School of Medicine
& Health Sciences
THE GEORGE WASHINGTON UNIVERSITY

FACILITIES AND OTHER RESOURCES
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This page contains links to descriptions of many facilities and resources available to SMHS investigators. Resources are arranged alphabetically. You can also use the find function of your browser to search for the desired resource by title. Please note that URLs are **not allowed** in NIH applications and are provided here only for more detail.

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Instructions on information to provide in the NIH Resources section.

As of this writing June 2025, NIH has adopted the streamlined review framework, and **Instructions** for the "Facilities and Other Resources" section uses forms I:

Facilities & Other Resources
The "Facilities & Other Resources" attachment is required unless otherwise specified in the NOFO. Use of URLs and hyperlinks in this section is not allowed unless specified in the Notice of Funding Opportunity.

Content:

Describe how the scientific environment in which the research will be done contributes to the probability of success (e.g., institutional support, physical resources, and intellectual rapport). In describing the scientific environment in which the work will be done, discuss ways in which the proposed studies will benefit from features of the scientific environment or from unique subject populations or how studies will employ useful collaborative arrangements.

If there are multiple performance sites, describe the resources available at each site.

When working with biohazards and any other potentially dangerous substances, describe any special facilities and measures implemented to mitigate threats to human health and the environment. Note: Information about select agents must be described in the Research Plan, Select Agent Research.

For early stage investigators (ESIs), describe institutional investment in the success of the investigator. See NIH's Early Stage Investigator (ESI) Policies. Your description may include the following elements:

- resources for classes, travel, or training;
- collegial support, such as career enrichment programs, assistance and guidance in the supervision of trainees involved with the ESI's project, and availability of organized peer groups;
- logistical support, such as administrative management and oversight and best practices training;
- financial support, such as protected time for research with salary support.

Equipment
The "Equipment" attachment is required.

Attach this information as a PDF file. Use of URLs and hyperlinks in this section is not allowed unless specified by the Notice of Funding Opportunity.

Content:

List major items of equipment already available for this project and, if appropriate, identify the equipment's location and pertinent capabilities.

GENERAL TEXT

General environment at GW

GW is a private, midsized research university with a main campus in the highly urban center of Washington DC. Founded in 1821 as Columbian College, the university has grown to contain 14 colleges and schools. GW has 11,000 undergraduate and 15,000 graduate students enrolled at all locations. Home to traditional disciplines, our research spans science, technology, health, policy, global security, arts, and humanities. The Foggy Bottom Campus contains most of the residential dormitories in which GW students live, as well as the GW Hospital, the medical school laboratories in Ross Hall, the Milken Institute School of Public Health, and the adjacent Science and Engineering Hall.

The GW School of Medicine and Health Science was established in 1824 and today has more than 3,000 faculty members, including 859 full-time and 2,165 limited-service members, who are committed to training the next generation of physicians and scientists. GW is a large medical school with some 750 medical students.

GW's geographical location is within an hour of major research organizations, including the Rockville technology corridor (including companies like MedImmune, AstraZeneca, and others), the National Institutes of Health, Food and Drug Administration, non-profit organizations in research advocacy (e.g. Research! America, American Society for Microbiology, and others) and influential health policy organizations (e.g. Brookings Institute, Human Rights Watch, Cato Institute).

Health Sciences programs provide a training ground for the nation's experts in patient care, healthcare quality, medical laboratory sciences, clinical management and leadership, and numerous other disciplines. Health Sciences offers four entry-level clinical training programs (Emergency Medical Services, Medical Laboratory Sciences, Physical Therapy, and Physician Assistant) in addition to professional programs for advanced training in a wide range of health fields including clinical research administration, regulatory affairs, clinical management, and leadership, clinical and translational research, translational health sciences, biomedical informatics, integrative medicine and health, health care quality, disaster response, and occupational therapy. Health Sciences is active in continuing education and professional development activities, operates numerous military-affiliated programs, and jointly operates a health sciences academy with Alexandria City Public Schools. Health Sciences is a global leader in online and blended education, with national experts in curriculum development, instructional design, and program evaluation

Commitment to research excellence

https://smhs.gwu.edu/research

The GW SMHS has experienced significant increase in federal funding, recruitments of funded investigators, new institutional and GWCC leadership, and collaborative strategic planning that has increased the number of expert research preceptors. For example, SMHS federal research expenditures increased 50% during this period (from 40.9M in FY 2020 to 62.4M in FY 2024). New chairs for our basic science departments include Biochemistry (Rong Li PhD from U. Texas Austin, expert in BRCA1 function in breast cancer, and preceptor in this application, 2018), Anatomy and Cell Biology (John Bethea PhD from Drexel U., expert in neuro-inflammation, 2023), Microbiology Immunology and Tropical Medicine (Sanjay Maggirwar PhD from U. Rochester, expert in complications from HIV in survivors, 2019), Pharmacology and Physiology (David Mendelowitz from U. Washington, expert in neurocontrol of cardiovascular system) and Pathology (Antonia Sepulveda MD PhD from Columbia U., expert in cancer biomarkers, 2019). Barbara Lee Bass, MD, a surgeon-scientist was named Dean of the SMHS in 2020. Dr. Julie Bauman was named as Director of the GWCC in 2022. These and other research leaders are building new opportunities for trainees critical to this application.

The majority of extramural funds received are allocated for biomedical research. Research funding primarily is obtained on a competitive basis from the federal government, particularly NIH. In FY 2024, SMHS faculty reported expenditures of $62.4 million, a sum representing a 17% increase from the previous year, and

a 50% increase from five years ago. There are 23 academic departments in SMHS, numerous research and training grants, a P30 DC-CFAR with the School of Public Health, Additional research funding is received from private research foundations, state and local government agencies, private philanthropy, and industry.

Commitment to outstanding patient care

https://www.gwhospital.com/

https://www.gwdocs.com/research

Medical Faculty Associates (MFA) is an independent multispecialty physician group practice encompassing more than 48 medical specialties. MFA physicians serve as full-time faculty of the GW School of Medicine and Health Sciences providing mentorship and teaching to medical students, residents, and fellows.

The George Washington University Hospital (GW Hospital) continues to be a leader in providing the highest level of quality and compassionate healthcare for the D.C. Region. The George Washington University Hospital (GW Hospital) continues to be a leader in providing the highest level of quality and compassionate healthcare for the D.C. Region. In its 2024-2025 ratings and rankings, U.S. News & World Report recognized GW Hospital as a Best Regional Hospital, ranking 4th in the region, which includes hospitals in D.C., and parts of Maryland, Virginia and West Virginia. GW Hospital achieved "High Performing" status in six specialty areas: Neurology and Neurosurgery, Orthopedics, Pulmonology and Lung Surgery, Gastroenterology and Gastrointestinal Surgery, Urology and Geriatrics, along with receiving “High Performing” designations for the following eight common procedure and condition areas: Heart Failure; Heart Attack; Kidney Failure; Leukemia, Lymphoma, and Myeloma; Prostate Cancer Surgery; Stroke; Hip Fracture and Diabetes. Additionally in 2024, GW Hospital received the American College of Cardiology’s National Cardiovascular Data Registry (NCDR) Chest Pain – Myocardial Infarction (MI) Registry Platinum Performance Achievement Award. Children’s National Hospital, GW Hospital’s NICU partner, was also ranked the number two hospital in the country for neonatology and tied for #1 pediatric hospital in the mid-Atlantic region by *U.S. News & World Report*. In addition to these recognitions, GW Hospital also provides high-quality care in the region through its designation as a Level I Trauma Center and designation as a Comprehensive Stroke Center.

Opened on April 15, 2025, Cedar Hill Regional Medical Center, GW Health is the first new full-service hospital in Washington, DC in more than 25 years. The $434.4 million, 407,000-square-foot full-service hospital includes 136 beds (with the ability to expand to 184 beds), trauma care, adult and pediatric emergency departments, maternal health and delivery, an ambulatory pavilion for physician offices and clinics, a community space, a 500-car garage and a helipad for emergency transports. The hospital also features a nearby ambulatory pavilion with physician offices, clinics and community spaces, as well as specialty services like dialysis, infusion, cardiac rehab and physical therapy—all critical additions to the health care infrastructure in wards 7 and 8.

Commitment to outstanding education and training

A key mission for SMHS is training the next generation of scientists and healthcare leaders. SMHS hosts more than 450 residents and fellows, more than 600 medical students, 130 physician assistant students, and 140 DPT students in our professional programs. SMHS functions as the administrative and quality control unit for approximately 60 IBS Ph.D. students enrolled in 5 Ph.D. programs, 65 students in Translational Health Sciences Ph.D. programs, and several master’s programs, undergraduate degree, and certificate programs.

Research Infrastructure (buildings)

Ross Hall

https://venues.gwu.edu/ross-hall

Steps from the Foggy Bottom metro station, the Walter G. Ross Hall is home to the GW School of Medicine and Health Sciences. Ross Hall features classrooms, laboratory spaces, and the Himmelfarb Health Science Library. The George Washington University’s Ross Hall was constructed in 1973 and houses facilities for their medical school program, including their Clinical Learning and Simulation Skills and CSA Simulation Center on the 4th floor. The building contains laboratory classrooms, administrative support space, and the Himmelfarb Health Sciences Library.

Clinical Learning & Simulation Center (CLASS Center)
https://physicianassistant.smhs.gwu.edu/curricula-class-center

The Clinical Learning & Simulation Center, located on the 4th floor of Ross Hall, replicates an actual healthcare setting for procedural training, including inpatient/outpatient rooms, control rooms, debriefing rooms, wet lab/dry lab, high-acuity simulation rooms utilizing electronic mannequins, reception, administrative offices, break-out space, and storage. Primary users include medical and health science students, residents, fellows, and practicing staff for educational purposes and professional development.

George Washington University Hospital
https://www.gwhospital.com/node/595

The mission of the George Washington University Hospital is to provide the highest quality healthcare, advanced technology, and world-class service to our patients in an academic medical center dedicated to education and research.

The George Washington University Hospital has approximately 395 beds, 20+ operating suites and 1 hybrid operating room along with a level III neonatal intensive care unit. The GW Hospital is accredited by The Joint Commission and licensed by the District of Columbia Regulatory Affairs Department. In 2021 there were 18,464 admissions, 23,611 surgeries, 2558 births, 46,976 emergency room visits and 171,761 outpatient visits. As a teaching hospital for the GW School of Medicine and Health Sciences (SMHS), physicians, medical students, and residents work together to deliver outstanding and compassionate clinical care while engaging in biomedical research that drives translation of breakthroughs to better health outcomes. GW Hospital achieved recognition as a "Best Regional Hospital" in the US News & World Report 2024-2025 ratings. This designation means that the GW University Hospital outperforms its peers in procedures and conditions that U.S. News & World Report evaluates, including risk-adjusted survival, patient experience, level of nursing care and successfully returning patients home following discharge.

Cedar Hill Regional Medical Center GW Health opened April 15, 2025 as the first new full-service hospital in Washington, DC in more than 25 years. This hospital integrates clinical care with existing providers, The George Washington University Hospital and the Urgent Care Center in Ward 8. This clinical integration will establish a robust system of care for all District residents, and ensure residents of Wards 7 and 8 have access to high quality care in their community.

The $434.4 million full-service hospital includes 136 beds (with the ability to expand to 184 beds), trauma care, adult and pediatric emergency departments, maternal health and delivery, an ambulatory pavilion for physician offices and clinics, a community space, a 500-car garage and a helipad for emergency transports.

Science and Engineering Hall
https://www.seas.gwu.edu/science-and-engineering-hall

In 2015, the University opened the $275M state-of-the-art, 500,000-square-foot Science and Engineering Hall. The opening of SEH allowed for the hiring more than 40 biomedical faculty and the expansion of essential core facilities, including flow cytometry, high-end microscopy imaging, genomics/proteomics, bioinformatics for conducting research, and a state-of-the-art space for GW NIC's nanofabrication clean room and microscopy suite. SEH houses the Engineering School, Chemistry, and select faculty from Biology, Physics, and eventually Medicine and Public Health.

GW SMHS and MFA (Academic Medical Enterprise) Strategic Plan 2023-2026
https://strategicplan.smhs.gwu.edu/

The four pillars of the Academic Medical Enterprise Strategic Plan are Education, Research, Clinical Care, and Population Health and Health Equity. In each of the four pillars of the strategic plan we aspire for local, regional, national and international recognition of excellence. These four pillars of our academic medical enterprise are built on the foundation of our three shared cultural values of promoting the wellness of our community, championing equity and inclusion, and being a welcoming and supportive environment for all.

SPECIFIC FACILITIES AND RESOURCES

SMHS Research, including Research at SMHS, Research Workforce, Funding & Support, and Research Toolbox, are described at https://smhs.gwu.edu/research. Researchers may be interested in obtaining research funding alerts in 25 research themes, or looking up faculty research interests.

SMHS Research Enabling Facilities are described in detail at https://smhs.gwu.edu/research/research-toolbox

Most shared equipment is scheduled using a LabArchives account. For more information about LabArchives, visit https://research.gwu.edu/labarchives.

Where indicated, each Core adheres to specific costing and charging guidelines to ensure compliance with the A133 requirements:

- Costing of services: Core facilities providing services to NIH grants must charge costs directly to the applicable awards.
- Rate structure: Rates must be based on actual usage, established using a documented method, and cannot discriminate against federally supported activities.
- Cost recovery: Rates are designed to recover the aggregate costs of the services, generally consisting of direct costs only.
- Allowable costs: Only allocable, allowable, and reasonable direct costs (consistent with applicable Federal cost principles) of providing services to an NIH grant may be recovered.

Animal Behavior Testing Facility

The Animal Behavior Facility includes several systems to automatically record and analyze animal behavior, such as the Cleversys Behavior System: TopScan Suite HR (real time and high throughput), SocialScan HR (real time and high throughput), HomecageScan HR (real time and high throughput), Fear Conditioning System, and Ladderscan System. These allow trained users to perform various behavioral assays, including tests for motor activity (open field, ladder running), anxiety (elevated plus maze), social behavior, home cage behavior, and learning and memory (fear conditioning).

Animal Research Core

https://research.gwu.edu/office-animal-research

The Animal Research Core, run by the Office of Animal Research, are fully accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC). The Animal Research Staff is qualified in veterinary medicine and laboratory animal care and management. The modern core facility located in Ross Hall, features administrative offices, refrigerated diet storage, quarantine, examination and treatment rooms, necropsy, cage sanitation, storage rooms, and procedure rooms. Conventional animal holding rooms and a barrier facility are readily accessible to investigator laboratories and are equipped with sinks, flushing drains, seamless floors, automatic watering, light cycle timers, and HVAC (Heating, Ventilation and Air Conditioning) support, as stipulated by The Guide in accordance with all facets of applicable laboratory animal research industry standards. Animal care and management practices also comply with The Guide, the Animal Welfare Act, and other applicable local and federal regulatory requirements, and meet AAALAC quality standards.

Bioinformatics

https://biomedinfo.smhs.gwu.edu/about-gw-biomedical-informatics-center

The GW Biomedical Informatics Center, led by Dr. Qing Zeng, leverages biomedical information, including EHR, social media, and omics data, to predict and improve patient outcomes by developing and using cutting-edge computational technology.

Bioinformatics support is also available in the McCormick Center with Dr. Anelia Horvath.

Biorepository Core
https://gwbiorepository.smhs.gwu.edu/

The GW Biorepository is a comprehensive, state-of-the-art resource of biospecimens and clinical data designed to help today's leading investigators facilitate their research on HIV/AIDS and cancer, and directed by Dr. Jeffrey Bethony. The GW Biorepository presently holds a collection of over 100,000 biospecimens. This inventory represents 16 categories of AIDS-associated malignancies and controls, as well as other biospecimens pertinent to HIV. The GW Biorepository collects biospecimens under Office for Human Research Protections (OHRP) and Health Insurance Portability and Accountability Act (HIPAA) guidelines and with local IRB approvals.

GW was chosen as one of two sites for the first clinical trials of an HIV vaccine candidate, and the Department of Microbiology, Immunology, & Tropical Medicine (MITM) hosts the primary site of the AIDS and Cancer Specimen Resource, the largest collection of annotated HIV malignancy specimens globally.

Biostatistics

Biostatistical support is available through the Office of Clinical Research for non-grant and pre- and post-award clinical research projects, specializing in clinical research design; null hypothesis significance testing; linear modeling, data mining, tidying, and visualization; manuscript, grant, abstract, and poster/podium presentation preparation; the Cerner Learning Health Network powered by Oracle; and the Cosmos Data Model powered by Epic. https://clinicalresearch.gwu.edu/researchers/biostatistics-support

Biostatistical support is available through the Biostatistics and Epidemiology Consulting Service (BECS). BECS provides support through consultations, extended collaborative relationships, communication about best practices, and broad-based services in research design, statistical analysis, data management, and dissemination of findings, with priority service for pre-award consultations and analysis. https://publichealth.gwu.edu/departments/biostatistics-and-bioinformatics/becs

Also available is the Cancer Informatics Core pilot project (CIC-p) which provides collaborative informatics support for cancer research through guidance for software use and by acting as liaison for various NGS data services. https://cancercenter.gwu.edu/research/shared-resources/cancer-informatics-core-pilot

Biostatistics Center
https://biostatcenter.gwu.edu/

The Biostatistics Center, within the Milken Institute School of Public Health, was established in 1972 and serves as the coordinating center for large-scale multi-center clinical trials and epidemiologic studies. The Center participates in population-based epidemiologic studies and conducts grant-supported research in biostatistical methods. The Biostatistics Center staff has extensive experience and expertise in biostatistics, epidemiology, clinical trial study design and data management, and administration and coordination of multi-center research studies.

The Biostatistics Center's primary objective is to provide statistical leadership for the design, execution, and analysis of multi-center clinical trials and epidemiologic investigations, and to ensure that the results of such studies are of the highest scientific integrity and meet rigorous biostatistical standards. The Biostatistics Center includes activities in statistical methods, study design, data management, statistical analysis, and publications.

Cancer Center
https://cancercenter.gwu.edu/

GW demonstrated a strong commitment to cancer research with the establishment of the GWCC in late 2015. Since that time, the GWCC has grown to a membership of over 175 investigators and built several shared resources such as including the Flow Cytometry Core Facility, the Biospecimen Repository, the Cancer Informatics Core Pilot, and the Stem Cell Transplantation and Cell Therapy Laboratories.

Led by Director Dr. Julie Bauman, the GWCC brings together investigators focused on cancer research, clinical cancer care, cancer prevention and control, and community outreach and engagement across GW, GW University Hospital, the GW Medical Faculty Associates, the Milken Institute School of Public

Health, Children's National Hospital and affiliated health systems to offer a range of exciting research programs, seminars, and annual retreats. The GWCC is in an intensive growth phase expanding cancer research across clinical, basic, and population sciences to seek NCI designation. The mission of the GWCC is to drive transformational research, personalized therapy, family-centered care, and cancer policy in the nation's capital.

Cancer Epidemiology Shared Resource (CESR)
https://cancercenter.gwu.edu/cancer-epidemiology-shared-resource-cesr

The GW Cancer Center's Cancer Epidemiology Shared Resource (CESR) collects and manages population-based and patient-reported clinical data to support GW Cancer Center administrative and community outreach and engagement (COE) activities, GW Cancer Center researchers, and members of the GW Cancer Center catchment area community. The CESR, along with the Cancer Informatics Core and the GW Cancer Center Clinical Trials Office, is one component of the GW Cancer Center's overall cancer data ecosystem.

A key resource of CESR is the GW Cancer Center Data Visualizer. This interactive shared resource web tool allows users to evaluate cancer-related data in the District of Columbia and surrounding counties in Maryland and Virginia along with data on social determinants of health (SDH) in our surrounding patient catchment area. Data presented in the DC Cancer Data Visualizer come from publicly available, de-identified data sets. The purpose of this tool is to help assess cancer burden in our community, guide research and improve cancer outcomes. The Cancer Center Data Visualizer can be accessed at: https://public.tableau.com/app/profile/brooke6658/viz/TheGeorgeWashingtonCancerCenterDataVisualizer/Welcome

Cancer Clinical Trials Office
https://cancercenter.gwu.edu/research/clinical-trials-office

The Clinical Trials Office (CTO) of the George Washington Cancer Center (GWCC) is led by Dr. Richard Lush and assists with the planning, conduct, and compliance of any cancer-related clinical trials, including those using pharmacologic or radiation therapies or investigational devices, as well as non-interventional trials. The CTO is overseen by an Associate Center Director of Clinical Investigations and a Senior Administrative Director and is staffed by nurses, regulatory personnel, data managers, and study coordinators. The CTO can provide protocol support regarding scientific review, HIPAA compliance, Human Subjects protection, and IRB requirements and submissions, as well as ongoing regulatory and reporting requirements. The CTO can also assist in the design, implementation, and execution of investigator-initiated clinical trials and correlative studies, including blood collection and processing and tissue procurement.

Cellular Therapy Laboratory at CNH
https://research.childrensnational.org/labs/cellular-therapy

The Cellular Therapy Laboratory (CTL) at Children's National Research Hospital is a facility charged with translating and manufacturing cell therapy products for use in clinical trials and stem cell transplantation. The facility is Foundation for the Accreditation of Cellular Therapy (FACT) accredited for processing of minimal and more-than-minimal manipulation products. It has expertise in manufacturing a broad array of cell therapy products, including dendritic cells, T cells, cell lines, monocytes, mesenchymal stromal cells (MSCs), and genetically modified cells. In addition to manufacturing the cells, the CTL supports quality assurance and quality control functions as required by the FDA, and has a quality program that details the process by which new cell therapy protocols are transferred to the CTL, including validations, process development, training, audits, documentation, product release, and also budget creation.

Cell Therapy Unit at GW
https://cancercenter.gwu.edu/research/shared-resources/stem-cell-transplantation-cell-therapy-laboratories

Led by Drs. Amarendra Neppali MD and Eric Yvon MD, the GW Cell Therapy Unit in Ross Hall provides centralized facility and resources for the preparation of therapeutic cellular products. This facility opened in

2023 and provides a centralized facility and resources for the preparation of therapeutic cellular products. Services include Hematopoietic Progenitor Cells (HPC) processing, CAR-expressing NK- and T-cell preparation, Antigen-specific cytotoxic T lymphocyte (CTL) generation, Regulatory T-cell (Treg) expansion, and Clinical grade vector production. The facility is Foundation for the Accreditation of Cellular Therapy (FACT) accredited for processing of minimal and more-than-minimal manipulation products.

Classroom Resources
https://it.gwu.edu/classroom-technology

Academic Technologies supports over 200 technology-enhanced classrooms and labs on the Foggy Bottom, Mount Vernon, and Virginia Science and Technology campuses. These learning spaces are equipped with innovative technology, which enhances the teaching and learning experience at GW. Echo360 Lecture Capture is also available in select spaces. Classroom search is available at https://it.gwu.edu/classroom-search. They provide a multitude of services structured to support the teaching, learning, and research needs of the SMHS community. Videoconferencing, an equipment loan service, and on-site technical support are just a few of the services available.

Computing

The SMHS has a fully staffed IT unit that includes a director, network, and technical support staff to assist users with all projects and support requests. Our capabilities will allow for any required reference retrieval, any other data retrieval or exchange, and online database access.

All faculty, staff, and students have access to email and collaboration software such as WebEx and Skype to convene and share documentation offsite. Faculty and staff members also have access to licenses that include an extensive range of word processing, analytic, graphics, mapping, and presentation software such as, SPSS, Stata, SAS, Atlas.Ti, MPlus, Adobe Creative Suite, Nvivo, Qualtics, and ArcGIS.

GW is connected to research and educational communities via wireless access service, Eduroam, a secure, worldwide roaming access service developed for the international research and education community. It allows users from member institutions to connect to the Internet when visiting other participating institutions. GW is also part of the Capital Area Advanced Research & Education Network (CAAREN), a Internet2 member network led by members from research and education communities, industry and government.

GW Box is GW's enterprise file-sharing service for online cloud storage and collaboration for GW faculty, staff, and students. GW Box uses a two-step authentication process for system access. Two-step authentication provides users with secured access to their online information utilizing a password plus a code sent to a smartphone or device. Users store regulated, restricted and public university data on GW Box.

Data Use and Management
https://libguides.gwu.edu/data-management

All GW members have the duty to protect University data from unauthorized generation, access, modification, disclosure, transmission or destruction. GW information security policy sets forth information security standards for the protection of non-public information within the University.

DUAs: (https://researchintegrity.gwu.edu/data-use-and-sharing) Certain data require specialized protections, and in some circumstances, protections may be outlined through data sharing/transfer agreements otherwise referred to as Data Use Agreements (DUAs) with other parties. OVPR reviews the terms of proposed DUAs so that the data may be accessed and used as soon as an appropriate Data Management Plan has been approved.

DMPs Data Management Plans: (https://researchintegrity.gwu.edu/data-management-plans) are generally required by data providers to document and address all requirements for protecting the data. GW requires a review and risk assessment of the plan for how incoming data will be securely stored or accessed by GW systems or investigators. DUAs generally impose specific security standards and risks on the receiving party hosting the data, which are addressed in a data management plan (DMP).

DC Center for AIDS Research (DC CFAR)
https://dccfar.gwu.edu/

GWU has long been a leader in the nation's response to HIV/AIDS. In response to the HIV surveillance challenges at the time, the DC Department of Health requested technical assistance from GW in August 2005. This led to the establishment of the foundational DC Health-GW public health-academic partnership, now in its 14th year, to improve HIV epidemiology and surveillance activities in DC. GW continues a unique commitment to our diverse community in DC, and this program incorporates key outreach training opportunities. In 2006, GW established the HIV/AIDS Institute to promote scientific collaborations across GW, Children's National Health System, and the Veterans Affairs Medical Center. Soon after, Georgetown University and Howard University also joined this initiative.

Together, in 2015, the DC Center for AIDS Research (DCCFAR), a unique city-wide consortium representing 230 HIV investigators at eight collaborating research institutions in Washington, D.C., achieved a full CFAR status. The DC CFAR (now made up of 260 members and nine partner institutions) is a part of a national network of CFARs funded bythe National Institutes of Health to provide scientific leadership and institutional infrastructure for HIV/AIDS research.

The DC CFAR supports five cores. Each core provides services that facilitate HIV/AIDS research and contributes synergistically to the overall DC CFAR mission. (https://dccfar.gwu.edu/cores-services)

- **Administrative Core**
  The Administrative Core provides leadership for the DC CFAR cores and scientific working groups, promotes synergies across the six collaborating academic institutions, and supports partnerships with government, community, and academic collaborators.
- **Developmental Core**
  The Developmental Core coordinates the DC CFAR Pilot Awards Program, the microgrant program, mentoring, and educational and training opportunities. The Core focuses its programs and services on early, new, and newly transitioning HIV investigators.
- **Advanced Technology Core**
  The Advanced Technology Core provides state-of-the-art services and training in relevant methods and techniques used by HIV laboratory investigators including virologic, molecular, immunological, imaging, and next generation sequencing.
- **Clinical and Population Sciences Core**
  The Clinical and Population Sciences Core provides clinical, epidemiologic and biostatistical services; recruitment and retention consultation and support; and access to biological samples and clinical databases from new and existing studies and networks.
- **Social and Behavioral Sciences Core**
  The Social and Behavioral Sciences Core provides a range of services to provide support on the concepts, theories, methods, and methodologies in the social and behavioral sciences relevant to HIV/AIDS.

Electronic Health Records and Research
https://guides.himmelfarb.gwu.edu/HIT/EHR

Researchers can access electronic medical records for secure studies. Researchers typically need an IRB, work with data analyst support, and secure storage space and tools. Both GW Hospital and CNH use Cerner as their electronic health record. For Cerner Research Access, please contact **Grami, Shahrzad** <shahrzad.grami@gwu-hospital.com, and provide information using this form https://redcap.research.gwu.edu/surveys/?s=X94AKR3ENANWYL94

The Medical Faculty Associates MFA uses Epic. For Epic support, please contact Brian Choi, Chief Medical Information Officer, and request training on a self-service tool, **Slicer-Dicer**.

Researchers at the VA use VINCI as the electronic health record.

Flow Cytometry Core
https://smhs.gwu.edu/flow-cytometry/

Since its establishment in 2004, the Core has provided researchers access to well-characterized cytometry equipment for sophisticated cell sorting and cell analysis experiments, as well as services in data analysis, instrument training, and cytometry education. The goal is to facilitate the production of accurate, reproducible

cytometry data in support of the academic and research mission of the GW scientific community. The GWU Flow Cytometry Core Facility is run by core staff member Greg Cresswell, PhD.

The facility maintains cytometers and a workstation for data analysis including

1) Cell Sorter: 4-laser, 15-color BD Influx high speed sorter
2) Cell Sorter: 4-laser, 6-color Sony SH800z sorter
3) Cell Analyzer: 3-laser, 12-color BD Celesta analyzer
4) Cell Analyzer: 3-laser, 36-channel Cytek Aurora analyzer, and a PC workstation with the latest cytometry data analysis software and educational resources

Genomics and Proteomics Core Resources at CNH

https://www.ctsicn.org/gen-pro

The Genomics and Proteomics Core at CNH is housed in open laboratories totaling 22,000 sq. ft. of space. Specialized equipment dedicated to core proteomic facilities includes:

- **Thermo Q Exactive HF mass spectrometer for LC-MS and LC-MS/MS analysis.** This mass spectrometer is a quadrupole-orbitrap hybrid similar to our Q Exactive instrument but with an improved high-field orbitrap mass analyzer. The QE-HF is coupled online to a nano-flow EasynLC UPLC system.
- **Thermo Q Exactive mass spectrometer for LC-MS and LC-MS/MS analysis.** This mass spectrometer is a quadrupole-orbitrap hybrid that can acquire spectra at 12 Hz and 140,000 resolution. This system offers state-of-the-art speed, sensitivity, dynamic range, and resolution and is ideally suited for discovery and targeted proteomic applications. It is coupled online to a nano-flow EasynLC UPLC system.
- **Thermo LTQ-Orbitrap XL mass spectrometer for LC-MS and LC-MS/MS analysis**. This mass spectrometer has up to 60,000 resolution and 3 ppm accuracy and is coupled online to an Eksigent nano-hplc. The high resolution and fast scan speeds are ideal for protein identification and quantitation.
- **ABI 4700 MALDI-TOF-TOF mass spectrometer with an Nd:YAG laser** that can operate at 355 nm to ionize samples with pulses of 3 to 7 nsec. duration and frequency of 200 Hz resulting in high-speed analysis (1000 MS and MS/MS analysis per hour). Some other characteristics of the instruments are 10 to 15,000 resolution in reflection mode, up to 10 ppm accuracy and sensitivity in the subfmole range. GPS explorer software employing a web-based protein database and Mascot search engine is interfaced to the instrument for data analysis and protein identification.

The core is fully equipped to offer both Affymetrix and Illumina array services, utilizing their complete line of arrays (DNA /RNA/miRNA). The center houses two complete Affymetrix GeneChip® stations, including two GeneChip® Fluidics Stations, two GeneArray® scanners, and two GeneChip® hybridization ovens, in a dedicated room.

The core has an Illumina NextSeq500 next-generation sequencer (NGS). Related equipment includes a Covaris DNA shearing station, and Blue Pippin and Pippin Pulse (Sage Technologies) instruments for nucleic acid sizing. A ThunderBolts RainDrop NGS target enrichment and RainDrop Sense™ (RainDance Technologies) system is also available for generating NGS libraries and digital droplet PCR. An AutoGen QuickGene-810 system is available for automated extraction of DNA and RNA from a variety of tissues.

For direct digital counting of miRNA/mRNA and selected DNA applications, we also have access to a complete NanoString nCounter System, provided by agreement with the clinical pathology department. The core is also equipped with a MesoScale Diagnostics QuickPlex SQ 120 scanner for multiplex ELISA assays over a wide dynamic range.

Computational resources are continuously upgraded. Physical servers are virtualized to save energy, enabling robust internal cloud computing. This system accommodates most standard usage and in addition allows very active users to purchase their own blades for enhanced computational power as needed.

High Performance Computing

https://hpc.gwu.edu/

GW's flagship compute cluster is Pegasus (https://hpc.gwu.edu/pegasus/). Building on the success of GW's inaugural HPC cluster in 2013, Colonial One (which was decommissioned in 2020), Pegasus has been in operation since 2018 and is located on the Virginia Science and Technology Campus. Pegasus is managed by the Research Technology Services team in GW IT, including 24-hour monitoring. Pegasus is connected to

GWU's robust 100-Gigabit fiber optic network and comprises 210 compute nodes, using Dell R740s and C4140 servers, plus Data Transfer Node featuring the Globus research data management service. Pegasus features a total of 8,112 CPU cores and 614,400 CUDA cores in several configurations, with a total compute specification of over 2 petaflops of single precision operation. The Pegasus cluster has both a primary (NFS) storage system and an Infiniband-connected high-speed scratch (Lustre) storage system, each with approximately 2PB of usable capacity, as well as access to other research file systems.

IMPACT Initiative

https://impact.smhs.gwu.edu/

The IMPACT (Instructional Media for Programming, Collaboration and Teaching) team are dedicated to helping Health Sciences faculty achieve their pedagogical and scholarship goals through technological innovation and good old-fashioned smarts (i.e. research-based principles). Services offered include E-learning design and development, improving teaching and learning, videos and podcasts, curriculum & course design, and faculty assistance.

Integrated Biomedical Sciences PhD Program

https://ibs.smhs.gwu.edu/

The five biomedical science Ph.D. programs in the GW School of Medicine and Health Sciences stem from the Integrated Biomedical Sciences (IBS) program. This interdisciplinary umbrella admissions and oversight program brings together a wealth of research opportunities at the GW School of Medicine & Health Sciences and Children's National Hospital. The common IBS core curriculum includes interdisciplinary cell and molecular biology and physiology courses, biostatistics, and professional skill courses in scientific writing, biomedical careers, and responsible conduct. Foundation courses in each Ph.D. program begin in the second semester, and still allow student flexibility. Students participate in three rotations in the first year of graduate training in order to identify a faculty research advisor. NIH T32 training grants support PhD training in Cancer Biology or HIV Persistence and many students win independent fellowships. Program-specific Graduate Program Directors guide and oversee students through the completion of remaining coursework, a grant-style qualifier examination, and dissertation research. Over 60 faculty members participate in one or more of the 5 Ph.D. programs, and our current student enrollment numbers are approximately 65. Ph.D. alumni go on to research careers in academia, industry/biotech, and government/nonprofit, as well as careers in science communication, science teaching, and science policy.

Internet2

https://internet2.edu/

GW is part of the Capital Area Advanced Research & Education Network (CAAREN), a Internet2 member network led by members from research and education communities, industry and government.

CAAREN connects to Internet2's Advanced Layer 2 Service, a nationwide software-defined network (SDN). GW is part of the Internet2Network, which is a computer networking consortium led by members from research and education communities, industry, and government. It gives our researchers the ability to use ultra-high-speed networking speeds when working with large dataset transfers that are used in much of our current research.

Library Facilities

https://library.gwu.edu/

GW Libraries and Academic Innovation (LAI) provides many of the services and resources you need to be successful in your teaching, learning and research endeavors. Libraries that are part of LAI include the flagship Estelle and Melvin Gelman Library on the main campus in Foggy Bottom, Eckles Library on the Mount Vernon Campus in Northwest DC, and the Virginia Science And Technology Library (VSTC Library) on the Virginia Science & Technology Campus in Ashburn, VA.

Faculty, staff, and students also have access to eight additional branches located throughout the Washington, DC metropolitan area – including the Library of Congress, the libraries of the National Institute of Health, and the National Library of Medicine – that permit inter-library loans.

The McCormick Genomics and Proteomic Center (MGPC)
https://mgpc.smhs.gwu.edu/

The McCormick Genomic and Proteomic Center (MGPC) is a genomic research center at the interface of computational genomics and wet laboratory within the School of Medicine and Health Sciences. The mission of MGPC is to promote and support genomic research at GWU through the discovery, generation and/or experimentally validation of new hypotheses, and unraveling key molecular events in normal and diseased cells. MGPC possesses a human data dedicated server, specifically protected for storage and analysis of human genomic datasets in compliance with the NIH requirements, and GWU IRB-approved protocols.

The MGPC provides wet laboratory, proteomics and computational genomics support to GW researchers. The center's focus is to harness emerging, in-house genomic, transcriptomic, proteomic, and bioinformatics knowledge to build and test new biologically relevant hypotheses. The MGPC team has valid licenses for the following commercial software tools and databases:

- Geneious: A genome browser reference mapping and sequence assembly tool. Features include:
  - NGS Analysis and Genomics
  - Sequence and Chromatogram Analysis
  - Alignment and Tree Building
  - Molecular Cloning
  - Searching, Sharing, and Automation
- HGMD (Human Gene Mutation Database): A gold standard resource for comprehensive data on published human inherited disease mutations
- TRANSFAC (Transcription Factor Database): A tool that provides data on eukaryotic transcription factors, their experimentally-proven binding sites, consensus binding sequences, and regulated genes
- Oncomine: Compute gene expression signatures, clusters, and gene-set modules, for extracting biological insights from the data
- MetaCore: A high-quality biological systems content in context, producing essential data and analytical tools to accelerate scientific research
- Ingenuity® Pathway Analysis (IPA®): IPA is a powerful analysis and search tool that uncovers the significance of 'omics data and identifies new targets or candidate biomarkers within the context of biological systems. IPA may be used for the analysis, integration, and interpretation of data derived from 'omics experiments, such as RNA-seq, small RNA-seq, microarrays including miRNA and SNP, metabolomics, and proteomics.
- OriginLab: Data analysis and graphics software to make technical charts for scientists and engineers displaying 2D and 3D plotting, statistics, curve fitting, and peak fitting

Medical Student Research, OSPE
https://ospe.smhs.gwu.edu/

Medical student research is supported by the Director of Medical Student Research, Dr. David Leitenberg and Assoicate Dean for MD Admissions Ioannis Koutroulis . Medical students may pursue scholarly concentrations, conferences, and more through the Office of Student Professional Enrichment (OSPE).

Molecular Biology Facility
https://smhs.gwu.edu/research/research-smhs/research-enabling-facilities/molecular-biology-facility

Located in Ross Hall, the Molecular Biology Facility contains equipment including, Cryostat -Thermo-Fisher Cryostar NX50, Automatic Liquid Handler - Eppendorf EpMotion 5070, Infrared Imaging System -Li-Cor Odyssey Classic, Dropwise Spectrophotometer - GE NanoVue Plus, Real-Time Thermal Cycler - BioRadCFX384 Real-Time System and C1000 Thermal Cycler, Quantitative PCR -Applied Biosystems ViiA 7,

Plate Reader - Thermo-Fisher Varioskan Flash, Bioanalyzer -Agilent Seahorse XFe96, and the Satellite Biosafety Laboratory Facility.

MyResearch
https://sponsoredprojects.gwu.edu/myresearch

MyResearch is GW's integrated online system for proposal development and sponsored award management.

Nanofabrication and Imaging Core
https://nic.gwu.edu

The GW Nanofabrication and Imaging Core (GWNIC) features state-of-the-art microscopy instrumentation and a Class 100 cleanroom. Led by Dr. Anastas Popratiloff, the GWNIC provides university-wide core infrastructure for research in engineering, chemistry, physics, biology, public health, medicine, and biomedical sciences. The GWNIC provides access, training, and use of confocal microscopes, a Leica Multiphoton confocal microscope, Thermo Fisher Scientific (FEI) electron microscopes (SEM, FIBSEM, TEM) in the Imaging Core and Raith Pioneer and Voyager E beam lithography instruments, deposition and etching tools, along with measurement, characterization and analysis tools in the Cleanroom.

Office of Clinical Research
https://clinicalresearch.gwu.edu/

The George Washington Office of Clinical Research (GW OCR) is committed to providing high-quality support for the efficient execution and management of impactful clinical research while ensuring the highest level of research participant safety. OCR provides investigators with access to highly trained study coordinators, biostatistics consultation, grants and contracts and regulatory elements. OCR invests in software programs and standard operating procedures to streamline clinical and translational research (CTR) (i.e., OnCore, Forte, Protocol Builder, ACRP training, etc.). Consultation biostatistics support is available to advise on study design, data analysis plans, and sample size considerations during a study's planning phase. Additional support is available for study operations and regulatory support, as well as statistical data analysis and results interpretation to address research questions.

Office of Human Research (OHR)
https://humanresearch.gwu.edu/

The Office of Human Research (OHR) is the administrative support office for The George Washington University Institutional Review Boards (IRBs). The IRB is responsible for the review of all research activities that involve human subjects in accordance with federal regulations. Investigators can initiate and track the status of IRB applications within the human subjects module of GW iRIS. The system automatically routes applications for approval and streamlines the review process.

OHR's mission is to support the GW research community in the conduct of innovative and ethical research by providing guidance, education and oversight for the protection of human subjects.

Office of International Medicine Programs
https://imp.smhs.gwu.edu/

For 30 years, the Office of International Medicine Programs (IMP) at the GW School of Medicine and Health Sciences (SMHS) has cultivated global partnerships to create transformational mutual exchange in medical education, training, and research. IMP's goal is to provide life-changing opportunities to build the capacity of other countries and share the latest advances in medicine and healthcare. As a pioneer in international medical education, training, and research, IMP has developed, coordinated, and completed over 150 projects in over 50 countries, touching the lives of more than 15,000 healthcare professionals, students, and patients around the globe.

In addition, IMP partners with GW faculty to design and implement medical and research training programs both at GW and abroad. IMP further serves the SMHS community by providing safety and security resources for SMHS faculty and student travelers and supporting incoming international students and visiting scholars.

Office of Postdoctoral Affairs
https://gradpostdoc.gwu.edu/current-postdocs/benefits

Postdoctoral fellows are represented by the Office of Graduate and Postdoctoral Affairs to provide both financial and academic support as well as career development advice. This office is led by Suresh Subramanian. The GW Postdoc Association, a member-led organization, creates a sense of community and hosts a number of professional development and networking events throughout the year including the annual GW Postdoc Appreciation Week.

Office of Research Safety
https://researchsafety.gwu.edu/

ORS is a service organization within the Office for Vice Provost for Research with specialized knowledge and expertise in biological, radiation, and laser safety. ORS manages a broad range of regulatory obligations for George Washington University and works closely with allied departments (Office of Health & Emergency Management Safety, GWPD, Facilities Management, Risk Management, etc.) within the University and in our surrounding communities. ORS has an office on the Foggy Bottom campus.

Office of the Vice President for Research (OVPR)
https://research.gwu.edu

The OVPR provides grants management services from pre-award through post-award. The OVPR provides support for many of GW's core facilities. OVPR coordinates research salons designed to connect and engage GWU faculty from diverse disciplines in collaborative intellectual and scholarly exchange around research-themed issues, questions, and challenges.

- **GW's Research Enhancement Unit (REU)** provides the necessary training, environment, support, and information to enable them to further develop their skills and pursue research opportunities. REU helps GW investigators increase the competitiveness of their research proposals by providing consultative and scientific editing services; delivering professional development workshops, training and seminars; and facilitating collaboration for large, complex, international and multi-/cross-disciplinary proposals. https://research.gwu.edu/research-enhancement-unit
- **Research Commons** serves as a dynamic web portal network connecting students and faculty researchers with research opportunities, fellowships, jobs, events, and grant funding. https://researchcommons.gwu.edu/
- **Campus Safety** works with the laboratory researchers, Primary Investigators, and the Office of Vice President of Research to provide a safe and healthy work environment within all George Washington University laboratories. They provide education through training and assist in the development and implementation of emergency response procedures for university laboratories. They have developed environmental and occupational health and safety workplace policies and programs for the safety of the GW community. https://safety.gwu.edu/policies-procedures
- **Office of Human Research** provides guidance, education, and oversight for the protection of human participants in research. It provides administrative support for GW Institutional Review Boards (IRBs). https://humanresearch.gwu.edu/
- **Office of Research Integrity & Compliance** partners with members of the research community to ensure that our research programs comply with all federal, state, and local regulations and university policies. https://researchintegrity.gwu.edu/
- **Office of Research Safety** provides training, consultation and services in the areas of biosafety, radiation safety and laser safety. ORS also provides administrative support to the Institutional Biosafety Committee (IBC), the Institutional Animal Care and Use Committee (IACUC), and is the primary contact for federal, state, and local regulatory agencies regarding matters of laboratory safety and animal welfare. https://researchsafety.gwu.edu/

PI Dashboard
https://sponsoredprojects.gwu.edu/pi-dashboard

The Office of the Vice Provost for Research has partnered with GW's Business Intelligence Services to provide principal investigators with powerful online tools to access personalized award information. The research community can use these tools to make more informed project decisions by viewing financial and human resources information about awards at summarized and detailed levels.

REDCap
https://redcap.smhs.gwu.edu/

REDCap (Research Electronic Data Capture) is a secure web application for building and managing online surveys and databases. While REDCap can be used to collect virtually any type of data, it is specifically geared to support online data capture for research studies and operations. Redcap enables rapid project development and provides users with advanced functionality, complete autonomy and control of a project, and direct exports to common statistical packages. REDCap surveys and databases are HIPAA compliant and include audit trails.

Regional Medical Campus at LifeBridge Health
https://rmc.smhs.gwu.edu/

The Regional Medical Campus in Baltimore is designed for medical students who desire to train in a clinical environment of an integrated healthcare delivery system committed to population health. The Regional Medical campus is located at Sinai Hospital of Baltimore, part of the LifeBridge Health system. LifeBridge Health provides the full spectrum of outpatient and inpatient healthcare under one organization and partners with others to identify and address the social determinants of health impacting the communities it serves.

Research Pathology Core
https://smhs.gwu.edu/pcl/

The Pathology Core Laboratory is available to provide research services for both human and animal tissues, including tissue processing, embedding, sectioning, routine H&E and special stains, frozen sections, optimization and performance of immunohistochemistry, and electron microscopy. Pathology consultative services are also available.

Research Technology Services
https://it.gwu.edu/

George Washington Information Technology (GW IT) provides several research computing services for GW students, faculty, staff, and community members. Research Technology Services (RTS) operates as an official service center enabling cross-disciplinary research by delivering shared platforms and services and conducting applied research with GW, regional and national research partners.

Research Workforce Development
https://smhs.gwu.edu/research/research-workforce

The Office of Research Workforce Development enhances research professional skill development at all career levels including undergraduate, medical student, postdoctoral fellow, and faculty. A searchable faculty researcher database, push funding announcements in 25 research themes and specialized tools for faculty, graduate students and postdoctoral trainees enhance researchers are provided. Individual assistance in the development of NIH F, K, T and related mentored training activities and applications and scientific and professional development workshops and grant writing courses are available.

Responsible Conduct of Research (RCR)
https://researchintegrity.gwu.edu/responsible-conduct-research

The George Washington University offers the following to faculty and staff to become familiar with ethical standards in academia and research:

- **Responsible Conduct of Research Training**
  All faculty and students participating in research are required to complete the Responsible Conduct of Research training provided at GW.
  For the NIH RCR Training Plan, eight (8) hours of live RCR training must be undertaken at least once during each career stage throughout a scientist's career: i.e., at the undergraduate, post-baccalaureate, predoctoral, postdoctoral, and faculty levels. This training is required at a frequency of no less than once every four years.
    - Online RCR course offered through GW's arrangement with the Collaborative Institutional Training Initiative (CITI) found at https://www.citiprogram.org/.
    - The major introductory course required in the first year for PhD students is **BMSC 8217 "Ethics and Grantsmanship,"** a course led by Dr. Ljubica Caldovic, that includes:
      - Format: 11 face-to-face lectures consisting of discussion and student projects. This course uses texts and cases from Steneck, NIH Office of Research Integrity website, Macrina Scientific Integrity 4th edition and Bulger, Bioethics.
      - Subject matter: Ethics of biomedical investigation and principles behind the use of animals in research, research misconduct, human/clinical experimentation, data acquisition and management, stem cell research, responsible authorship and publication, peer review, mentoring, conflicts of interest and commitment, collaborative relationship.
      - Faculty participation: NIH-funded and training faculty facilitate lectures and small group discussions, with administrator subject matter experts as appropriate.
      - Duration of instruction: The graduate course occurs with 11 hours over a semester.
      - Frequency: Instruction occurs once during PhD study.
      - Compliance. Participation is confirmed by class registrations with the Institute of Biomedical Sciences (IBS) and is documented in all lectures by a sign-in sheet and headcount.
    - In addition, IBS PhD students complete **BMSC 8216 "Scientific Writing"** on how science writing differs from other kinds of writing, focusing on the writing of various types of scientific documents including abstracts, scientific papers, summaries of research findings from the literature, and utilizes a Scientific Writing textbook with exercises designed around research findings. A final course in **BMSC 8219 "Careers in Biomedical Science**" engages speakers from multiple research career sectors.
    - **Collaborative Institutional Training Initiative (CITI).** George Washington University offers the Collaborative Institutional Training Initiative (CITI) online responsible conduct of research training program, including (1) Introduction to the Responsible Conduct of Research; (2) Research Misconduct; (3) Data Acquisition and Management; (4) Responsible Authorship and Publication; (6) Peer Review; (7) Mentoring; (8) Conflicts of Interest and Commitment, and (9) Collaborative Relationships.
    - **Continuing Education in RCR** involves a combination of ongoing lectures and refreshers. PIs are encouraged to use best practices in their own research groups.

Shared Equipment
https://smhs.gwu.edu/research/research-toolbox/smhs-shared-equipment

The availability of equipment for discovery and translational research is a hallmark of an outstanding research environment. These elements are evaluated on grant applications and are important for recruiting research-active faculty, trainees, and staff. A list of shared equipment and contacts is updated regularly.

Small Animal Imaging Lab (SAIL)
https://cancercenter.gwu.edu/research/shared-resources/small-animal-imaging-lab-sail

Based at the GW Cancer center, the Small Animal Imaging Lab (SAIL) is a comprehensive imaging shared resource with state-of-the-art in vivo imaging technologies, overseen by a nationally renowned team. The lab provides advanced and affordable bioluminescence and fluorescence imaging technology and

diagnostic and image analysis for basic and translational research. SAIL supports GW Cancer Center investigators and clinicians throughout every phase of research to provide quantitative evaluation for biomedical studies.

Translational Health Sciences PhD
https://ths.smhs.gwu.edu/
This online program enrolls 15-20 students per year, preparing candidates with the knowledge and skills needed to facilitate and lead innovation in health care. This program prepares early career professionals to take leadership roles as change agents in rapidly evolving healthcare environments. Students develop expertise in complexity theory, organizational analysis, mixed methods research design, program theory and evaluation. As a low residency program, most learning occurs online. Students are on campus at the Virginia Science and Technology Campus (VTSC) two weekends per semester to participate in collaborative, interactive workshops that integrate material across courses in that semester.

Writing Resources
https://writingcenter.gwu.edu
GW also offers a variety of resources to assist students and faculty in academic writing. RefWorks is an online tool supported by Gelman Library that helps writers organize their research and create bibliographies (https://libguides.gwu.edu/citing). Writing in the Disciplines (WID) also provides resources and workshops (https://writingprogram.gwu.edu/wid-teaching-resources-faculty).