

The purpose of these guidelines is to provide a structured, detailed, and transparent framework to support the establishment, operation and, when necessary, closure of core facilities at UTSC.

### **Context**

Recognizing the importance of core facilities, the U of T's Institutional Research Leadership Group (IRLG) established the Core Facilities Working Group (CFWG) to undertake an analysis and make recommendations for improved planning, development and oversight of major equipment and facilities across U of T's academic divisions and campuses towards maximum leveraging of investments, equitable access, efficient operation, and responsible management.

The CFWG established goals for their work that took account of all stages in the life cycle of core facilities, including:

- A proposed definition of the type/class/level of equipment/facility to be considered “core facilities” (with, potentially, subclasses for international, national, regional, institutional, divisional)
- Integrated planning processes and mechanisms to ensure that all critical considerations (including, but not limited to, space, facilities, access, expenses, revenues, sustainability) are addressed in institutional consideration of new/renewed core facilities
- New/enhanced procurement-related mechanisms to facilitate tracking and monitoring of key information regarding acquisitions that meet the definition of “core facilities”, leading to the creation of an “evergreen” inventory of existing and planned facilities
- An operations and maintenance guide to ensure collaborative access to maximize transparent and sustainable access/usage, timely renewal/upgrades as required, and cost control and sharing/recovery
- Policies and procedures and supporting mechanisms relating to the expansion of existing and establishment of new institutional core facilities, as well as the responsible sun-setting/disposal of equipment, taking account of environmental health and safety considerations, the internal relocation of equipment that is still usable, and updating of the institutional inventory.

The goals outlined by the CFWG reflect UTSC's plan to “[o]ptimize and invest in research infrastructure based on a culture of shared, collaborative, and synergistic use” ([Inspiring Inclusive Excellence](#), p.26). This plan is part of Campus' commitment to “enhancing internal supports for research, leveraging institutional resources that make the U of T a top-ranked global powerhouse of scholarship, and facilitating collaborations with partners and scholarly networks across the University and around the world” ([Inspiring Inclusive Excellence](#), p.26). Such facilities also support the provision of “transformative, experiential, and holistic” curricular

opportunities that help ensure that graduates are “equipped with tools and transferrable skills that enable them to thrive and to influence the world” ([Inspiring Inclusive Excellence](#), p.20).

The *Guidelines for UTSC Core Facilities* have been developed to facilitate the establishment and successful operation of UTSC core facilities, to enable the Campus to successfully “pursue global prominence and impact ... as a leader in specific areas of strength” ([Inspiring Inclusive Excellence](#), p.26). In so doing, UTSC will support the realization of its strategic research and training objectives and contribute to the University’s “robust research and knowledge building enterprise – one that puts us in an exceptional position to be leaders in the creation of strong national research and training networks that, with ongoing public support, will strengthen Canada’s position in the global knowledge economy ([Excellence, Innovation, Leadership](#), p.20).

These guidelines are applicable to all core facilities that support the core mission of the university, irrespective of whether they are exclusively or largely focused on research and creative activity or on teaching and learning, or involve activities that combine research and creative activity, teaching and learning, and community engagement (i.e., hybrid).

## Vision

UTSC has invested and will continue to invest in core facilities, which are purpose-built to house and provide access to world-class infrastructure that is shared across the U of T communities to support excellence in research, creative activity, teaching, and learning, while realizing the economies of scale in facility management.

The purpose of investing in core facilities is to make available to all scholars and educators at U of T and, often, external users, specialized facilities, thereby:

- ensuring widespread access to equipment, services and expertise needed to advance the university’s core mission
- encouraging collaboration
- extending the breadth of programs related to the work of the facility and integrating them across disciplines and academic units
- optimizing the stewardship and sustainability of infrastructure
- making UTSC more research and creative activity-ready or teaching and learning-ready for new faculty and students
- making UTSC more innovation ready and accessible to community partners

The vision is to, whenever possible, create core facilities by bringing together within a common business unit those facilities that share a similar purpose, and which otherwise would operate as independent units.

## Definition

A **core facility** is a shared resource that supports a wide community of users. It supports the core mission of the university and provides access to spaces, infrastructure, services, expertise, and training, supported by staff. It is distinct from facilities that are locally managed for the exclusive benefit of an individual group, department, cluster, centre, or institute. It is broadly accessible

and available to be utilized by researchers and educators across UTSC and U of T, irrespective of its administrative affiliation and with no requirement for collaboration or co-authorship. It is generally too expensive, complex, or specialized for an individual group, department, cluster centre, or institute to cost-effectively provide or sustain. It has defined governance and management structures, with dedicated technical and operational staff.

### **Tiers of Core Facilities:**

There are different tiers of core facilities, including:

*Institutional Core Facility:* Supports multiple campuses or divisions and is recognized by UofT as an Institutional Core Facility.

*Campus Core Facility:* Supports multiple departments/units and is recognized by UTSC as a Campus Core Facility.

*Departmental Core Facility:* Supports various research, creative activity, or teaching and learning groups, and is recognized by the host Department as a Departmental Core Facility.

### **Categories of Campus Core Facilities:**

Campus core facilities are categorized as follows:

*Category 1:* Those that straddle two or more domains of our academic mission (i.e., hybrid) – research and creative activity, teaching and learning, and community engagement, with a significant focus on our academic mission. It is unlikely that campus core facilities include those that are exclusively focused on community engagement.

*Category 2:* Those that are exclusively or largely research and creative activity focused.

*Category 3:* Those that are exclusively or largely teaching and learning focused.

A campus core facility can be a single-sited, distributed, or virtual facility:

*Single-sited facility:* Physical infrastructure that includes: (1) large-scale installations established as campus research, creative activity, teaching and learning facilities at the time of inception; and (2) facilities that have migrated from departmental management as demand for the facility broadened to users beyond the host group.

*Distributed facility:* Infrastructure that is housed across several separate locations and/or in several academic units, divisions or campuses but shares a common purpose. By becoming a core facility, distributed infrastructure gains operational efficiency.

*Virtual facility:* A facility that shares resources focused on specialized services leveraging university talent and expertise (i.e., they do not have physical infrastructure associated with them).

## **Characteristics Common to Campus Core Facilities**

While each campus core facility will be distinct in some ways, they will all possess the following characteristics, which will distinguish them from other types of facilities:

- aligned with UTSC research, creative activity, or teaching and learning priorities
- defined scope, offering clearly identified services, which may be provided on a contract basis

- support broad usage, exceeding what is normally expected to be managed by a single faculty member or department
- available to the entire campus and university community, and potentially to researchers and educators from other universities
- available to non-academic users, including industry, government, and community partners (unless prevented by exceptional circumstances)
- accountable to a governance committee established to ensure the facility adheres to the *Guidelines for UTSC Core Facilities* (please see below for more details about governance committees)
- administered by a leader who is responsible for the overall operations of the facility, including supervision of staff, financial management, business operations, and marketing and communications with users and stakeholders; the leader will maintain knowledge of the different types of scholarly activities that occur in that facility and can advise users regarding the activities being conducted therein
- a clearly defined management authority (i.e., the definition of who has responsibility for implementing and ensuring adherence to the business plan and who makes decisions around life-cycle costs, etc.)
- a business plan that includes:
  - multiple revenue streams, including user fees, retained earnings from operations, sponsorships and gifts, and operating grants
  - clear articulation of known costs
  - marketing and communications strategy
  - stakeholder and client-relations strategy
  - quality assurance and improvement practices
  - staffing plan
  - maintenance and long-term sustainability plan
- administers policies that govern the fees any user pays for access:
  - facility fees will reflect the fact that such fees are an essential feature of a core facility
  - the fee schedule and the protocols for access will in general be distinctive for different facilities, instruments, and services.
  - the fee will be set at an appropriate rate for internal and external users (i.e., other academic institutions, government, industry, and, in some cases, community)
- normally will have administrative and technical staff internal to the facility:
  - eligible to receive campus-level financial/administrative support from relevant offices (e.g., OVPRI, OVPAD, OBOSA [Office of Business, Operations, and Strategic Affairs])

### **Governance of Campus Core Facilities**

The strategic objectives and priorities of campus core facilities, oversight of their operations, and monitoring and review of their activities will be supported by a governance structure made up of the following committees (see Figure 1):

## 1. Steering Committee (SC):

### **Mandate:**

Operating under delegated authority from the Vice-President and Principal (VP&P), it provides campus-wide oversight of, and has overall responsibility for, all core facilities at UTSC, including:

- determining what kinds of facilities properly belong in each of the different tiers and categories outlined above
- appointing members of Category 1&2 and Category 3 core facility planning and review committees
- reviewing recommendations from Category 1&2 and Category 3 core facility planning and review committees for approval of the governance structure and committee membership of each core facility, with final decisions normally delegated to the VPRI for Categories 1&2 core facilities and to the VPAD for Category 3 core facilities
- appointing, reviewing performance, and terminating appointments of directors of core facilities, with responsibility normally delegated to the VPRI for Categories 1&2 core facilities and to the VPAD for Category 3 core facilities
- reviewing annual reports from the directors of the core facilities and reviewing recommendations from the core facility committees for the approval of each core facility's annual business plan and budget
- adjudicating and expeditiously addressing all matters related to core facilities that may emerge or be referred to it by the core facility committees or any other source
- making recommendations for the establishment or disestablishment of facilities to the VP&P; in making these recommendations, ensuring that due diligence has occurred that the facility needs cannot be satisfied by an existing core facility before making recommendations for approving applications for infrastructure grants aimed at introducing new infrastructure
- seeking and being an active member of the tri-campus U of T Institutional Core Facility Committee (ICFC), which plays both a strategic and operational role in coordinating the management of Institutional Core Facilities across U of T's academic divisions and campuses (See Appendices 1 and 2)
- regularly reviewing core facilities' governance structure at all levels and making recommendations to the VP&P as necessary

Should there arise any instances in which an issue cannot be resolved by the SC, the matter shall be brought to the VP&P for final decision.

### **Membership:**

- Vice-Principal Research and Innovation (VPRI) (Chair)
- Vice-Principal Academic and Dean (VPAD)
- Chief Administrative Officer (CAO)
- Chair, Core Hybrid/Research Facility Committee (Category 1&2)
- Chair, Core Teaching and Learning Facility Committee (Category 3)

## 2. Category 1&2 Core Facility Committee:

### **Mandate:**

Operating under delegated authority from, and reporting to, the Steering Committee, it has responsibility for overseeing the operation of all Category 1 (Hybrid) and Category 2 (Research and Creative Activity) core facilities as outlined in these guidelines, including:

- reviewing annual reports on the performance of Category 1&2 core facilities
- monitoring and evaluating operations of existing Category 1&2 core facilities and providing annual reports and relevant recommendations to the Steering Committee
- receiving, reviewing, and making recommendations to the Steering Committee for the approval of each Category 1&2 core facility's annual business plan and budget
- receiving, reviewing, and making recommendations to the Steering Committee for the approval of any changes in the Category 1&2 core facility's terms and conditions of use
- reviewing applications, and making recommendations to the Steering Committee, for **new** Category 1&2 core facilities, including their proposed governance structure and membership of committees
- making recommendations to the Steering Committee for the closure of Category 1&2 facilities

### **Membership:**

- Associate Vice-Principal Research & Innovation–Research Facilitation and Infrastructure (AVPRI-RFI) (Chair)
- Associate Vice-Principal Research & Innovation–Strategic Initiatives and Partnerships (AVPRI-SIP)
- Director, Facilities Management or designate
- Director, Financial Services or designate
- Directors of Category 1&2 core facilities
- Representation from any other offices as may be determined by the Steering Committee

## 3. Category 3 Core Facility Committee:

### **Mandate:**

Operating under delegated authority from, and reporting to, the Steering Committee, it has responsibility for overseeing the operation of all Category 3 (i.e., exclusively or largely teaching and learning-focused) core facilities as outlined in these guidelines, including:

- reviewing annual reports on the performance of Category 3 core facilities
- monitoring and evaluating operations of existing Category 3 core facilities and providing annual reports and relevant recommendations to the Steering Committee

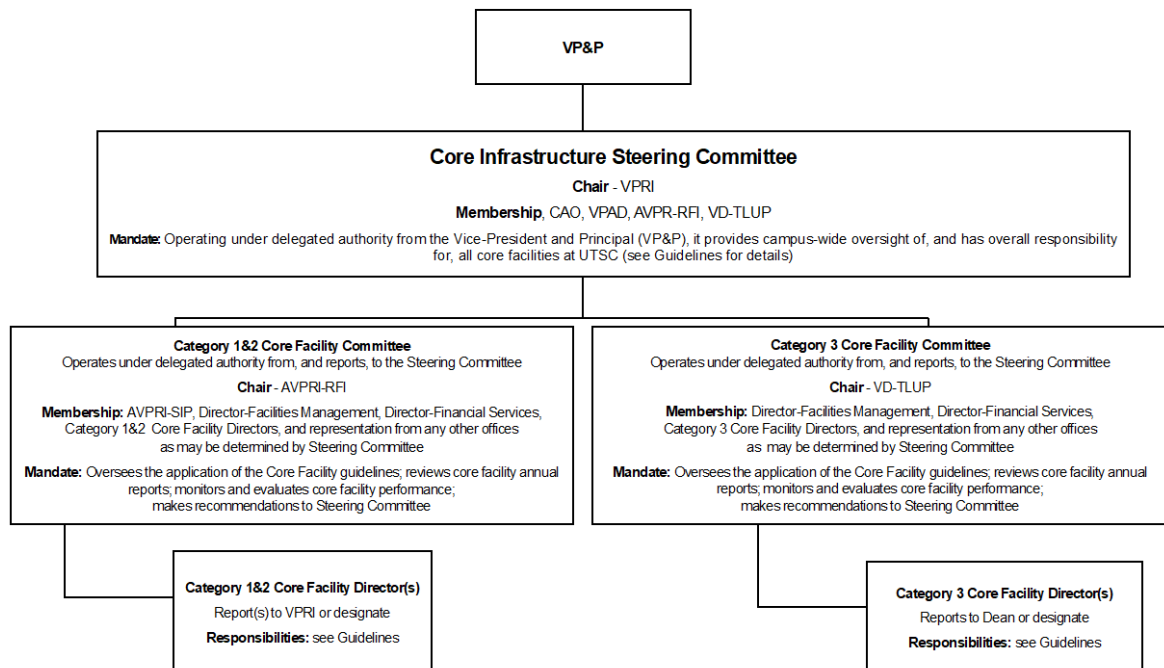


- receiving, reviewing, and making recommendations to the Steering Committee for the approval of each Category 3 core facility’s annual business plan and budget
- receiving, reviewing, and making recommendations to the Steering Committee for the approval of any changes in the Category 3 core facility’s terms and conditions of use
- reviewing applications, and making recommendations to the Steering Committee, for **new** Category 3 core facilities, including their proposed governance structure and membership of committees
- making recommendations to the Steering Committee for the closure of Category 3 facilities

### Membership:

- Vice Dean – Teaching, Learning and Undergraduate Programs (VD-TLUP) (Chair)
- Director, Facilities Management or designate
- Director, Financial Services or designate
- Directors of Category 3 core facilities
- Representation from any other offices as may be determined by the Steering Committee

**Figure 1: UTSC Core Facilities Governance Structure**



### **Roles, Reporting Relationships, and Responsibilities:**

#### **AVPRI-RFI/AVPRI-SIP and VD-TLUP:**

- The AVPRI-RFI normally has supervisory authority, responsibility, and accountability for all Category 1&2 core facilities (i.e., hybrid in nature or exclusively or largely research/creative activity-focused), although such may be assigned to the AVPRI-SIP by the VPRI for certain Category 1 core facilities as appropriate
- The VD-TLUP normally has supervisory authority, responsibility, and accountability for all Category 3 core facilities (i.e., teaching and learning-focused)

#### **Core Facility Director:**

- Each core facility operates under the authority and guidance of a director, who is accountable for the safe, effective, and efficient operation of the facility and has supervisory responsibility for any administrative, technical or operations staff.
- Directors of Category 1&2 core facilities are normally appointed by, and report directly, to the VPRI, while directors of Category 3 core facilities are normally appointed by, and report directly, to the VPA-Dean.
  - The VPRI and VPA-Dean may delegate oversight or supervisory authority to the AVPRI-RFI, AVPRI-SIP, VD-TLUP, a Department Chair, or the Director of a research centre or institute, as appropriate, following consultation with the Steering Committee
- The Steering Committee may appoint co-directors for the management and operation of larger core facilities to ensure effective facility-level oversight, efficient management, and operational efficacy. The specific responsibilities of each co-director will be determined by the Steering Committee at the time of appointment, considering the nature of the facility and the complementarity of roles.
- Directors are accountable to their respective Category 1&2 or 3 core facility committees.
- Directors are responsible for ensuring:
  - researchers and/or educators have the facilities required to accomplish their work, and a healthy and safe workplace
  - all faculty are apprised of guidelines for core facility access, and of the availability of core facilities that they may need for their work
  - all grant and contract proposals include institutional costs of research, training, and facility fees for access to infrastructure through core facilities; and, in collaboration with the relevant governance committee, putting in place appropriate measures to support special cases where such costs may not be included, such as new researchers, unfunded research, and training
  - the safe, effective, and efficient operation of core facilities, including:
    - supervision of the staff required to manage and operate the equipment, services, and financial operations of the core facility



- training for all individuals who work with instruments and in the laboratories or other sites within shared facilities
- development of a five-year business plan that is updated annually and completely refreshed every five-years, including:
  - a facility management plan consistent with the business plan
  - a funding and operational model that accounts for the complete lifecycle of the core facility and if appropriate, allocates sufficient funds for repairs, upgrades, maintenance, and training
  - a revenue-generating or cost-recovery financial model based on diverse sources, such as:
    - equipment operating grants (e.g., CFI IOF)
    - personnel/operations grants (e.g., CFI MSI, Tri-Agency grants)
    - sponsorships/endowments
    - university support
    - user fees
  - an outline of actions to minimize required university support for core facilities.
    - the university recognizes that new core facilities may require time to develop a client base sufficient to sustain the facility through user fees; therefore, new core facilities may be subsidized while in start-up mode
    - for new core facilities, the plan for the transition from start-up to sustainable operations should be documented in the business plan for consideration and recommendation or approval by the relevant committee
- an annual budget is developed for consideration by the relevant core facility committee and approval by the Steering Committee<sup>1</sup>
- the budget is efficiently and effectively managed and accounted for
- strategic plans, risk and contingency plans, and human resource plans are developed
- appropriate, transparent, and equitable systems, procedures and processes for access and use, including with respect to availability, cost, and penalties for booking cancellations

### **Incentivizing the Creation of Campus Core Facilities**

- UTSC will seek to support existing and create new core facilities as circumstances require and allow
- UTSC will intentionally place new infrastructure within core facilities and privilege new infrastructure that is designated for a core facility when new resources become available. For example, at all the research and teaching and learning decision-making tables,

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<sup>1</sup> Templates for budget models and annual reports will be prepared by the Office of the Chief Administrative Office in collaboration with the Office of the Vice-Principal Research & Innovation.

infrastructure-related initiatives will be assessed through the lens of whether they support the advancement of core facilities at UTSC. These tables include strategic capital investments and the CRC/CFI Committees.

- As part of UTSC's budget planning and priorities process, the VPRI and VPAD may provide capital or operating funding to campus core facilities, considering the Strategic Plan's commitment to optimizing and investing in research infrastructure based on a culture of shared, collaborative, and synergistic use. This means that there will be a departure from the model of funding facilities that are to be used exclusively by only a single faculty member or department unless there is a strategic/operational plan, approved by the Chair/UTSC VPRI/VPAD, that justifies such an installation operating outside the model of shared core facilities.
- The UTSC OVPRI and VPAD, as applicable, will give an institutional-level profile, prominence and recognition to campus research/teaching and learning facilities, whether managed exclusively by UTSC or under the umbrella of institutional core facilities. This recognition and profile will extend to the leaders of these facilities and to the researchers, educators, and programs that use the infrastructure.

Questions regarding the *Guidelines for UTSC Core Facilities* can be directed to the UTSC OVPRI [researchoffice.utsc@utoronto.ca](mailto:researchoffice.utsc@utoronto.ca)

## Appendix 1

### The Institutional Core Research Facility Committee

A tri-campus U of T Institutional Core Facility Committee (ICFC) will be established. The ICFC will play both a strategic and operational role in coordinating the management of Institutional Core Facilities (ICF) across U of T's academic divisions and campuses, including:

- making strategic recommendations for long-term ICF planning
- providing guidance and support for improved operations
- reviewing annual reports and providing oversight
- reporting of the overall performance of ICFs to the IRLG, and to other appropriate stakeholder groups
- providing feedback and suggestions during the institutional planning process for CFI competitions.

#### **Membership:**

The Vice-President, Research & Innovation, and Strategic Initiatives (VPRI&SI) will select an ICFC Chair and provide administrative support for the needs of this Committee. A call for nominations to the ICFC will solicit expertise across disciplines and campuses, with representation from as many Divisions as possible, to help identify the broad research and training needs, reduce competition or redundancy created by similar facilities, and ensure equitable access by all Divisions. Additional members should include representation from TAHSN, Divisional Chief Administrative Officers, and Operations & Real Estate or Facilities Management.

#### **Scope:**

The ICFC will be involved in the following elements of any ICF:

##### *Approval:*

Review of applications submitted annually to become an "Institutional Core Facility". All applications will require Divisional support to be considered. Assessment of applications by the ICFC will include planning for major infrastructure needs of the institution over the ensuing 5 years including consideration of major new technologies and research areas, institutional, national, or global research priorities.

The ICFC will also consider existing facilities that are in the UofT network and determine the independent sustainability of each one. Towards this aim, applications will include a budget request but also a sustainability plan, for which the ICFC may support additional development before final consideration.

The criteria for ICF approval will be reviewed regularly by the ICFC to refine process based on foundational learnings and to address a continuously changing research/training and fiscal landscape. The ICFC will approve applications for ICF status and make recommendations to the University regarding any supplementary supports.

### *Level of support:*

At its onset, the ICFC will define supports that may be provided centrally for efficient operation and responsible management of any accepted ICF.

As there may be significant variability in the management and resource needs of facilities, the ICFC will determine for each ICF which supports are needed and could be provided centrally and, in discussion with the Divisions, which could be supported by the home Division and other Divisions that use the ICF.

A departmental chair or a centre or institute director may provide an operating grant to a core facility, sometimes to avoid having faculty pay a user fee when they use the facility for training purposes, and possibly to reduce the facility fees that are charged on an individual research project basis to members of the department.

Some of the central supports considered for ICFs may include University-wide subscriptions for software while others may require support for dedicated staff with appropriate training. Alternatively, some supports (i.e., pricing structures) may be developed centrally and shared with a network of facilities with similar functions but may not be designated ICFs. Where numerous similar supports are needed, these functions may be shared and provided centrally for a few ICFs through a dedicated management team. Some coordinated models for consideration include [UHN Research & Innovation Cores](#) and [National Research Council \(NRC\)](#). These may include but are not limited to:

- business planning and processes (invoices & payments; quotations for services; user fee structure; management software; booking software)
- communications/advertising/marketing including a centrally supported website
- identifying options for other support (including industry partners or philanthropic) for dedicated technical staff, equipment upgrades, training, or training initiatives within the ICF

### *Renewal:*

Review of an annual report submitted by each ICF. The reporting metrics will be determined by the ICFC and disclosed at the time of approval but will enable the ICFC to assess:

- self-sustainability status and projections
- level of usage by the U of T community to ensure it meets the definitional criteria for an ICF
- competition (local; national) that may need to be addressed to retain usage levels
- state of current infrastructure (i.e., assessments of remaining useful life and timeline for renewal/replacement)
- opportunities for growth/expansion and considerations of decommissioning/sunsetting

## Appendix 2 - List of Core Facilities

### A. UTSC’s Category 1 Core Facilities

<b>UTSC’s Category 1 Core Facilities</b>
North and South Campus Farmlands
<i>In development:</i> Initiatives emanating from the EaRTH “Environmental and Related Technologies Hub” Innovation District
<i>In development:</i> Initiatives emanating from the HEaRT “Health and Resilient Together” Innovation District
<i>In development:</i> Initiatives emanating from the Cultural Innovation District
<i>In development:</i> Centre for Inclusive Excellence in Innovation, Entrepreneurship, and Leadership (including campus led accelerators)
<i>In development:</i> National Academy of Inclusive Leadership

### B. U of T’s Category 2 Core Facilities (Including UTSC)

At U of T, there is a growing list of research facilities (**Category 2 facilities**) that are generally accessible to users from more than one academic unit. Few of these are currently recognized or marketed as **institutional core (research) facilities**, even though they exhibit most of the above-noted characteristics of an institutional core facility.

The following list demonstrates the range of research facilities that could be formalized under a U of T’s policy for institutional core facilities, and exemplifies the diverse origins and evolution of access to research and training infrastructure, including:

- large-scale research installations that were established as institutional core facilities at the time of inception
- research infrastructure that migrated from departmental, faculty or divisional management as demand for the infrastructure broadened to users beyond the host group, and are now profiled as institutional core facilities
- research facilities that are accessible to researchers across the university while still being managed within the budgetary authority of a single academic unit
- specialized research facilities created to meet the needs of a primary user base within a single research group are the responsibility of the related department/division, yet for which circumstances and/or policies evolved to open them up to use by a broader array of users

<b>U of T's Category 2 Core Facilities</b> Identified by a committee of Vice-Deans/Principals Research (UTSC facilities are highlighted)	
<b>Advanced Microscopy for Imaging Across Scales</b>	
<ul style="list-style-type: none"> <li>• Temerty Faculty of Medicine Microscopy Imaging Laboratory</li> <li>• Ontario Centre for the Characterization of Advanced Materials (OCCAM)</li> <li>• Microscopy in Chemistry (CNI)</li> <li>• Astronomy (Dunlap Institute telescopes/facilities), UTSC Observatory</li> <li>• <b>Centre for the Neurobiology of Stress (CNS) Microscopy Facility</b></li> <li>• UTM Imaging and Biocore Facility</li> <li>• Nanoscale Biomedical Imaging Facility (Titan Cryo-EM+ at SickKids)</li> <li>• Cell &amp; Systems Biology (CSB) Imaging Facility</li> <li>• Faculty of Dentistry Collaborative Advanced Microscopy (CAMiLoD)</li> </ul>	
<i>In development:</i>	
<ul style="list-style-type: none"> <li>• Eastern GTA Translational NeuroImaging Centre (ETNIC)</li> </ul>	
<b>Robotics for High-throughput Screening, Nano-fabrication, and Microfluidics</b>	
<ul style="list-style-type: none"> <li>• Nanofabrication and Microfluidics Facilities (CRAFT)</li> <li>• Chemical Analysis Facility (Analest Plus)</li> <li>• Accelerations Consortium</li> <li>• Toronto Nanofabrication Centre (TNFC)</li> <li>• BioZone Mass Spectrometry Facility (BioZone Mass Spec)</li> </ul>	
<i>In development:</i>	
<ul style="list-style-type: none"> <li>• UTM Robotics Makerspace (<i>projected for 2025</i>)</li> </ul>	
<b>High-Performance Analytics, Sequencing, and Testing Facilities to Support Research from Molecules to Populations, Structures, and Environments</b>	
<ul style="list-style-type: none"> <li>• Temerty Faculty of Medicine Flow Cytometry Facility</li> <li>• Donnelly Sequencing Centre</li> <li>• Structural Testing facility</li> <li>• <b>Teaching and Research in Analytical Chemical and Environmental Science (TRACES) Lab</b></li> <li>• <b>Environmental Nuclear Magnetic Resonance Centre</b></li> <li>• UTM NMR facility</li> <li>• Temerty Faculty of Medicine NMR Centre</li> </ul>	
<i>In development:</i>	
<ul style="list-style-type: none"> <li>• UTM Centre For Medicinal Chemistry (<i>projected for 2023</i>)</li> </ul>	
<b>Facilities for Precision Agriculture, Food Security, and Medicinal Plants</b>	
<ul style="list-style-type: none"> <li>• U of T Koffler Scientific Reserve at Jokers Hill</li> <li>• Greenhouse Facilities Across the Tri-campuses</li> <li>• Centre for the Analysis of Genome Evolution and Function (CAGEF)</li> </ul>	
<b>Infectious Diseases Laboratory to Support Emerging and Pandemic Infections Consortium (EPIC)</b>	
<ul style="list-style-type: none"> <li>• Combined Containment Level 3</li> <li>• Core Virology Lab</li> </ul>	



<b>Facilities for Advanced Models of Behaviour, Development, and Disease</b>
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| <ul style="list-style-type: none"> <li>• Comparative Medicine Research Facilities, and facilities across the Tri-campus</li> <li>• Vivaria and Aquatics Facilities Across the Tri-campus</li> </ul> |
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*Note: Numerous research areas rely on advanced computing infrastructure. Academic, Research, and Collaborative (ARC) facilities are not included here noting that those will, going forward, come under the coordinating auspices of the New Digital Research Infrastructure Organization ([NDRIO](#)).*

**C. UTSC’s Category 3 Core Facilities**

<b>UTSC’s Category 3 Core Facilities</b>
To be provided by the Dean’s Office