Instrument/Equipment Collaborative Core for Shared Access

University of Memphis

**Goal:** To promote research collaboration and improve instrument/equipment utilization by faculty, research scientists, and students, we propose the formulation of an Instrument/Equipment Collaborative Core for Shared Access (ICCShare).

**The Need of the Center**

Currently, the University of Memphis (UofM) has a center functioning similarly in terms of resources sharing but specialized in the area of microsopy and related, the Integrated Microscopy Center (IMC). IMC started in 1976 and provides electron microscopy instrumentation and services, fluorescence microscopy, histology and tissue culture services. Since 2013 equipment and services related to materials sciences and surface characterization are established.

Thanks to the rapid growth in technology, many more instrument and equipment purchased by research funds or other education-related funds are available on campus in different labs, with far more variety compared to the instrument/equipment in IMC. However, many of these instrument and equipment are not utilized to their optimized capacity. This is potentially due to limited publicity of these instrument, which substantially hinders collaborations among faculty members and effective training of our students, in addition to their limited usage. Because of this, leveraging the experience of IMC, we propose to formulate an Instrument/Equipment Collaborative Core for Shared Access (ICCShare) in an effort to maximize instrument/equipment usage, promote on-/off-campus collaborations, and provide more training opportunities to students and research scientists. In the following, we denote “instrument/equipment” as “research facilities”.

Usefulness of Core Research Facilities

Core research facilities are commodities present at many research universities and institutes where they contribute to the research mission of the University because they offer benefits increasing the productivity of investigators and their competitiveness toward funding. Some of the benefits of core research facilities include:

* Cost savings due to their sharing by many investigators, thereby preventing unnecessary duplication of specialized staff and costly instrumentation.
* Broadening access to state-of-the art equipment and technologies.
* Saving valuable investigators time by sparing them from learning how to operate highly specialized instruments and how to perform new technologies since experts in the core facility will perform these tasks on demand.
* Foster a collaborative environment by providing in a shared space resources crossing academic boundaries.
* Foster an interdisciplinary environment by providing resources crossing scientific disciplines.
* Provide investigators assistance from a scientific staff.

**Proposed Structure of ICCShare**

The general structure of ICCShare is composed a set of sub-cores under the umbrella of Division of Research and Innovation (Figure 1). ICCShare is equipment with core research facilities from different Colleges/Schools or Departments and each unit is a sub-core. ICCShare will be controlled by the Division of Research and Innovation.

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Instrument/Equipment Collaborative Core for Shared Access

Division of Research and Innovation

**Figure 1.** Structure of ICCShare.

Each sub-score has its own Faculty Director and/or one staff member.

Sub-Cores

CAS sub-cores

Sharable Core Research Facilities

Core research facilities provide investigators access to advanced instrumentation and technologies operated by experts. Core research facilities are an important resource at research intensive institutions. These core research facilities are shared research facilities with a University wide mission. That is, they are accessible to all investigators the Institution.

Core research facilities often function as recharge or service centers. Recharge centers use a billing rate to cover the cost of the service while service centers charge a fee to recover the cost of providing the good or service and annually charge more than $10,000 to federal awards (for more details on the definition of recharge and service centers see document BF4017 from the Office of the CEO). Basically, we propose to build this ICCShare as a combination of a recharge and service core, and it will provide internal services as well as be open to external users. ICCShare will be Core research facilities are typically funded by a combination of institutional funds and external grants. This funding can be supplemented by fees charged to users from outside companies or academic institutions.

In core research facilities, services as well as instrument/equipment usage and basic maintenance are provided by a Faculty Director or by a staff of experts who is overseen by a Faculty Director. The core facility staff and Director are accountable to the users and to the Division of Research and Innovation through periodical review.

Location of the Core Research Facilities

The core research facilities will not be consolidated but be kept in their current unit.

Selection of Core Research Facilities

Most commonly used instrument/equipment will be listed under the ICCShare with the agreement from the owner.

For instrument/equipment included to ICCShare,

1) external users will be charged for a service fee, and the revenue will split between the owner and the College/School.

2) College/School will cover the maintenance fee based on the number of instrument included in ICCShare.

3) Each College/School contributes a certain amount of fund to cover the operating cost.

4) Reduce instrument owner/Faculty Director (faculty who owns the instrument) teaching load.

Proposed Rules of Operation for UofM Core Research Facilities

The proposed rules of operation for UofM research core facility are based on a model in which these facilities will be housed in a Department or College/School as sub-cores with the ICCShare directly under the Division of Research and Innovation. Core facilities, whichever their academic hub, obtain the status of University Research Core Facility from the Division of Research and Innovation. Facilities with this status may have access to subsidies from the Division of Research of Innovationand must abide by a common set of rules of operation setup by the Division. These rules ensure that the facilities maintain high quality standards for their operation. Some core facilities may have additional operation rules addressing features unique their mission. Finally, the rules of operation proposed here are based on a model in which UofM core research facilities function as a recharge as well as service core.

* The staff of the Office for Research and Innovation will include a Deputy for Core Research Facilities. In addition, the Division of Research and Innovation may appoint a Committee for Core Facilities.
* A facility will be granted “University Research Core Facility” status after the review of a “Proposal for New Core Facility” by the Deputy for Core Facilities and/or the Committee for Core Facilities. Upon granting this status, the Deputy for Core Facility and/or the Committee for Core Facilities will outline specific rules and expectations for the new facility.
* Facilities granted University Core Facility status will abide by the rules of operation for UofM core facilities as outlined below and in document BF4017 and will be eligible for subsidies by the Division of Research and Innovation.
* The budget of University Core Facilities will be determined by the College/School or the Department housing the facility or by a combination of these academic units.
* The operation and finances of core research facilities will be supervised by a Faculty Director. If warranted by the size and scope of the facility, a Facility Coordinator will be needed to handle the day-to-day management of the facility. It is expected that the Faculty Director and/or Facility Coordinator will maintain an up-to-date database of users and financial operations.
* The Faculty Director and/or Facility Coordinator will regularly update the contact information and resource list in the database used by the Core Facilities Search Engine and website.
* The Faculty Director will lead or participate to the submission of equipment grant proposals.
* Core facilities will have a Faculty Advisory Committee. The Faculty Director will be an ad-hoc member of this committee while the Chair and other members of the committee will be users of the core facility. These will be appointed by the Deputy for Core Facilities in consultation with the Faculty Director and, if applicable, the College or Department housing the facility.
* The core facility advisory committee will meet yearly to review the activity of the facility and provide advice to the core facility Faculty Director.
* The Deputy for Core Facilities will conduct a yearly annual user survey for each Core Facility. Results of the survey will be provided to each Faculty Director.
* Core Facilities will submit an Annual Report to the Deputy for Core Facilities and/or the Committee for Core Facilities. The report will include: (1) a summary of financial activity, (2) a summary of activity and use, (3) the results of users survey, (4) the recommendation of the core facility advisory committee, (5) a plan to address user concerns as wells as the recommendations of the core facility advisory committee, and (6) an outline of strategic directions for the coming year.
* Upon review of the Annual Report, the Deputy for Core Facilities and/or the Committee for Core Facility will make recommendations to the Vice-President for Research and Innovation who will determine whether to renew the University Core Facility status and whether change need to occur in the subsidies the facility receives from the this Office.

Expertise of users operating the instrument: To lower operating cost, users are required to have the skills to use the equipment without training.