

High Performance Computing Collaboratory Operational Policies

This document details the formal operating policies of the High Performance Computing Collaboratory (HPC²). All additional MSU policies apply.

Administration

The HPC² infrastructure and operations fall under the oversight of an Operations Board (OpsBoard) comprised of the directors of the HPC² member centers and institutes. The Associate Vice President for Research, HPC² Director of High Performance Computing, and HPC² Director of Business Operations are ex-officio, non-voting members of the OpsBoard. The Chair of the OpsBoard and the Associate Vice President for Research serve as liaison to the university administration. The OpsBoard is responsible for operational policies, computing resource allocation, space allocation, and other general HPC²-related issues, and is the fundamental operations authority for common HPC² interests and facilities.

The HPC² is comprised of two offices to support the member centers and institutes: Business Office and Computing Office. The Business Office is responsible for processing and administering proposals, grants, contracts, accounts, personnel records, immigration issues, and other general business related matters. The HPC² Director of Business Operations, in consultation with the OpsBoard, directs the activities of the Business Office. The Computing Office is responsible for the design, maintenance, and operation of the high-performance and general computing resources of the HPC². Additionally, this office is responsible for the production of graphical and web-related materials, A/V support, general facilities maintenance, inventory management, and space allocation. The HPC² Director of High Performance Computing, in consultation with the OpsBoard, directs the activities of the Computing Office. The HPC² Director of Business Operations and the HPC² Director of High Performance Computing administratively report to the Associate Vice President for Research.

Success Metrics

The success of the HPC² is dependent upon the success of the individual centers/institutes. Therefore, to ensure the centers/institutes are measured uniformly, metrics have been established to be applied on a periodic basis. Centers/institutes will be evaluated every three (3) years and their membership in the HPC² will continue an additional three (3) years if the Vice President for Research deems the center/institute to be successful. If the unit is deemed unsuccessful, then its applicable programs and personnel may be assigned to existing successful HPC² centers/institutes within two (2) years. At the end of the two (2) year period, the unsuccessful center will no longer be an active member of the HPC².

The eight (8) success metrics for a member center/institute of the HPC² are:

- External reviews
- Scholarly production
- Proposals submitted through HPC²
- Retainage revenue generated
- Focus on HPC (computing, storage, networks, visualization)
- Academic ties
- Student involvement
- Multi-disciplinary, team-oriented research activities

To help ensure success of member centers/institutes, a center should already have demonstrated success in its research domain prior to admittance to the HPC².

Business Office

The HPC² Business Office provides the following services to Principal Investigators for proposals that are submitted through HPC² centers/institutes and/or are assigned HPC² org numbers:

1. Assistance with proposal preparation including budgets, required forms, uploading documents into appropriate submission websites, and coordinating submission with MSU's Sponsored Programs Administration (SPA) . Proposal submission policies of SPA, including submission deadlines, are compulsory.
2. Assistance with any contractual changes such as no-cost extensions, budget revisions, etc. along with setting up consulting agreements and subcontracts.
3. Maintenance of award for the entire performance period, including monthly reconciling, salary redistributions between projects, processing subcontract and consulting agreement payments, Time and Effort reporting, and Certification of Expenditures by a designated accountant.
4. Assistance with hiring Professional & Support Staff, Graduate Assistants, Intermittent and Student Workers. This includes, but not limited to:
 - Posting positions on the HRM website
 - Posting positions on bulletin board for H1B applications
 - Coordinating search committees (as appropriate)
 - Re-verifying I-9's
 - Scheduling orientation
 - Composing waiver letters
 - Reviewing and editing job descriptions
 - Requesting HPC2 computer accounts

5. Collection, reviews, and completion of appropriate work authorization document(s) for international employees including H1B, permanent residency petitions, and non-immigrant exchange visa programs applications.
6. Assistance to international staff and students on immigration and employment regulations, university procedures, and assist them with completing the appropriate immigration forms and letters in compliance with USCIS rules and regulations.
7. Assistance with DS2019 process.
8. Assistance to the Graduate Office and Graduate Admissions concerning the issuance of F1 Visas.
9. Assistance to Human Resource Management in gathering information, completing necessary forms, and typing letters for permanent residency.
10. Entry of leave data into Banner and assistance to employees with questions concerning leave.
11. Assistance with purchasing.
12. Processing of travel paperwork (international travel request forms, travel authorization & reimbursement forms, travel advance request forms, etc).
13. Assistance with event planning (as appropriate)

The HPC² affiliated centers/institutes follow the Division of Research policy and procedure on the distribution of recovered facilities and administrative costs (MSU OP 80.12). Additionally, the HPC² retains 28% of the Deans/Departments share after any Dean's retainage of the facilities and administrative costs distribution prior to any redistribution of any of the F&A funds. For non-F&A generating funding sources, the equivalent 28% HPC² retainage must be accounted for through an in-kind contribution (e.g., personnel, equipment, supplies) or other means agreed upon by the OpsBoard.

Computing

The HPC² maintains an extensive array of computing equipment in support of its research activities. This equipment includes large HPC systems, massive storage systems, state-of-the-art visualization systems, high-bandwidth network infrastructure, and numerous desktops and laptops. The use of the HPC² computing resources is not a matter of right, nor is it provided as a public forum, but rather all use of these resources must be consistent with the mission of the University and HPC² in support of education, research, and service. Furthermore, all users of HPC² resources have the responsibility to utilize these resources in an effective, efficient, ethical, and lawful manner. The use of any HPC² computing resource conveys implied consent of all HPC² policies, procedures, and guidelines, whether in written form or not.

Computer Accounts

All personnel funded via grants, contracts, and other monies administered by the HPC² are considered HPC²-affiliated employees and are eligible for an HPC² computer account. The

HPC² computer account provides the user with access to the HPC systems, storage resources, and the standard desktop infrastructure.

In support of the HPC²'s mission, computer accounts may be requested for contractors, collaborators, and other external entities – known as non-HPC² funded accounts. These non-HPC² funded accounts require sponsorship from an HPC²-affiliated faculty or staff member, and must have center/institute director approval. All non-HPC² account requests will be reviewed by the HPC² Director of High Performance Computing as well as the OpsBoard. Requests for non-HPC² accounts in support of activities that do not meet the HPC² mission will be denied.

Computer accounts are disabled and scheduled for deletion upon termination or separation of the user's association with the HPC². For terminating employees, separation of association occurs on the final day of actual work for the unit or the final day of employment with the university, whichever is sooner. Computer account extensions may be requested and will be granted on a case-by-case basis with the approval of the appropriate center/institute director and/or the OpsBoard.

Computer accounts may be disabled after 90 days of inactivity.

System Security and Integrity

The security and integrity of the HPC² computing systems and data is a priority for the organization. The HPC² utilizes multiple technologies to maintain a high level of security, including perimeter firewalls, internal firewalls, file/directory access controls, and several other data control/monitoring systems. Additionally, it is incumbent upon all users of the HPC² computing resources to maintain a high level of diligence with respect to security. Users must protect the resources under their control through the responsible use of secure passwords, reporting of incidents which may be the result of or result in a security compromise, and through the use of general common sense.

The Computing Office monitors the performance characteristics of most of its servers and network segments. This is done in order to provide more timely response to problems, as well as to plan for future needs. This monitoring may include, but is not limited to, system usage by individual users and groups, analyzing user data storage consumption, and reviewing network traffic. The Computing Office makes every effort to protect the privacy of user data, however, any data within the HPC² realm may be analyzed, viewed, or copied with just business cause.

Any activity conducted with the intent to evade established operational procedures, policies, or security protocols is strictly forbidden. All MSU policies regarding computer access must be adhered to, including the forbiddance of sharing passwords or computer accounts. The Computing Office may revoke user access or remove any device from the HPC² networks at any time in order to protect the integrity of the HPC² computing systems and data, with notification to the appropriate center/institute director as soon as possible.

Malicious software is a constant threat to the integrity of the HPC² IT environment. MSU policy mandates the installation of anti-virus software with updated threat databases on all personal computers connected to an MSU network. Additionally foreign software that is neither commercially available nor open source is high risk and prohibited on university-owned equipment. Requests for exceptions to the foreign software policy should be made through the Computing Office.

Procurement

All computing-related items must be purchased through the Computing Office, regardless of funding source or formal classification of the item as university equipment, with the exception of non-inventoriable external peripherals (e.g., external storage media, docking stations, mice, keyboards). These non-inventoriable external peripherals may be purchased through the standard university procurement methods. Monitors and printers must be purchased through the Computing Office.

The HPC² funds the procurement of desktop computers for graduate students assigned office/cubicle space within the HPC² facilities. The procurement of computers for faculty and staff is the responsibility of the associated center/institute.

Software packages to be utilized by all centers/institutes within the HPC² may be funded by the HPC², with OpsBoard approval. Software packages unique to an HPC² center/institute, or those not approved for funding by the HPC², will be funded from the associated center(s)/institute(s).

Technical Support

The Computing Office administers all HPC² computer systems. Users are not granted elevated user permissions (i.e., “root” or “administrator” accounts) on HPC² server and desktop computers. Exceptions may be made with cause for full-time employees with center/institute director approval. Users of laptop systems are given permission to an elevated privileges account (typically “administrator”) in order to facilitate remote operation, however, configuration changes and software installations are not allowed without approval from the Computing Office. Detailed information on this policy can be found in the *HPC² Elevated Privileges Policy* document.

The Computing Office does not support equipment that is either personally owned or assigned/inventoried to other departments. Instructions for basic tasks, such as printer or network configuration, are provided on the HPC² Intranet website. Any support issues with equipment, such as laptops, that are owned by other departments should be addressed to the support personnel for that department.

In general, software purchased with university funds may only be installed on university-owned systems and may not be installed on personally-owned systems. Furthermore, in general,

software procured through the HPC² may only be installed on HPC²-inventoried systems. Depending upon software licensing terms, there may be exceptions to these rules (e.g., anti-virus software, VPN software), but in no case should an exception be interpreted to include Computing Office support for non-HPC²-inventoried or personally-owned systems.

Data/Storage

The HPC² Computing Office provides regular tape backups of certain data repositories for disaster recovery purposes. Home directories, email, and certain other locations are backed up nightly. Center/institute data spaces (also referred as project space) are inherently backed up as part of the hierarchical file system design. Scratch, /data/lustre, local directories (e.g., /tmp, /var/tmp, or anything on C:\), and desktops/laptops are not backed up, and no data recovery is possible. A detailed listing of available file systems and their backup schemes are listed on the HPC² Intranet website.

For the non-hierarchical file system data, monthly archive backups are retained for no more than one year. Daily and Weekly backup tapes are recycled and are typically available for only a couple of months. Requests for data restores from tape should be submitted to the Help@HPC helpdesk system.

While the use of the HPC²'s central storage systems are not a requirement of the HPC², it may be a requirement of the associated centers/institutes. In any case, all users are strongly urged to store all data within the central storage systems, to insure proper data protection and business continuity.

The HPC² has established procedures for the control, storage, and usage of Export Controlled data. These procedures were developed in conjunction with the MSU Export Control Officer. However, prior to writing any Export Controlled data on an HPC² system, the user must notify the Computing Office so that appropriate control measures are configured. Additionally, all personnel requesting access to Export Controlled data must first be cleared for access by the MSU Export Control Officer.

All data stored on HPC² systems is the property of the HPC² and/or the center/institute for which the individual with custodianship of the data is employed or associated. As such, the center/institute director has authority for all data associated with their unit, and may request access or copies of said data at any time via written request to the Computing Office. Minor, incidental personal use is acceptable, in accordance with MSU policy. Upon termination of a user's computer account, that user's data may be provided to the user's supervisor or director upon written request to the Computing Office. Data stored on HPC² systems may not be transferred outside of the HPC² realm without approval from the appropriate authority (e.g., funding agency, center/institute director).

Networks

The HPC² operates an extensive computer network in support of the organization's research activities. Devices are connected to the appropriate network segments based on several factors, including type of system, elevated privileges model (admin-managed vs. user-managed), and security risk. Additional details on this policy may be found in the *HPC² Computer Network Policy* document.

Wireless access into the HPC² network is strictly controlled. No wireless access points (WAPs) or any other re-broadcasting devices may be connected to the HPC² network without prior approval from the Computing Office.

Facilities

The HPC² presently operates out of three physical facilities: the HPC building, the CAVS building, and the MSU Science and Technology Center (STC) at Stennis Space Center. The OpsBoard is the operational authority for the HPC building and the STC, while the CAVS director maintains operational authority for the CAVS building.

Office space within the HPC² facilities is available to center/institute affiliated faculty and staff in support of HPC²-sponsored activities. Priority for office assignments is given to senior personnel and personnel with no other MSU office assignments. The research productivity of the employee, degrees held, and office utilization will be used in the determination of the number of employees assigned to an office space. Decisions about office assignments will be made in conjunction with the center/institute director. Cubicle space is available for staff and students working on HPC²-sponsored activities, with priority given for staff and graduate students. Cubicle assignments for undergraduates will be made on an as-available-basis and will be revoked to fulfill staff and graduate student needs. Failure to utilize an office or cubicle space on a regular and consistent basis may result in reassignment of the space. In general, only Ph.D. faculty will be assigned to a single-person office.

The OpsBoard will conduct an annual review of space utilization of the HPC² facilities. This review will consist of a comparison of space utilization versus research productivity, including proposals submitted, grant/contract awards, time/effort paid from an account with an HPC² org number. Failure to yield acceptable research productivity may result in reassignment of the space.

Physical Security

Physical security is an important aspect of the day-to-day operation of the HPC² facilities due to the sensitive nature of much of the research conducted within the organization, as well as to enable the protection of the computing and test equipment, and to provide a secure environment for employees.

The HPC² employs the use of a unique badge to identify employees and for access to the facilities. HPC² badges are required for all personnel associated with the organization and must be worn at all times while within an HPC² facility. Badges are the property of the HPC² and must be returned upon separation from the organization.

Access to the general areas of the HPC and CAVS buildings is available to all employees of the HPC² on a 24x7 basis via the employee's HPC² badge. Access to controlled areas of the facilities will be granted on an as-needed basis and with the approval of the facility authority.

Facility doors are not to be propped open, and unknown personnel without an HPC² badge should not be allowed into the facilities.

Visitors

Visitors to HPC² facilities are required to register with the facility receptionist. The visitor's sponsor is responsible for the actions of the visitor.

Safety

The safety of employees, visitors, and any other occupants of HPC² facilities is of the utmost priority. With fire as a major concern, candles or any other devices that produce open flames or significant heat are prohibited.

The Computing Office or facility administration must be immediately notified of any safety hazard discovered, and for any and all reported emergencies to 911 or any other emergency response entity.

Conference and Meeting Rooms

The HPC² has numerous conference and meeting rooms available for HPC²-related activities. Use of these rooms requires prior reservation through the facility administration. Utilization of these rooms by non-HPC² entities requires approval from the facility authority.

Property Control

The HPC² maintains a significant inventory of equipment, both in terms of quantity and cost. Positive control of all HPC² equipment is necessary to meet the property control and audit requirements of the university.

The relocation of HPC² non-IT equipment is not permitted without the express approval of the HPC² Property Coordinator. The relocation of HPC² IT equipment is not permitted without the express approval of the HPC² Property Coordinator or Computing Systems Manager.

The issuance of a hand receipt is required for any equipment that is removed from an HPC² facility. Additionally, a hand receipt is required for any inventoried item that is assigned to an

HPC² employee and is portable, as determined by the Property Coordinator. Hand receipts may only be issued by the HPC² Property Coordinator.

Publishing

The HPC² Publishing Group provides a large array of services to the HPC² centers/institutes, including graphic design, copywriting, printing services, video/audio production, and web design. For many of the HPC²-sponsored activities, these services are provided at no cost to the center/institute. The use of external publishing contractors must be coordinated with the HPC² Publishing Group. Any costs incurred through the use of external contractors are the responsibility of the center/institute.

The HPC² Publishing Group services and products include, but are not limited to:

- brochures, reports, folders
- flyers, handouts, newsletters
- signs, plaques, announcements
- business cards, stationery
- large format posters, banners
- logo design
- technical drawings
- special items, calendars
- exhibits, displays
- name badges
- audio and video production
- web design
- media relations, press releases

Print materials, web sites, and A/V products must include the HPC² logo or other approved reference to the HPC². Stationery packages that include business cards, letterhead, and envelopes will be of a common design and pre-approved by the OpsBoard. All developed material must meet University identity standards as they pertain to logo use and must be produced according to legal specifications relating to anti-discriminatory statements.

The Publishing Group requires adequate lead time for all service requests. While it is understood that the completion time for products or services will vary due to the complexity of the request and prioritization among other requests, the following is meant as a general guideline for turn-around times on requests:

- business cards: 2 weeks (a limited number of temporary cards can be produced in-house while the formal cards are being processed)
- print material produced in-house: 1-2 weeks

- print material produced at commercial printing companies: 6 weeks
- large format posters: 5-7 days
- A/V production and editing: 2-4 weeks

The Publishing Group serves as liaison for the HPC² centers/institutes to MSU University Relations and other campus public relations units. The Publishing Group should be included in any interactions with these units or any other news media outlets.