

COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY

**MULTI-USER RESEARCH CORE FACILITIES
AND
RESEARCH SUPPORT SERVICES**

POLICIES AND PROCEDURES



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B. INTRODUCTION

The multi-user core research laboratories and facilities and research support services at Jackson State University (JSU) were established to provide researchers with the necessary resources including equipment, technologies, and support functions to enhance research capabilities.

The Research Centers for Minority Institutions' (RCMI) Center- for Environmental Health at Jackson State University has provided funds to establish facilities at JSU. The Center initially focused on research and infrastructure development in the area of environmental health. Over time, the research center evolved as a "Center for Excellence" in the integration and application of environmental science concepts, methods and strategies for conducting interdisciplinary environmental health research. Research currently focuses on the understanding of the basic mechanisms by which toxic substances compromise health.

The Center houses the following six laboratories: 1) Analytical Core Laboratory, 2) Animal Core Facility, 3) Biostatistical Support Unit, 4) Environmental Toxicology Research Laboratory, 5) Molecular and Cellular Biology Core Laboratory, and 6) Molecular Magnetic Resonance Core Laboratory. The Computational Modelling Core Laboratory/Supercomputer Center, Cellomics and Toxicogenomics Research Laboratory; The Visualization Core Laboratory, and GIS Remote Core Laboratories are supported by other grants.

Several support services have played a significant role in our research productivity. These offices are Sponsored Programs, Facilities Management, Information Systems, and Visualization Core Laboratory / GIS Remote Core Laboratories Printing Services.

The researchers and students, both graduate and undergraduate, are engaged in cutting edge research in various disciplines which have transformed the research atmosphere of Jackson State University. We invite you to use the core facilities in your research endeavors.

C. MULTI-USER CORE FACILITIES AND INSTRUMENTATION

Several multi-user research core facilities with state-of-the-art equipment have been established in the College of Science, Engineering, and Technology (CSET). These facilities provide faculty with the resources to conduct competitive research. The core facilities and instrumentation within the facilities are:

The Analytical Core Laboratory

Supported by: National Institutes of Health-NCRR-RCMI

Location: Room 521, John A. Peoples Building

Instrumentation

- GC-MS (Gas Chromatography/Mass Spectrometer), Hewlett Packard Model 6890/5973
- UV-VIS (Ultra Violet-Visible) Spectrometer, Varian, Model Cary 3E
- Spectrofluorometer, Instruments S.A. Model FluoroMax-2
- Spectrometer, Thermo Jarrell Ash Model AA-Scan 4-AA (Atomic Absorption), Shimadzu AA6701F
- GC/ECD (Gas Chromatograph/Electron Capture Detector), Shimadzu Model 17A
- Raman Spectrometer, Spex Model
- Bio UV-Vis Spectrometer, Varian Model Cary 300
- HPLC, Hewlett Packard Model 1100 with UV absorption and fluorescence detectors
- FT-IR Spectrometer/Auto Image System, Nicolet Model Nexus 670
- LC/MS/MS System, Finnigan MAT Model Duo 10000
- LCQ DECA/ESI Bundel, Finnigan with an LCQ NANO Spray Ion Source (CE/MS)
- Protein Separation and Purification System

The Animal Core Facility

Supported by: National Institutes of Health-NCRR-RCMI

Locations: 1) Room 401, John A. Peoples Building;

2) Dollye M. E. Robinson School of Liberal Arts Building, Basement

- **Animal Housing Areas**
- **Surgical Support Space**
- **Animal Husbandry Support Areas**
- **Cages**
- **Cage Washing Areas**
- **Preparation Room**
- **Racks**
- **Water Bottles**
- **Storage areas for food and bedding**
- **Full-time husbandry and animal care staff**

Both locations are visited regularly by IACUC and have been found to be in accordance with the Guide and PHS Policy on Humane Care and Use of Laboratory Animals. The 392 square foot Animal Core Facility is partitioned into three areas: (1) housing for rats; (2) housing for mice, and (3) a cage washing and preparation area. For weekly cleaning, chemical sterilizing agents are used. Functional areas include storage areas for chemicals and feed/bedding.

The other animal facility which exists in the Liberal Arts Building, is a 1600 square feet facility which contains three 10' x 12' animal holding rooms, a dedicated enrichment room, a cage washing room, a designated medical treatment room, a dedicated food storage and preparation room, and two large laboratories.

The Computational Modeling Core Laboratory/Supercomputer Center

Supported by: U.S. Department of Army

Locations: Room 108 & 120-B, John A. Peoples Building

System Equipment

- Computational Modeling Core Laboratory/Supercomputer Center of the Army High Performance Computing Research Center (AHPCRC) facilities at JSU include a computer laboratory consisting of NT workstations, an IBM RS/6000 SP, and a CRAY SV1ex. In addition, JSU AHPCRC researchers have direct access to other AHPCRC resources including a CRAY T3E-1200E and other IBM RS/6000 SPs.
- The CRAY SV1ex is a vector parallel supercomputer with 16 CPUs, 32 GB of shared memory, and 32 GB of SSD. It has a rated peak performance of 192 GigaFLOPS, and 1000 GB of disk storage. The maximum sustained bandwidth of a single processor to memory is 2.5 GB/s. Groups of four processors can be configured as multi-streaming processors (MSPs).
- The IBM RS/6000 SP consists of 21 nodes with 16 nodes configured with 512MB memory, 4 nodes with 1024MB memory, and 1 node with 2048MB memory. There is a total of 292 GB of disk storage. It has a performance of 15 GigaFLOPS.
- The Beowulf Linux Cluster runs linux 7.3. It consists of 21 nodes with one ad head node. There are 4 large memory nodes @ 4GB each. There are 16 small memory nodes at 1GB each. Each machine has a dual processor (2 cpu's) at 800Mhz. The head node has a single 733Mhz cpu. Each node has a 3GB hard disk.
- SGI 2100 running irix 6.5.17m with four 350 Mhz IP27 processors, 2 GB memory and 24GB disk space.
- Two SGI Power Challenges running irix 6.5.17m, six 75 Mhz IP21 processors, 512 MB memory, 28GB disk space.

The Bio-statistical Support Unit

Supported by: National Institutes of Health-NCRR-RCMI

Location: Room 256, Just Science Hall

Instrumentation/Software

- Three Personal Computers
- Laser Printer
- SAS/STAT: a wide range of statistical applications for data analysis and estimation
- SAS/IML: a multi-level interactive programming language whose elements are matrices
- SAS/FSP: an interactive menu-driven facilities for data entry, retrieval, and editing
- SAS/GRAPH: a device intelligent color graphics
- SAS/GIS: an interactive geographic information System
- SAS/TUTOR: for online training of SAS System users
- SAS/ASSIST: a menu-driven user interface to the SAS System

The Cellomics and Toxicogenomics Research Laboratory¹

Supported by: National Institutes of Health

Location: Room 405, John A. Peoples Building

Instrumentation

- Becton Dickinson Fluorescence Activated Cell Sorting System (FACS Vantage)
- Phosphoimager System
- Affymetrix Gene Array Scanner
- Affymetrix GeneChip Fluidics Station 400
- Affymetrix GeneChip Hybridization Oven

The Environmental Toxicology Research Laboratory

Supported by: National Institutes of Health-NCRR-RCMI

Location: Room 424, John A. Peoples Building

Instrumentation

- Optima XL-100K Ultracentrifuge (Beckman)
- Tri-Carb 2700 TR Liquid Scintillation Analyzer (Packard)
- UltraViolet-Visible (UV/Vis) Lambda 20 Spectrometer (Perkin Elmer)
- MSP 1000 Microwave Sample Preparation System (CEM)

- Inductively Coupled Plasma Spectrometer (Perkin Elmer)
- Gas Chromatograph/Electron Capture Detector- Mass spectrometer GC-MS (Hewlett Packard)
- Tissue Embedding Center (Triangle Biomedical Sciences)
- Tissue Processor (Triangle Biomedical Sciences)
- TBS Microtome (Olympus)
- Fluoroscan Microplate Reader (Biosystems)
- Tabletop centrifuge (Beckman)

The Molecular and Cellular Biology Core Laboratory

Supported by: National Institutes of Health-NCRR-RCMI

Location: Room 416, John A. Peoples Building

Instrumentation

- Automatic Environmental Speed Vac System (SAVANT)*
- Freeze Drying System with glassware (SAVANT)*
- Crucify Liquid Nitrogen Tank (CRUCIFY)*
- Nucleovision 760 Imaging Workstation (Gel Documentation System & Computer) (Nuclotech)*
- Nucleic Acid Sequencing System & Accessories (BIO RAD)*
- Mastercycler Gradient Thermocycler (EPPENDORF SCIENTIFIC)*
- Kodak X-M35 Automatic Processor (MID-SOUTH)*
- Biosafety Cabinet with UV (FORMA)
- Stratalinker 1800 UV Crosslinker (STRATAGENE)
- Gel Dryer (BIO RAD)
- Power Plus Upright Freezer (FORMA)
- Macintosh Power PC with Monitor & Printer (APPLE)
- Water Baths (VWR)
- UV Spectrophotometer (VARIAN)
- Refrigerator (4°C glass door) (FISHER)
- Microwave (GOLDSTAR)
- Incubator/oven (NAPCO)
- Ice Maker (VWR)

- Tissue Homogenizer (OMNI)

For some of the instruments purchased for the Molecular and Cellular Biology Core Laboratory, the user must sign in and out on that particular instrument for maintenance and calibration. It is essential to keep a record of the experimental runs to ensure that the instruments are functioning properly and to detect fault or damage. The instruments are labeled with an asterisk (*). Attachments and cuvettes are available for the UV spectrophotometers located in Rooms 424 and 529. The Kodak X-M35 Automatic Processor is located in the dark room, Room 419. The tissue homogenizer is located in Room 305.

The Molecular Magnetic Resonance Core Laboratory

Supported by: National Institutes of Health-NCRR-RCMI

Locations: Rooms 101 & 102, John A. Peoples Building

Instrumentation

- Bruker 250 NMR Spectrometer
- Bruker 300 NMR Spectrometer
- GN 300 NMR Spectrometer
- Bruker EMX EPR NMR Spectrometer

Visualization Core Laboratory

Supported by: U.S. Department of Navy

Location: Old Industrial Art Building

Equipment

- Fakespace Reconfigurable Advanced Visualization Equipment (RAVE); SGI Onyx 3200 server; SGI Octane server; seven SGI O2 workstations

Software

- Visualization software (CAVE Library, VR Juggler, MultiGen Creator, MultiGen Vega, Access Grid Toolkit, Alias/Wavefront Maya)

GIS Remote Core Laboratories

Supported by: U.S. Department of Navy

Location: Old Industrial Art Building

Equipment

- Digital Scanners; Color/B&W plotters; PCs and workstations; Virtual Network Computing; Multiprocessor Sun servers

Software

- Image processing (Erdas, Envi, etc.); GIS software (Arc/Info, ArcView, ArcMap, etc.); RDBMS products; multiple operating systems (Windows, UNIX and LINUX)

II. INFRASTRUCTURE AND ESTABLISHMENT OF CORE FACILITIES

A. SPECIFIC AIMS

The specific aims of the multi-user research core facilities are:

- to provide a research environment that will foster the scientific endeavors of our current faculty and to aid in the recruitment of new faculty and doctoral students in the areas of biomedical, chemical, and environmental as well as public health education.
- to provide state-of-the-art instrumentation for all investigators, including faculty, technical personnel, and students.
- to enhance research capabilities in diverse areas of analytical chemistry such as detection of contaminants, qualitative and quantitative measurements of fluorescence from biological samples, and determination of organic and inorganic compounds.
- to continue to provide a core animal facility with proper air ventilation, with the appropriate number of air exchanges, temperature and humidity controls to house experimental animals, and prevent odors in areas adjacent to the room.
- to conduct computational science research by developing new engineering application software and solve scientific and engineering problems in the areas of defense technology of importance to the Army and the Department of Defense.
- to provide bio-statistical support in all aspects of research from initial planning and designing of experiments to actual data analysis and interpretation of results.

- to provide instrumentation as well as technical and professional assistance for performing laser-based flow cytometric analysis and cell sorting.
- to enhance our research capabilities in the fields of environmental toxicology, environmental epidemiology and health-risk assessment.
- to enhance our research capabilities in the fields of molecular biology and recombinant DNA technologies.
- to enhance research capabilities in the area of magnetic resonance.
- to provide a consistent and reliable means to produce and share geospatial and visualized data among all users which would lead to enhanced management and use of data as well as expanded research results.
- to establish collaborations among faculty and scientists from a significant number of institutions of higher learning within the state of Mississippi.
- to strengthen opportunities for faculty development, facility access, equipment needs and technology transfer.
- to support a wide range of research in various disciplines in hopes of providing investigators, faculty, staff, students, and the research community with the necessary resources to conduct competitive cutting edge research within the College of Science, Engineering and Technology at Jackson State University.

B. PERSONNEL

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C. MANAGEMENT OF THE MULTI-USER RESEARCH CORE FACILITIES

The laboratory managers oversee the facilities and assist the investigators in their research endeavors. The laboratory managers and technicians provide:

Training:

- regular training sessions,
- workshops on new techniques and technologies, and

- assistance to principal investigators and other research personnel etc., faculty members, technicians, and students in the College of Science, Engineering and Technology.

Maintenance:

- maintain and monitor all instruments weekly to ensure that they function properly,
- check each log book at least once a week for usage and maintenance concerns, and
- monitor areas and instruments for radioactive contamination.

Each user must be properly trained on the specific equipment they intend to use. If the user is not familiar with the operation of the equipment, he/she must attend training sessions and obtain approval from the laboratory manager or technician before operating the equipment (see [Service/Use of Facility Request Form](#)). The users must be certified on an annual basis.

D. OPERATIONAL HOURS AND SECURITY OF THE CORE FACILITIES

The multi-user research core facilities are open from 8:00 a.m. - 5:00 p.m., Monday through Friday with a full-time technician available. The Animal Core Facility is scheduled to operate 24 hours per day, 365 days per year, less periods of scheduled preventive maintenance (approximately 20 hours per month). The multi-user research core facilities contain expensive state-of-the-art equipment, therefore security is essential and is of the utmost concern. The facilities are secured by automatic lock systems. To enter a facility, a card key must be used. Once an individual exits the facility and closes the door, the door will lock behind that individual automatically. An investigator who wishes to use the equipment in the core facilities after hours needs to apply for a temporary pass (see [Temporary Pass Request Form](#)) prior to use. The rules for obtaining a temporary pass are as follows:

1. The investigator needs to fill out a temporary pass form for the facility of choice. The form can be obtained from either the faculty manager or technician.
2. The temporary passes can be checked out for a maximum of one week. If the passes are checked out for one week, they must be returned within the allotted time period.
3. The facility laboratory technician must be informed by any investigator/designee who wishes to use the facility after hours.
4. Only those individuals who have been given permission to use the facility after 5:00 P.M. are allowed in the facility and are responsible for any damages that may occur during their access to the facility.

E. RESPONSIBILITIES OF USERS

The multi-user research core facilities are the foundation of infrastructure for the College of Science, Engineering and Technology at Jackson State University. Rules and regulations relating to the use of these facilities exist to provide for efficient operations, and the safety

of individuals using the facility. It is the responsibility of each user to abide by these rules. All users must conduct their research in accordance with the policies stated below:

1. Policies

- Each user must sign the log book upon entering and exiting each facility.
- For all major instruments, the user must sign the log book for that specific instrument to record usage as well as to keep a record for the purpose of maintenance (some equipment must be calibrated after a specific number of runs).
- Each user must receive prior instruction in using all major instruments. If the user does not know how to use the instrument, he/she must ask the technician or manager before attempting to perform experiments to avoid damage to instruments. To receive instruction sessions, the user needs to submit a [Service/Use of Facility Request Form](#) which is available from the laboratory manager or technician.
- Each user is expected to clean the equipment and work station after each use.
- If the instrument is not working properly before, during or after the run, the user must notify the lab technician of the problem immediately.
- No food or beverage should be brought into the facilities. **Eating, Smoking and Drinking are strictly prohibited.**
- **Food or beverage** must not be stored in freezers or refrigerators in the facilities.
- Be aware of areas designated for radioactive materials.
- Each user must notify the lab technician and radiation safety officer in advance prior to using radioactive materials in the facilities.
- All users must provide their own supplies (glassware, centrifuge tubes, tips, pipers, paper products, etc.)
- Mouth pipetting is strictly forbidden. Aspirating bulbs and mechanical devices are available for this purpose.
- Broken glassware and sharp instruments such as syringe needles, scalpels, blades, etc. must be placed in specially marked **SHARPS** containers.
- Operations involving the use of toxic, flammable, carcinogenic, and biological materials should be conducted in a properly operating hood or biological safety cabinet.
- Appropriate protective clothing and eye protection glasses should be worn.
- Users must follow all rules and regulations set forth in the Jackson State University Safety Procedural Manual.
- Some experiments require consumable supplies (gas, fuel, liquid nitrogen, etc.). If you plan to use instruments requiring these supplies, please inform the facility manager or technician one week in advance in order to make sure these consumables are available.
- Report immediately any malfunction or problems with any instrument. Do not try to fix a problem. This will void the manufacturer's warranty.
- All investigators who would like to store samples, enzymes or other materials in the Plus Upright Freezer, Liquid Nitrogen Tank or the refrigerator (Room 416 in the MCB Core Facility) must record such samples, enzymes, and other materials in the core facility log book prior to storage.

2. **The Cellomics and Toxicogenomics Research Laboratory**

The Cellomics and Toxicogenomics Research Laboratory at Jackson State University constitutes one of the major biomedical core facilities that are being developed as part of the Mississippi Functional Genomics Network. This facility is therefore one of the multiuser biomedical research infrastructures in the State of Mississippi.

a. Current Capabilities

In an effort to create and maintain a respectable presence in mainstream biomedical research, the Cellomics and Toxicogenomics Research Laboratory will serve a cross section of investigators across the State. One major piece of research equipment available at this facility is the Becton Dickinson Fluorescence Activated Cell Sorting System (FACS Vantage). Flow cytometry technology has become an indispensable research tool for investigating virtually all of the molecular and cellular mechanisms that regulate our biology and physiology. The principle of operation involves exposure of cells to specialized fluorescent probes, as they are introduced into a rapidly moving stream. The cells are then directed one at a time, through a highly focused laser beam. Depending on the nature of the fluorescent probes used, and the manner in which each cell interacts and scatters light while in the path of the laser beam, in depth information concerning cell structure, proliferative capability, metabolic status, and genetic lineage can be obtained.

In addition to the FACS Vantage, the Cellomics and Toxicogenomics Research Laboratory will also be equipped with a phosphoimager system and an Agilent Gene Array Scanner. The phosphoimager system will be used by various biomedical investigators in research involving the use, detection, and quantification of radio-labeled materials. Phosphoimaging presents several advantages over the traditional autoradiographic technology. Phosphoimagers possess greater sensitivity, greater dynamic range, ease of data acquisition and manuscript preparation, greater safety, and reduced environmental concerns.

The Affymetrix Technologies Gene Array scanner is a bench-top laser scanning instrument designed to read Affymetrix Gene Chip® probe arrays. The scanner measures the intensity of fluorescence of labeled sample nucleic acid (DNA and RNA) bound to GeneChip probe arrays. It is designed with the ability to focus the laser to a spot size of less than 4 microns. This precision allows you to scan probe arrays with probe cells as small as 20 microns, so that a high density and diversity of probes can be synthesized on GeneChip arrays.

b. Applications

The specific applications of the FACS technology to our biomedical research endeavors will include apoptosis studies by characterizing functional/biochemical changes (rise in

free calcium, bcl2/BAX interaction, cell dehydration, loss of mitochondrial membrane potential, proteolysis, phosphatidylserine externalization, DNA denaturation, intra nucleosomal cleavage and protein crosslinking) in studied cells; analysis of cellular metabolism including changes in intracellular calcium levels, cellular pH, and changes in membrane potential; assessment of DNA content, DNA degradation and/or DNA synthesis; genomics analysis; drug and cytotoxicity studies; as well as cell sorting and analysis. Typically flow cytometry analyzers such as the FACS Vantage can monitor simultaneously up to six different cellular characteristics in addition to cell sorting capabilities.

The Affymetrix Gene Array System can be used to study the molecular and cellular mechanisms that regulate our biology and physiology, apoptosis mechanisms, characterization of functional/biochemical effects, analysis of cellular metabolism, assessment of DNA degradation and/ or DNA synthesis such as genomics analysis, drug and cytotoxicity studies and studies in polymorphism of gene alleles.

3. The Computational Modeling Core Laboratory/Supercomputer Center

The Computational Modeling Core Laboratory/Supercomputer Center is supported in part by the Army High-Performance Computing Research Center (AHPCRC). The AHPCRC research collaboration on high-performance computing in scientific areas of interest to the U.S. Army. There are three major areas of the AHPCR research at Jackson State University: Computational Chemistry, Biomathematical Modeling, and Computational Fluid Dynamics.

a. AIS Equipment and Operational Environment

The operational Automated Information System (AIS) equipment is an IBM RS/6000-SP, Cray SVIEX, Beowulf Linux Cluster and peripheral equipment. The United States Army holds title to the AIS. The AIS is operated by Network Computing Services, Inc. (NetworkCS) under Army HPC Research Center prime contract DAAH04-95-C-0008. The AIS is a multi-user system used by researchers of the Army HPC Research Center to develop new engineering application software and to solve unclassified scientific and engineering problems. The AIS are installed in the John A. Peoples Building, Rooms #108 and #120-B. The AIS is scheduled to operate 24 hours per day, 365 days per year, less periods of scheduled preventive maintenance (approximately 20 hours per month).

The Director of Technical Services is responsible for the overall physical and environmental security of the NetworkCS building and computing facility and personnel safety. The Terminal Area Security Officer (TASO) is responsible for local system support, local system security, and for monitoring the overall environment for unauthorized activity.

b. Sensitivity, Protection, Requirements, Security Mode, and Minimum Trusted Class

Sensitivity Designation

The AIS covered under this accreditation processes unclassified non-sensitive scientific and engineering software and data.

Protection Requirements

The AIS requires protection to ensure data integrity and system availability.

Security Mode

These AIS operates in an unclassified non-sensitive security mode.

c. User Identification and Authentication

General. Each user is provided a unique user account name. The account name provides a mechanism for identifying a user to the system for authentication, determination of access privileges and auditing. Users are allowed to change their passwords at their convenience. Passwords must be at least seven characters long with at least one non-alphanumeric character.

Prior to logon, the user is presented with a warning banner regarding authorized usage of the AIS and consenting to monitoring of user's activity on the system. An option is presented following the banner whereby the user can halt the logon process if he/she does not agree with the terms stated in the warning banner.

Upon logon, the system will automatically display to the user the date, time and originating location of the last successful logon. Passwords are encrypted when stored on the AIS.

SecurID. Authentication for access to AIS equipment requires the use of a physical access token. The physical access token is the SecurID Card made by Security Dynamics Incorporated (SDI). A user must possess a valid SecurID Card in order to access AIS equipment. (Note that this is in addition to authentication with the user password.) The physical access token ensures that access to AIS equipment is not possible if the user's password is compromised. The SecurID Card is not required if the user is logging in at the console of a machine within the physically secured AHPCRC facility.

Kerberos. Kerberos is implemented on the AIS. Procedures related to the installation and use of Kerberos can be found at <https://admin.ahpcrc.org/Manual/krb5.html>.

d. Continuity of Operations Plan

The Army HPC Research Center is equipped with fire and smoke alarms, which are tested on a scheduled basis and a ceiling, dry pipe water extinguishing system. The facility has a power booster generator to provide reliable backup power supply, for all practical purposes, eliminating the possibility of downtime due to storm-induced power outages. The backup facility for JSU is the AHPCRC facilities located at Florida A&M, Clark Atlanta, or Howard Universities. Backup copies of system and application software are maintained across campus in the Charles F. Moore Building on the 1st floor in their data vault and also at NetworkCS. The file servers are in Minnesota and backup copies are maintained in accordance with the NetworkCS SPP. On the 1st of every month, a spdata node backup is performed. On the 4th, 11th, 19th and 26th day of each month, a cws.mkysyb backup is performed. The naming convention for the tapes is as follows: date system name subsystem name, i.e., 02/01/99 spcws.JSU spdata. Backup tapes are stored off site. Users are responsible for backing up their own critical libraries and data sets located in scratch work directories.

4. Visualization Core Laboratory / GIS Remote Core Laboratories

The Visualization Core Laboratory / GIS Remote Core Laboratories were established to bond existing capabilities and talents in the areas of Geographic Information Systems (GIS), Remote Sensing (RS) and Scientific Visualization (Sci-Viz) and co-locate them in a centralized facility. This created an infrastructure of technology, data, people and institutional linkages that enables the discovery, evaluation and application of geospatial and visual data for adding value to research across various areas and disciplines.

The GIS/RS laboratories support the development, enhancement and transfer of GIS/RS applications, make geospatial data available and accessible, and promote research and development innovation among users. The Sci-Viz laboratory supports the need of scientists and researchers relative to modeling, program application development and production of high quality advanced visualizations for all fields or disciplines. The TLGVRC addresses human resource development to ensure a skilled workforce which is vital for sustenance of any high level technology activity.

The goal of the TLGVRC is to provide a consistent and reliable means to produce and share geospatial and visualized data among all users which would lead to enhanced management and use of data as well as expanded research results. The key objectives are: to improve planning, analysis and decision-making through wide availability of geospatial visualized data and applications; to ensure that end users are able to acquire reliable data sets and detailed visualizations; and to increase the number of qualified professionals in GIS, RS, Scientific Visualization and related fields.

The TLGVRC aims at training, service, and research support in all science-related disciplines. The specific areas include:

Geographic Information Systems/Remote Sensing - Digitization and data conversions; GIS application development; automated mapping; image processing; space mapping; RS applications in natural and environment resource management; spatial analysis; database development; application modules design; statistical modeling; integration of diverse data and modeling.

Scientific Visualization - Development and enhancement of visualization tools and techniques; program applications development; advanced visualization production; customized software solutions; scientific modeling.

Training - GIS/RS systems development, integration and implementation; interdisciplinary methodologies; visualization applications.

5. The Use of Research Animals

a. User Responsibilities

Provisions for training and/or instruction available for scientists, animal technicians, and other personnel involved in animal care, treatment, or use are as listed below:

- Review of video tapes emphasizing housing, feeding, and handling of rodents.
- Review of reference material on Laboratory Animal Welfare including journal articles, conference/symposia proceedings, books, and government documents housed and readily available from the MBRS Program Office at JSU.
- Investigators, animal caretakers, and selected technicians will attend periodic workshops on the humane care and use of laboratory animals.
- To minimize the number of animals needed for experimentation, several alternative methods are utilized and strongly recommended by the IACUC. Specifically, alternative methods include mathematical modeling, computer simulation, and biological systems simulated testing. Specialty skills development workshops are periodically conducted on site at Jackson State University for scientists, technicians, and students.
- **Eating, Drinking, and Smoking** is strictly prohibited in the facilities; therefore, these activities must take place in designated outdoor areas.
- Shoes and lab coats must be worn at all times. Gloves and masks should also be worn.
- Written guidelines for appropriate care of bites, scratches, or other animal-inflicted wounds shall be posted in a prominent area in the animal facility.
- All biohazards and chemical hazards must be clearly identified and marked.
- Personnel training is documented and tracked via certificates and sign-in sheets for various mandatory classes and workshops.

b. **Occupational Health and Safety Program**

The health program for personnel who work in laboratory animal facilities or have frequent contact with animals is part of a university wide effort. The Department of Safety includes Risk Management and Assessment, Occupational Safety and Health, Insurance and Radiation Safety offices. The institution maintains a Safety Manual which complies with Occupational Health and Safety in the Care and Use of Research Animals.

- If a hazardous agent is proposed, protocols are referred to the Institutional Biosafety Committee. The appropriate control measures are instituted based on the protocol.
- Personnel are trained in accordance with the specific protocol for the agent. All university personnel attend mandatory safety courses which also contain information on the possibility of diseases caused by animal exposure.
- Research staff are provided with disposable outer clothing, disposable gloves, gowns, face masks, and shoe covers.
- **Eating, Drinking, and Smoking** is strictly prohibited in the facilities; therefore, these activities must take place in designated outdoor areas.
- Rat bite fever is an infection that occurs worldwide. The disease can be treated with penicillin. Personnel can be treated for such bites at the local health facility on campus.
- Job injuries are reported and tracked by the Office of Risk Management and Assessment.
- The Laboratory Animal Caretaker receives general immunizations which are medically required. (Tetanus or tuberculosis shots are not required for rodents).

c. **Disposal of Potential Hazards in the Animal Facility**

The Hazardous Waste Disposal Policies set forth at JSU are upheld in the Animal Core Facility with regard to each of the following potential hazards:

- Radioisotopes;
- Harmful chemicals;
- Human tissues and/or cells;
- Contaminated animal carcasses;
- Exposed bedding; and
- Contaminated animal feces and urine.

6. **The Use of Radioactive Materials**

Individuals who work with radioactive materials are responsible for protecting themselves and others from any radiation hazards which may arise from their work.

External hazards are reduced through use of time, distance and shielding. Personnel cleanliness and careful adherence to methods and techniques are the primary means of preventing contamination and uptake of radioactivity.

Emergencies range from minor spills of radioactive materials involving relatively little personnel hazard to major radiation incidents involving extreme hazards. Due to the wide range and variety of hazards and the numerous possible complicating factors, precise rules cannot be made to cover all possible situations. In any emergency, however, the primary concern must always be the protection of personnel from radiation hazards. If radioactive contamination is involved, all persons who are in the area at the time of the incident shall be assembled and monitored for contamination. The next concern is confinement of contamination to the local area of the incident, followed by cleanup of the radioactive contamination. The following rules apply:

- Users of radioactive material or other radiation sources must receive prior authorization from the Radiation Safety Officer/Safety Technician or laboratory manager for that specific multi-user research core facility (see Radioactive Usage Request Form).
- Users must follow all rules and regulations set forth in the Jackson State University Radiation Safety Manual.
- Inspections of areas designated for radiation use in multi-user research core facilities will be conducted on a routine and/or request basis by individual users.
- Be aware of warning signs posted in the multi-user research core facilities, especially work areas and equipment designated for radioactive material.
- The Principal Investigator is responsible for providing the manpower necessary to clean up any contamination which results from work conducted under his/her authorization.
- The Radiation Safety Officer/Safety Technician will monitor all spills or accidents and supervise cleanup.

F. COST RECOVERY SYSTEM

The College of Science, Engineering and Technology will handle the transfer of funds related to the cost recovery for the use of equipment in the multi-user core facilities. The business personnel of RCMI and any other special programs of C-SET along with the accounting office of the university will handle the task. The following guidelines will be set up for principal investigators who will use the multi-user core facilities.

- An account will be set up for each principal investigator.
- Once the account has been established, the investigator needs to fill out a Service/Facility Request Form to use the desired equipment or for a specific service. The multi-user core laboratory will provide the estimated cost to the investigator before providing the service or use of the desired equipment. The laboratory will send the forms with the charges required to the office where the user set-up account is being processed.

- The business officer for the program will send a requisition form to the accounting officer of the University in order to deduct the amount from the budget of the investigator.
- The faculty manager will send bills to the program officers for use of equipment and services for the core laboratories. In addition, the technicians will also maintain records for use of equipment and services.
- The deducted amount from the investigator's grant will be placed into a designated budget.

The cost recovery program is intended to reflect relatively realistic costs to the facility. The fees are not intended to make a profit, neither to discourage new users, with or without funding. Accordingly, there will be no charges for initial consultations, and no charges to all in-house users for initial procedures designed to train users or test the feasibility of particular procedures. After initial consultations, training, and feasibility studies, however, charges for repetitive uses and certain consumable supplies will be made.

G. INSTRUMENTATION AND USER FEES

1 The Analytical Core Laboratory

User Fees

Equipment	Hour Rate ^a	Year Rate ^b
HP (Hewlett Packard) Model 6890/5973 GC-MS (Gas Chromatography/Mass Spectrometer)	\$60	\$2,000
Varian, Model Cary 3E UV-Vis (Ultra Violet-Visible) Spectrometer	\$20	\$1,000
Instruments S.A. Model FluoroMax-2 Spectrofluorometer	\$20	\$1,000
Thermo Jarrell Ash Model AA-Scan 4-AA (Atomic Absorption) spectrometry	\$40	\$1,500
Shimadzu Model 17A GC/ECD (Gas Chromatography/Electron Capture Detector	\$20	\$1,000
Spex Model Raman Spectrometer	\$60	\$2,000
Varian Model Cary 300 Bio UV-Vis Spectrometer	\$20	\$1,000
HP Model 1100 HPLC with UV absorption and fluorescence detectors	\$40	\$1,500

Equipment	Hour Rate^a	Year Rate^b
Nicolet Model Nexus 670 FT-IR Spectrometer/Auto Image System	\$40	\$1,500
Finnigan MAT Model Duo-10000 LC/MS/MS System	\$60	\$2,000
Finnigan LCO DECA/ESI Bundel with an LCQ NANA Spray Ion Source (CE/MS)	\$60	\$2,000
Protein Purification System	\$20	\$1,000

a. Additional 40% charges will be added for work requested by external researchers.

b. Frequent users: over 50 hours/year

2. The Animal Core Facility

User Fees

1 - 5 Cages \$ 3,243.80 per year

6 - 10 Cages \$ 4,907.40 per year

11 - 20 Cages \$ 7,407.80 per year

More than 20 Cages \$11,571.80 per year

Charges will be based on receipts for supplies purchased, weekly inventory of the animals and cages, and ACF veterinary service fees. Charge sheets must be signed by the user (primary investigators or designee), the ACF faculty manager, and the program director before charge amounts are transferred from the user's line item for animal care and use to the supplies or other expenses line items of the ACF budget. Animals used by investigators or faculty members without active grant support or who do not have a line item for animal care, will be temporarily supported through the other expenses line item of the core facility's budget.

3. Computational Modelling Core Laboratory/Supercomputer Center

No fee at this time.

4. The Bio-statistical Support Unit

User Fees

User fees of \$70 per hour will be charged for all consultation with investigators who have grant supported research programs. Also, as proposals are developed, appropriate

fees for statistical support will be included. The initial consultations up to an hour will be free. Once the project has been defined, the investigator will be provided with an estimate of the cost of the consultation if more extensive services is needed. All funds generated by the BSU will be used to support activities in the BSU.

5. The Cellomics and Toxicogenomics Research Laboratory

User Fees

Equipment	Hour Rate^a	Year Rate^b
Becton Dickinson Fluorescence Activated Cell Sorting System (FACS Vantage)	\$80	\$2,500
Affymetrix Gene Array System	\$80	\$2,500
Phosphoimager System	\$20	\$1,000

a. Additional 40% charges will be added for work requested by external researchers.

b. Frequent users: over 100 hours/year.

6. The Environmental Toxicology Research Laboratory

Equipment	Hour Rate^a	Year Rate^b
Tri-Carb 2700 TR Liquid Scintillation Analyzer (Packard)	\$60	\$2,000
UltraViolet-Visible (UV/Vis) Lambda 20 Spectrometer (Perkin Elmer)	\$30	\$1,000
MSP 1000 Microwave Sample Preparation System (CEM)	\$20	\$1,000
Inductively Coupled Plasma Spectrometer (Perkin Elmer)	\$80	\$2,500
Gas Chromatograph - Mass spectrometer GC-MS (Hewlett Packard)	\$60	\$2,000

Tissue Embedding Center (Triangle Biomedical Sciences)	\$20	\$500
Tissue Processor (Triangle Biomedical Sciences)	\$40	\$1,000
TBS Microtome (Olympus)	\$20	\$500
Fluoroscanner Microplate Reader (Biosystems)	\$50	\$1,500
Tabletop centrifuge (Eppendorf)	\$30	\$1,000

^a **Additional 30% charges will be added for work requested by external researchers.**

^b Frequent users: over 100 hours/year.

7. The Molecular Magnetic Resonance Core Laboratory

User Fees

Equipment	Hour Rate^a	Year Rate^b
Bruker 250 NMR Spectrometer	\$10	\$800
Bruker 300 NMR Spectrometer	\$14	\$1,200
GN 300 NMR Spectrometer	\$12	\$1,000
Bruker EMX EPR NMR Spectrometer	\$10	\$1,000

a There is a minimum charged of half hour rate for each use of the spectrophotometers. A 50% discount will be applied to long-time experiments after the first 10 hours.

^b Frequent users: over 100 hours/year.

8. The Molecular and Cellular Biology Core Laboratory

User Fees

Equipment	Hour Rate^a	Year Rate^b
Automatic Environmental Speed Vac System	\$10	\$500
Freeze Drying System	\$10	\$500
Nucleovision 760 Imaging Workstation (Gel Documentation System)	\$20	\$1,000
Kodak X-M35 Automatic Processor	\$20	\$1,000
Biosafety Cabinet with UV	\$10	\$500
Beckman Coulter Counter Z2 Electronic Cell Counter	\$20	\$1,000
Epifluorescence Microscope Nikon E-600 Imaging System	\$20	\$1,000
Phase Contrast Inverted Microscope with Camera	\$10	\$500
Humidified CO2 Incubators	\$20	\$1,000
Crucify Liquid Nitrogen Tank	\$8	\$100

a. Additional 40% charges will be added for work requested by external researchers.

b. Frequent users: over 50 hours/year.

c.

9. Visualization Core Laboratory / GIS Remote Core Laboratories

No fee at this time.

H. EMERGENCIES AND NOTIFICATION REQUIREMENTS

In case of an emergency, dial **911** and campus police at **(601) 979-2580**. The fire extinguishers are located on the walls near the door of the facilities. The telephones and emergency kits are located in the designated area of the facilities.

1. Fires

- a) Notify all persons in area and activate fire alarm outside facility.
- b) Notify campus police and fire department.
- c) Attempt to extinguish fire only if fire hazards are relatively minor.

2. Radioactive Contamination

- a. Alert all people in areas.
- b. Confine spill immediately.
- c. For major spills, barricade area and notify radiation safety officer, Mr. James Curry in Room 447 of the JAP. He can be reached at **(601) 979-4315** or **(601) 214-7175** (cellular phone).

3. Personnel Contamination

- a. Flush eyes with water at the emergency eye wash stations.
- b. Wash skin with soap and water.
- c. First aid kits are available in facilities.

4. Fire Safety Plan

The standard operating procedure is designed to protect the well-being of animal facility employees in the event of a fire. In the event of a fire, remember the word RACE is used to represent:

R - RESCUE: Rescue those persons that can be rescued safely, including yourself, by proceeding to an area out of the immediate locations.

A - ALARM: If you can use the telephone safely contact the campus police at **(601) 979-2580** or dial **911**. If you cannot use the phone safely, pull the nearest fire alarm.

C - CONTAIN: Close all windows and doors in the area. This will contain or slow the spread of smoke and fire.

E - EXTINGUISH: Fire extinguishers are located in each animal facility. Extinguish the fire with the nearest fire extinguisher, if you can safely do so. If not, leave the area.

In the event of a fire, animal safety is secondary to your personal safety. Do not try to evacuate animals if doing so represents a danger to you.

5. Bomb Threat Plan

The standard operating procedures are designed to protect the well-being of animal facility employees in the event of a bomb threat. If you receive a bomb threat:

- a) Immediately contact campus police at extension **(601) 979-2580. DO NOT PULL THE FIRE ALARM.**
- b) Alert all personnel in your immediate area of the threat.
- c) Specifically trained volunteers will enter well-defined areas and make a “first pass” search. During this search, personnel will use flashlights and will not turn light switches on or off, and will check floor area for unusual packages.
- d) The area will be evacuated until either campus police or the squad authorize re-entry.

6. Power Outage Plan

The standard operating procedure during power outage is designed to protect the animals in situations of extreme temperature change:

- a. Campus police shall notify principal investigators of power outages after hours or on weekends, if the outage persists for more than 12 hours.
- b. Emergency generators will be used, if they are available.

III. RESEARCH SUPPORT SERVICES

A. OFFICE OF SPONSORED PROGRAMS

The Office of Sponsored Programs (OSP) functions to provide centralized research infrastructure support university-wide. The Office is designed to serve faculty, staff, and students who are pursuing research and/or other sponsored project endeavors that are funded by federal, state or private agencies. The OSP operates as a service-oriented administrative support unit to help advance the mission of the university through the pursuit, acquisition and management of external funding, primarily for restricted purposes to complement the institution’s strategic research priorities and academic programs. To that end, faculty and staff are encouraged to develop and implement projects that promote the university’s goals and to advance their own professional and personal growth.

The OSP continuously strives to provide institutional research support and promote the sponsored programs efforts of the University in a dependable and professional manner by assisting in securing external funds, managing awards, insuring compliance, maintaining fiscal accountability, and advocating grants management, training and development. Administratively, the Office is a unit within the division of Research Development Support and Federal Relations and reports to the Vice President for Research.

The grantsmanship efforts of the faculty and staff indicate an ongoing increase in the rate of growth in sponsored research, increased efficiency in processing grant applications, and a heightened interest by the faculty. The OSP works directly with faculty in developing and reviewing proposals to ensure technical and budgetary accuracy along with compliance with institutional policies and agency regulations.

The Office seeks to align with the overall mission of the University by: providing a supportive environment for conducting research and sponsored programs; reducing the

burden of faculty administrators and staff by providing efficient and effective services; safeguarding the University's interest through ensuring compliance with internal and external regulations, policies and procedures and technology transfer outreach. The aims in this regard are to: encourage creative approaches to the development of new opportunities; promote interdisciplinary and interinstitutional cooperation; stimulate interest in the intellectual life of the University community to maximize its capabilities and strengths; foster the enrichment of students, faculty and staff in sponsored program activities; and to work to match the mission orientated agencies with JSU capabilities.

For more information contact:

Dr. Felix A. Okojie

Vice President for Research Development and Federal Relations

Voice: (601) 979-5840

Administrative Tower, 6th Floor

E-mail: faokojie@ccaix.jsums.edu

Ms. Rita Presley

Director, Office of Sponsored Programs

Voice: (601) 979-2457

Administrative Tower, 6th Floor

E-mail: epresley@ccaix.jsums.edu <mailto:epresley@jsums.edu>

Mr. David Wilson

Data Management Specialist

Voice: (601) 979-2949

Administrative Tower, 6th Floor

E-mail: dwilson@ccaix.jsums.edu

Mrs. Sonja Wilson-Robinson

Sponsored Program Administrator

Voice: (601) 979-4317

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E-mail: sonja.w.robinson@ccaix.jsums.edu

Ms. Georgia Sims

Administrative Assistant

Voice: (601) 979-2318

Administrative Tower, 6th Floor

Mr. Michael Gates

Grants Management Specialist

Voice: (601) 979-2838

Administrative Tower, 6th Floor

E-mail: michael.e.gates@ccaix.jsums.edu

B. INFORMATION SYSTEMS

The Office of Information Systems Services (ISS) is charged by the Office of Information Technology (IT) with the responsibility of coordinating Information Technology Services for the College of Science, Engineering and Technology. ISS acts as a liaison between the Office of Information Technology Academic Computing and the College of Science, Engineering and Technology. Personnel of this unit are managed by the Academic IT component of IT. The mission of Academic IT (AIT) is to support and enhance academic activities of the University by identifying and pursuing opportunities provided by applications of technology to education and research.

Academic IT's vision focuses upon the technological efficiency of academics in utilizing available technology. Academic IT's main goal is to facilitate self-directed manipulation of technological applications. Areas of technology utilization emphasis consist of teacher-student interaction capabilities within classrooms, computer labs, resource centers both local and remote. Facets of utilization include; content presentation using the technology, communications outside the classroom, assessment of effectiveness, and consultant support for research computing facilities. Other services include assisting computer users with setting up computer systems, installing software and hardware and troubleshooting personal computer hardware and software related problems. ISS also make repairs to broken computer systems.

For more information contact:

Mrs. Zelma Leflore

Coordinator of Information Technology Services for CSET

Voice: (601) 979-3451

Room 106, John A. Peoples Building

E-mail: zleflor@ccaix.jsums.edu <mailto:htachi@ccaix.jsums.edu>.

C. RESEARCH INVOLVING RADIOACTIVE MATERIALS

1. Instrumentation

- Geiger Survey Counters with LCD screen and alarm capability have been stationed in the office of the campus radiation safety officer.
- Three beta-emission liquid scintillation counters (Packard Tri-Carb 1500, 1600TR and 2700TR) and three fume hoods are currently located in Dr. Chan's laboratory (Room 532 of the John A. Peoples Building), Dr. Hwang's laboratory (Room 253 of Just Hall of Science), and Dr. Tchounwou's laboratory (Room 424 of the John A. Peoples Science Building), respectively. The counters are equipped with functions such as auto DPM counting and single photon counting and excellent instruments for single- and multi-user(s) conducting radiotracer works.

- One gamma counter (Micromedi Assay Computer (MACC Model 32010) is located in Dr. Yang's laboratory (Room 301 of the John A. Peoples Building).
 - The capacity of the fume hoods is designed for single user laboratory and is frequently used for other chemical preparation works such as solvent concentration and acid digestion.
2. **Storage**
- The JSU Radiation Safety Committee has designated a room close to Room 121 (vault) of the John A. Peoples Building as the central storage room for the Radioactive Materials Core Facility.
3. **User Fees**
- Clean-up or decontamination due to the chemical spill of radioactive material for a minimum charge (less than 0.5 hour): \$50 per visit; additional charge: \$50 per 0.5 hr if longer than 0.5 hr. (average 3 per year).
 - Wipe test beyond the routine scheduled tests: \$30 per test (average 3 per year).
 - Training of radiation safety and certification for using radioactive material: \$50 per user (average 4 new year plus \$25 per person per year renewal).
 - Leak test for GC detector: \$50 per test (average 2 per year).
 - Film badge collection and monitoring fee: \$50 per person per year. (average 4 new per year).
 - Disposal of radioactive wastes: \$800 per 30 gal drum, \$1,500 per 55 gal drum (for dry waste); \$100 per 10 liter for aqueous (organic) wastes. Packing of drums \$50 per 0.5 hour (average \$1500 per drum, plus \$50 per 0.5 hour, plus 1 additional drum per year, plus 5% increase in disposal cost per year).
 - Lab packing of drums \$50 per 0.5 hour.
 - All none JSU College of Science, Engineering, and Technology support, disposal, supervision and consulting will be billed at \$50 per 0.5 hour or \$200 a day (average 4 hours per year).

For more information contact:

Dr. Huey-Min Hwang

Voice: (601) 979-2595

Room 346, Just Hall of Science

E-mail: hwang@ccaix.jsu.edu <mailto:htachi@ccaix.jsu.edu>,

Mr. James Curry

Voice: (601) 979-4315 or (601) 214-7175 (cellular phone)

Room 433, John A. Peoples Building

E-mail: curryjam@msn.com

D. Visualization Core Laboratory / GIS Remote Core Laboratories

Printing services for large format posters and banners are available to the Jackson State University student researchers, faculty, and staff. Before service can be provided, the following criteria must be met:

1. Publications must be university related;
2. Orders must be requested two weeks in advance;
3. Supervisors are responsible for requisition payments for student researchers;
4. Preferred poster formats are PowerPoint, CorelDraw, Presentation, and Publisher; and
5. Clients must proof and approve final copies before each printing.

The nominal cost for this service is \$5.00 per square foot. Customization, adjustments, and additional preparations may require an additional cost. The maximum dimensions for publications are 52 x 120 inches.

Notice: Printing service providers are not liable for mistakes in publication after clients approval. Also the acceptance of orders is at the provider's discretion.

For more information contact:

Mr. Robert L. Hughes

Advanced GIS Application; GIS Training, RS Project Management,

Information Technology

Voice: (601) 979-8250

E-mail: robert.l.hughes@jsums.edu

Mr. John Young

GIS Application Programming, RS Systems Administrator, Information Technology

Voice: (601) 979-8249

E-mail: john.h.young@ccaix.jsums.edu

E. SECURITY

The multi-user research core facilities contain expensive state-of-the-art equipment; therefore, security is essential and is of the utmost concern. The facilities are secured by automatic lock system. To enter a facility, a card key must be used. Once an individual exits the facility and closes the door, the door will lock behind that individual automatically. The Director of Technical Services is responsible for the overall physical and environmental security of the building, all facilities, and personnel safety.

For more information contact:

Mr. A. D. Jones

Director of Technical Services

Voice: (601) 979-2366

Room 122, John A. Peoples Building

IV. ACKNOWLEDGMENTS

The multi-user research core facilities at Jackson State University are in The College of Science, Engineering and Technology. The facilities are financially supported by competitive grants obtained from national and state agencies, including the following:

NATIONAL INSTITUTES OF HEALTH (NIH)

NIH - National Institute for Research Resources - Research Centers in Minority Institutions Program (NIH-NCRR-RCMI) # G12RR13459
Biomedical Research Infrastructure Network (NIH-BRIN) # 5P20RR16476-02
NIH -Support for Continuous Research Excellence (NIH-SCORE) # GM008047

NATIONAL SCIENCE FOUNDATION (NSF)

Center for Research Excellence in Science and Technology (CREST) # HRD-9805465
National Oceanic and Atmospheric Administration/National Environmental Satellite Data and Information Service (NOAA/NESDIS) # 1EG000/8N3ASD00/41111

U.S. DEPARTMENT OF ARMY

US Army Research Laboratory # DAAD19-01-2-0014
Molecular and Analytical Computational Environmental Risk Assessment Consortium (DOA/MACERAC) # DACA42-02-C-0057
US Department of Army (High Performance Computing Visualization Center) # DACA43-03-C-0051

DEPARTMENT OF NAVY

N62306-99-D-B-004

U.S. DEPARTMENT OF EDUCATION

PO31B90006
Title III Program - Strengthening the Environmental Science Ph.D. Program in Instruction and Research

V. APPENDIX

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B. Temporary Pass Request Form..... 38

**JACKSON STATE UNIVERSITY
COLLEGE OF SCIENCE, ENGINEERING & TECHNOLOGY
MULTI-USER RESEARCH CORE FACILITIES**

**SERVICE/USE OF FACILITY REQUEST FORM
(In Multi-User Core Facilities)**

Requested Date _____ Requested Time _____

Name of Principal Investigator _____

College/School Department _____

Facility _____

Circle one: Faculty Student Staff Administrator Other

Name: _____

Type of Service (Instruments): _____

Purchase Order Number (if required): _____

Description of Request: _____

Will radioactive isotopes be used? _____ yes _____ no

If yes, what type? _____

Signature of Principal Investigator: _____

Signature of User: _____

For Office Use Only

Approved Date: _____

Authorized By: _____

Charges (if applicable): _____

**JACKSON STATE UNIVERSITY
MULTI-USER RESEARCH CORE FACILITIES**

**TEMPORARY PASS REQUEST FORM
(For after hours access only)**

Date: _____

Time: _____

Name: _____

Principal Investigator of Project: _____

Department/Unit: _____

Facility Requested: _____

Circle one: Faculty Student Staff Administrator Other

Time and Date Requested: _____

Purpose/Activity: _____

Will radioactive isotopes be used? _____ yes _____ no

If yes, what type? _____

Note!!!! The period of the temporary pass does not exceed one week.

User can apply for renewal of the temporary pass if needed.

Signature of Principal Investigator: _____

Signature of User: _____

For Office Use Only

Authorization: _____ **Date:** _____

**JACKSON STATE UNIVERSITY
MULTI-USER RESEARCH CORE FACILITIES**

**USE OF RADIOACTIVE MATERIALS FORM
(In Multi-User Core Facilities)**

Date: _____ **Time:** _____

Name: _____

Principal Investigator of Project: _____

Department/Unit: _____

Facility Requested to use Radioactive Materials: _____

Time and Date Requested: _____

Name of Radioactive Material Used: _____

Time In: _____ **Time Out:** _____

Type of Spill (if any) _____

Location of Spill (if any): _____

Survey Performed:

Signature of Principal Investigator: _____

Signature of User: _____

For Office Use Only

Authorization: _____ Date: _____

The Manual, Multi-User Research Core Facilities and Research Support Services on Policies and Procedures of the College of Science, Engineering and Technology at Jackson State University, has been prepared by Dr. Jacqueline J. Stevens, Faculty Manager of the Molecular and Cellular Biology Core Laboratory and Ms. Carolyn S. Fletcher, Program Manager for the RCMI-Center for Environmental Health.