

Welcome!

Welcome to the 2018 Cores Fair!

The Fair is an opportunity for MCW faculty, staff, and student researchers to learn more about the unique and specialized shared services available on campus. This is also a great place to network with colleagues and find like-minded researchers.

We hope you will join us in recognizing the hard work of our core operators and support staff. This group of individuals includes knowledgeable technicians, experienced scientists, and subject matter experts who deliver high-quality products and services.

From the Research Resource Operations Committee, enjoy the fair!

Cecilia Hillard, PhD (Chair)

Hallgeir Rui, MD, PhD

Bill Sweeney, MS

Dana Jossie

Raul Urrutia, MD

Bill Cashdollar, PhD

Pam Stanick

Michael Gill



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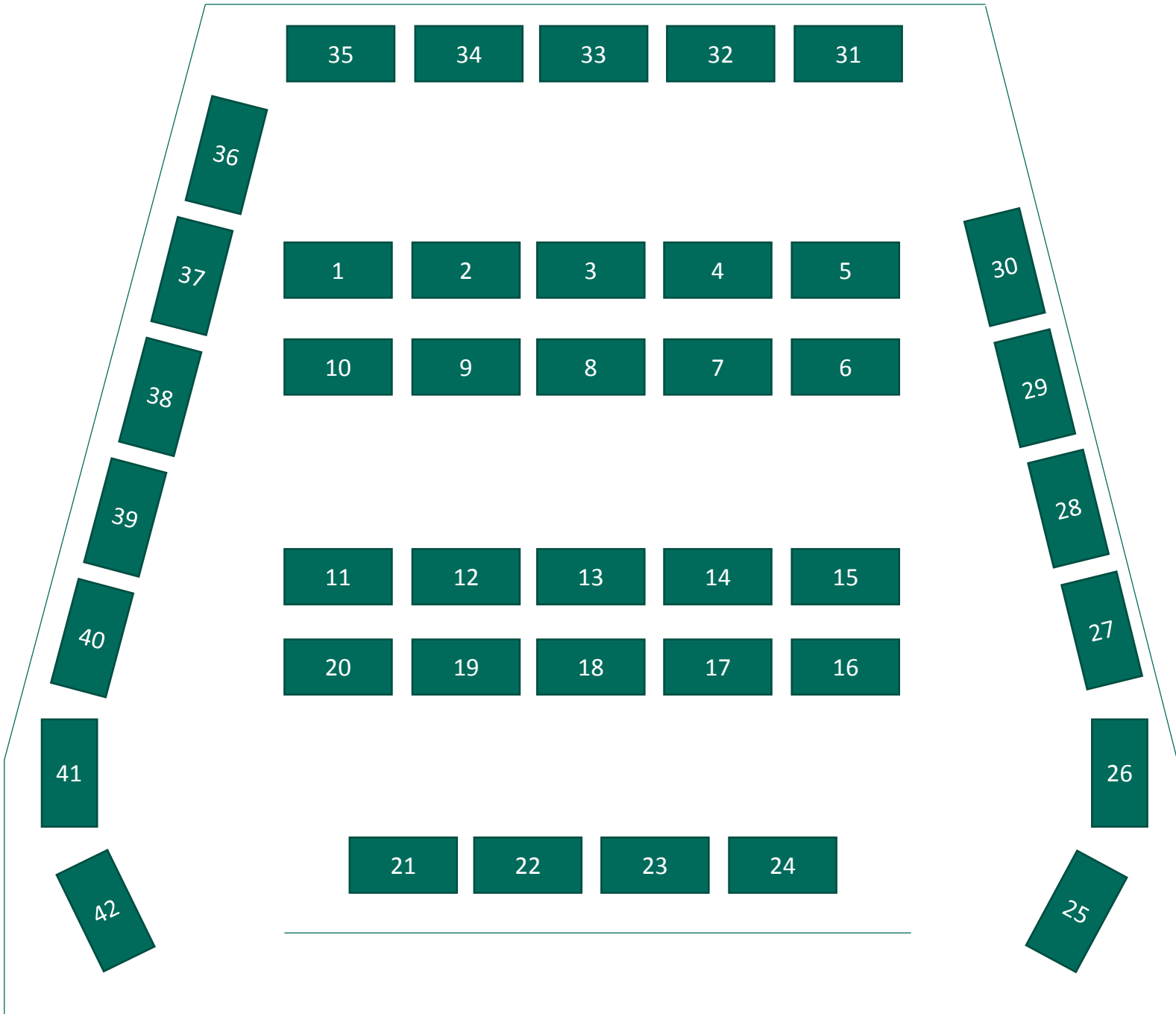
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A complete listing of MCW Cores can be found on the [Research Resources website](#).

Sign up for the [Cores Connection](#) to stay current on core-related news.

For inquiries about the website, the Cores Fair, or research in general, please contact research@mcw.edu.

Alumni Center Map

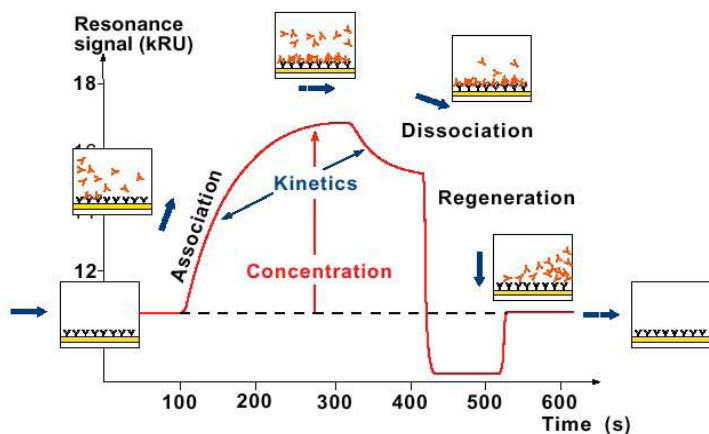


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Biacore 3000 Surface Plasmon Resonance

What Do We Do?

The Biacore team manages the Biacore 3000 instrument, which integrates surface plasmon resonance (SPR) technology with a microfluidics system to monitor molecular interactions in real time at concentrations ranging from pM to mM. This label-free technology can detect a wide range of molecular masses from 180Da to >1000kDa. The high sensitivity and high through-put capabilities allows for the detection of drug-protein, hormone-protein, protein-protein, DNA-protein, carbohydrate-protein, and lipid-protein interactions.



Equipment Available

Biacore 3000 Instrument: Housed in Biochemistry; available to trained MCW faculty and staff with the ability to use microfluidic-based instrumentation.

Training & consultation available on an appointment basis.

Contact Us:

Nancy Dahms, PhD
Department of Biochemistry
ndahms@mcw.edu | (414) 955-4698

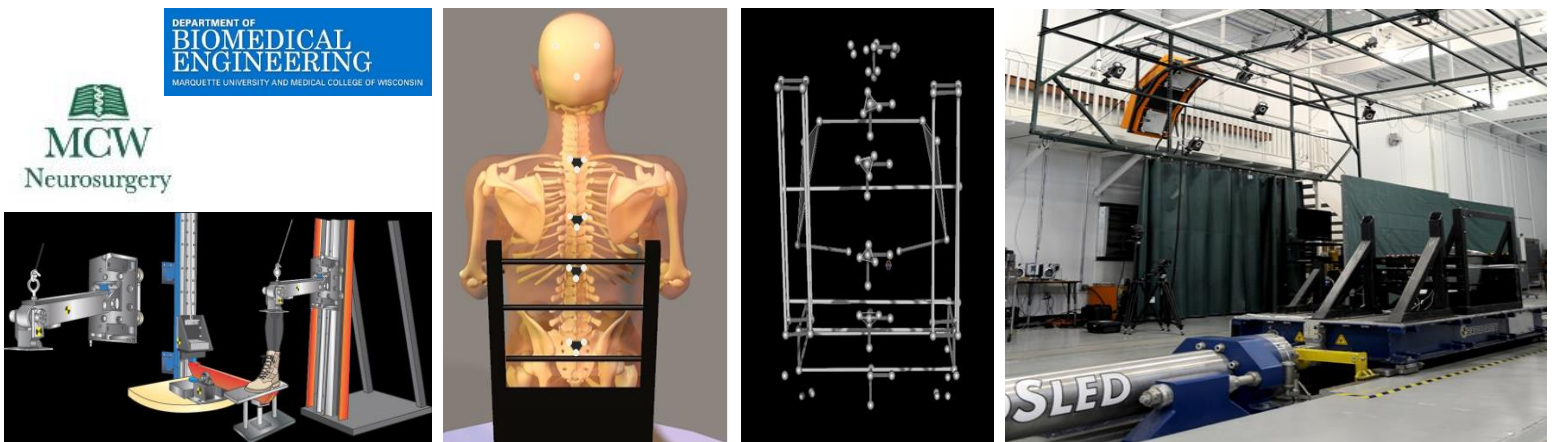
<https://www.mcw.edu/Biochemistry/Research-Facilities.htm>

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Biomechanics Core

What Do We Do?

Multiple specialty labs serve as the “Biomechanics Core” facilities. We are equipped with multiple small-animal injury models, including custom-designed equipment to deliver blunt or blast brain injury to rodents and tissue. We also have facilities and equipment for investigators who want to obtain mechanical or physical testing of specimens. Resources include bi-axial and uni-axial electrohydraulic pistons that apply simple or complex loads to biological or material specimens of various sizes. Additional devices include drop towers, pendulum impactors, pneumatically driven servo-sled accelerator, and a full-scale vehicle crash lab. High speed and 3D motion capture capabilities complement over 400 channels of data acquisition equipment.



Equipment Available

- 3D Motion Capture System
- High-speed video systems
- High-rate data acquisition systems
- Servo-sled accelerator to study occupant response
- Full-scale vehicle crash lab
- Shock-wave tubes for blast simulations on rodents, cells, and tissue
- Rotational acceleration brain injury device for rodents
- Behavioral lab: Morris Water Maze, Elevated Plus Maze, Open Field Test, Barnes Maze, Rotarod assessments
- Split-Hopkinson Pressure Bar
- Finite Element Mechanics Software

Contact Us:

Christy Stadig, MSPM, PMP
Program Director
Department of Neurosurgery
cstadig@mcw.edu | (414) 955-7107

Biomolecular NMR Facility

What Do We Do?

The NMR Facility is an interdepartmental research service unit administered by the Department of Biochemistry. High-field NMR spectroscopy is a powerful technique for the study of biomolecular structure, interactions and dynamics. The facility provides service for routine 1D and 2D solution NMR methods, and can also provide consultation and collaborative assistance with the acquisition and analysis of multidimensional, multinuclear protein NMR spectra. For some long-term projects, the facility provides training for instrument operation and data analysis to investigators and research personnel. The facility operates on a fee-for-service basis and is open to MCW faculty and outside researchers.



Typical Applications:

3D structure determination of small and medium-sized proteins

Analysis of ligand binding and protein-protein interactions

^{15}N and ^2H spin relaxation measurements of protein dynamics on ps to ms timescales

Detection of conformation equilibria by 2D exchange spectroscopy

Routine ^1H & ^{13}C 1D & 2D NMR spectroscopy of small molecules

Equipment Available

Bruker 800MHz Spectrometer: Equipped with a $^1\text{H}/^{13}\text{C}/^{15}\text{N}$ cryoprobe for enhanced sensitivity in biomolecular applications; automated sample handling robot for high-throughput screening applications.

600 MHz Spectrometer: Two machines, each equipped with a $^1\text{H}/^{13}\text{C}/^{15}\text{N}$ cryoprobe for enhanced sensitivity in biomolecular applications; automated sample handling robots for high-throughput screening applications.

500 MHz NMR Spectrometer: Equipped with a $^1\text{H}/^{13}\text{C}/^{15}\text{N}$ cryoprobe for enhanced sensitivity in biomolecular applications; cryoprobe is tunable to ^{19}F .

Contact Us:

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<https://www.mcw.edu/Biochemistry/Research-Facilities.htm>

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Biostatistics Consulting Service

What Do We Do?

The Biostatistics Consulting Service can help with your study from the planning stages to the manuscript. The Service is housed in the Division of Biostatistics within the Institute for Health and Equity and provides comprehensive statistical consulting to clients inside and outside MCW. Consulting services include assistance with design and analysis of clinical trials, observational studies and surveys, assistance with public databases, sample size and power calculations, and data analysis and interpretation. Additionally, our faculty and staff have extensive experience in grant preparation of NIH, NSF, CTSI, Department of Education, HERSA, Healthier Wisconsin, and VA grants. We have also helped prepare proposals for a number of private research foundations. Consulting is provided by Biostatistics faculty and staff. Staff consultants are supervised by a member of the faculty. Consulting services are offered for a standard fee and are provided on an appointment basis. After the initial consultation, a time estimate is provided.



Consulting Services:

- Study Design: Grant Proposal, Sample Size, Clinical Trials
- Advice for Data Management
- Randomization
- Modeling
- Statistical Graphics
- Interpretation of Results
- Assistance with Manuscripts

Weekly Drop-In Sessions are available for quick questions:

Mon: 1-3 p.m. @ MEB #M3250

Wed: 10 a.m. – noon @ CLCC #C5407

Fri: 1 - 3 p.m. @ CLCC #C5407

Contact Us:

consult@mcw.edu | (414) 955-8280

<https://www.mcw.edu/Biostatistics-Consulting-Service.htm>

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BRI Flow Cytometry Core

What Do We Do?

The Flow Cytometry Core Laboratory provides flow cytometric analysis and cell sorting. An experienced Flow Cytometry Specialist is in charge of the lab and will help with experimental design, data analysis and will train new users. We primarily serve internal investigators on a first-come, first-serve basis, and assist outside users as capacity permits. New users must attend a free training session prior to using the analysis instruments. Sample preparation is always critical to success, therefore we invite researchers to discuss their protocols with us in advance.



Equipment Available

BD LSR II Flow Cytometer: 10 color & 12 parameter acquisition; 4 laser system; BD HTS can be used on this instrument; reads 96 well & 384 well microtiter plates.

BD LSR II Special Order System: 12 color & 14 parameter acquisition; 4 laser system; BD HTS can be used on this instrument; reads 96 well & 384 well microtiter plates.

BD FACSAria Cell Sorter: 10 color & 12 parameter acquisition; 4 laser system.

BD FACS Melody Cell Sorter: 9 color & 10 parameter acquisition; 4 laser system; self-service after training.

Accuri C6: 4 color & 6 parameter acquisition; 2 laser system

Software Available:

- FlowJo
- FCS Express
- FACSDiva
- CFlow Plus

Miltenyi Biotec Magnetic Cell Separation Workstation also available.

Contact Us:

Benedetta Bonacci
Flow Core Lab Operator

benedetta.bonacci@bcw.edu | (414) 937-3843

Blood Research Institute, West Wing, #269 – 270

<https://www.bcw.edu/bcw/Research/core-labs/flow-cytometry/index.htm>

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What Do We Do?

The Protein Core Lab at the Blood Research Institute provides services in the areas of custom Fmoc solid phase peptide synthesis, peptide purification, mass spec verification, coupling peptides to carriers for antibody production and labeling peptides. Other core services are consultation on sequence selection for antigenicity, and consultation on project design and feasibility.



Custom Peptide
Synthesis

Post Synthesis
Modifications

Peptide
Labeling

Modifications Available:

- C terminal labeling: Amidation
- N terminal labeling: Acetylation; Biotinylation; Fluorophores and Myristylation
- Cyclization: Disulphide; End to End; Hydrocarbon Stapling
- Backbone Modifications: D-enantiomers; N-methylamino acids; Peptoids
- Conjugation and Labeling: Carrier Proteins; Stable Isotope Labeling; Click Chemistry and PEGylation
- Special Amino Acids: Phosphoamino Acids; Dipeptides to Overcome Aggregation; Pseudoproline Derivatives and Non-Natural Amino Acids

Different types of resins and loading levels are available.

This is useful for optimizing a synthesis, especially for difficult sequences.

Contact Us:

Trudy Holyst, MS

Lab Operator

m.holyst@mcw.edu | (414) 937-3845

Blood Research Institute, West Wing, Room #273

<https://www.bcw.edu/bcw/Research/core-labs/protein-chemistry/index.htm>

Cancer Center Biomedical Imaging Shared Resource

What Do We Do?

The Biomedical Imaging Shared Resource (BISR), led by Amit Joshi, PhD, and Peter LaViolette, PhD is a Cancer Center resource that provides access to in vivo biomedical imaging instrumentation, customized imaging technologies, and image processing/analysis services for the basic and clinical cancer researchers. The shared resource was founded in 2010 to complement the MCW Center for Imaging Research (CIR) by providing additional small animal imaging technologies with an emphasis on cancer research, and provide access, training, and collaboration interface to MCWCC members. The equipment utilized by the BISR are centrally located and easily accessible to MCWCC members in both the clinical and basic science departments, with convenient and protected access to animal facilities.

Equipment Available

MRI: Preclinical & clinical magnetic resonance imaging (MRI) at field strengths from 1.5 to 9.4T

GE Micro-CT/SPECT Scanner: Preclinical scanning

PerkinElmer IVIS 100®: Bioluminescence imaging via

Specialized Instrumentation: Visible/near-infrared fluorescence, shortwave-infrared, and thermographic optical imaging instrumentation developed in-house.

Ancillary support for small-animal housing, physiological monitoring, 3D printed animal holders, surgical procedures and basic wet chemistry is also available.

Cancer Center members are supported by this resource.

Non-members should contact the Center for Imaging Research.

Contact Us:

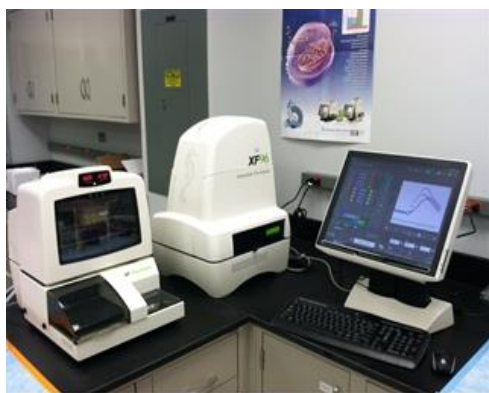
Amit Joshi, PhD
BISR Director
Associate Professor of
Biomedical Engineering
ajoshi@mcw.edu | (414) 955-7588

Peter S. LaViolette, PhD, MS
BISR Co-Director
Assistant Professor of Radiology and
Biomedical Engineering
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Cancer Center Redox & Bioenergetics Shared Resource

What Do We Do?

The MCW Cancer Center Redox and Bioenergetics Shared Resource (RBSR) plays a campus-wide, critical role in providing state-of-the-art equipment and services to support studies on bioenergetics, metabolism and redox signaling in cancer cells and normal cells. We offer robust expertise and assist investigators in performing a wide range of experiments in a cost-efficient manner. The staff is known worldwide for the development of new probes and novel approaches for rigorous detection of ROS in biological systems.



Services Offered:

- Real-time Flux Analysis
- LCMS Metabolomics
- ROS Measurements
- Development of Mitochondrial-Targeted Therapeutics

Equipment Available

Seahorse XF-96: Measures rate of change of analytes dissolved oxygen and pH in media immediately surrounding living cells cultured in a microplate. Changes in extracellular media are caused by consumption or production of analytes by cells. Therefore, sensitive measurement of media flux can be used to determine rates of cellular metabolism with great precision and in a totally noninvasive, label free manner. The analyzer can make measurements in as little as five minutes. Cells can be profiled over a period of minutes, hours, or days.

Shimadzu UHPLC-MS/MS: Equipped with fastest MS/MS detector on the market. System includes PDA UV-vis absorption, fluorescence, and 8030 triple quad MS/MS detector. Used for high-speed targeted metabolomics for bioenergetics, pharmacokinetics of experimental anti-cancer drugs, and structural conformation of newly synthesized compounds/drugs.

Contact Us:

Steve Komars
Lab Manager, RBSR
skomas@mcw.edu | (414) 955-4059

MACC Fund Research Center, 2nd Floor, #2013; Monday – Friday, 8 a.m. – 5 p.m.
<https://www.mcw.edu/Redox-Bioenergetics-Shared-Resource-RBSR.htm>

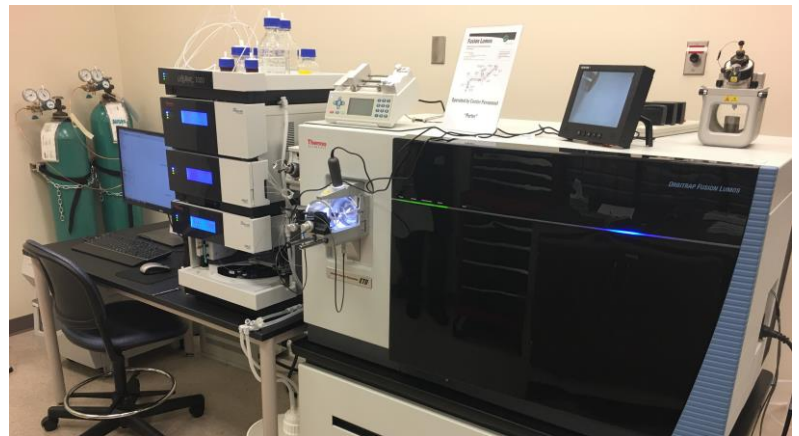
Center for Biomedical Mass Spectrometry Research

What Do We Do?

The Center for Biomedical Mass Spectrometry Research provides access to basic and advanced mass spectrometry technologies for biomedical research to investigators at MCW and partner institutions. Our technologies support targeted and discovery-driven analyses of biological molecules, including identification, characterization, and quantitation of peptides, proteins, glycans, metabolites, and small molecules. We operate with a flexible and collaborative model designed to provide investigators with access to state-of-the-art mass spectrometry and bioinformatics in the manner best suited to each individual project. All projects begin with a consultation with CBMSR experts, and range from routine service to highly individualized novel technology development. In addition to our service mission, we actively develop and disseminate novel methodologies and protocols to enable new types of analyses and educate trainees, staff and faculty in the applications of mass spectrometry in biomedical research.



**Center for Biomedical
Mass Spectrometry Research**



Services Offered

- Collaborative agreement, fee-for-service, and self-service modes
- Training workshops for advanced data analysis and self-service usage
- Monthly MS seminar and discussion group
- State-of-the-art instrumentation and bioinformatics

**All projects begin with a
consultation with CBMSR experts.**

**To schedule your free
consultation, visit our website
and click on the “Schedule an
Appointment” link.**

Contact Us:

Rebekah Gundry, PhD
Center Director

Theodore Keppel, PhD
Research Operations Supervisor

mscenter@mcw.edu | (414) 955-8482

Center Location: TBRC #C0830; Consultation Office: BSB #376D

<https://www.mcw.edu/mscenter>

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What Do We Do?

The Center for Imaging Research (CIR) unites basic and clinical scientists of various disciplines to further the development and application of imaging in health and disease. Investigators from institutions across the Midwest utilize CIR resources. Our state of the art facilities and technical support infrastructure provide users with tools required to perform basic and clinical imaging research studies. Support is available from staff and faculty level physicists on a fee-for-service model. This support can be used to protocol experiments, develop novel image acquisitions, and assist in image analysis. For pre-clinical work, an animal “drop-off” service is available to aid in the preparation and handling of small animals in imaging studies. With these services, the goal of the CIR is to lower the “barrier to entry” for imaging studies. Ultimately, researchers with questions that can be answered with MRI can use the services of the CIR to tailor an imaging experiment and understand its outcome.

Equipment Available

The CIR maintains 4 research-dedicated MRI systems as well as a GE Healthcare Advantage Workstation with VolumeShare 7.0.

- 3.0T GE Healthcare Discovery MR750 located in the Froedtert Pavilion
- Newest generation 3.0T GE Healthcare Signa Premier located in the MFRC MRI annex
- 7.0T GE Healthcare MR950 located in the MFRC MRI annex
- Pre-clinical 9.4T Bruker Biospec located in the MFRC MRI annex

The CIR Pilot Program awards up to \$5,000 of intramural funding:

Imaging-based projects, including clinical & pre-clinical body, cancer, musculoskeletal, neurological, orthopedic, small animal or vascular projects using 3T, 9.4T or SPECT-CT

Rolling Availability • Use Towards Set-Up, Support & Expenses

Contact Us:

Debra Keiler

dkeiler@mcw.edu | (414) 955-4663

<http://www.mcw.edu/CIR.htm>

Center for Microbiome Research

What Do We Do?

The Center for Microbiome Research (CMR) facilitates collaborative research, provides specialized research resources, and promotes education. A microbiome is defined as the totality of microorganisms and their collective genetic material present in or on the human body or in another environment. This ecological community consists of bacteria, viruses, fungi, yeasts, and protozoa. Each body site has a distinct microbiome, but the vast majority of the microbiota reside in the GI tract. The precise composition of a physiological microbiome is affected by host diet, age, genetics, exposure to drugs, and other environmental factors. Disrupted microbiomes have been correlated with a number of disease states including obesity, diabetes, asthma, eczema, heart disease, celiac disease, colitis, neuropsychiatric disorders, and some cancers.



Benefits:

- Collaboration with MCW, CHW & BRI investigators
- Gnotobiotic Core Facility (GCF) use
- Training and assistance in sample collection, processing & sequence coordination
- Invited speaker seminar series & bioinformatics workshops

Services Offered

- Consultation: Study Design & Funding Applications
- Microbiome-targeted Sample Collection & Processing
- Gnotobiotic Core Facility: Axenic and gnotobiotic rodent husbandry & experiments
- Bioinformatics & Biostatistics
- Mini-GF Gnotobiotic Isolators: MoBio Powerlyzer & FreezerPro Biorepository Mgmt Software

Contact Us:

Nita Salzman, MD, PhD
Center Director

msalzman@mcw.edu | (414) 955-4244

Mary Holtz, PhD
Program Manager

mlholtz@mcw.edu | (414) 955-5467

MACC Fund Research Center, 5th Floor, #5029; Email for an appointment

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What Do We Do?

Established in 2005, the CHW/MCW Pediatric Echocardiography Research Lab is currently located in the Herma Heart Center, Children's Hospital of Wisconsin. The lab has successfully performed echocardiograms and analyzed echocardiographic data for internal and external projects. We have trained staff with expertise in congenital heart disease and pediatric and adult echocardiography (including 2D, 3D, and myocardial deformation imaging). The lab has received multiple NIH sub-contract grants from the Pediatric Heart Network (PHN) to act as an echo core lab for several large, multi-institutional trials focused on pediatric heart disease.

Equipment Available

Hardware:

- TomTec Image review stations (3)
- Syngo® Ultrasound Workplace

Software:

- Image Arena 4.6: 2D echo diagnostic and report management system
- 2D Cardiac Performance Analysis: Myocardial deformation analysis tool
- 2D Image, Speckle tracking Velocity Vector Image, Syngo-Software (Siemens®)

Ultrasound Equipment:

- Accuson SC2000 (4 MHz 2D imaging and 4 MHz 3D imaging probes)
- Phillips IE33 (12, 8, 5 MHz 2D imaging and 7 and 3 MHz 3D imaging probes)

Services Offered Include:

- Performance of pediatric/adult 2D & 3D echo imaging studies
- Protocol development/consultation
- Data collation, collection management, and tool development
- Acquiring echocardiographic measurements for data comparison
- Physician/technical image review
- Investigator planning consultations
- Writing of echo components of protocols, abstracts & manuscripts
- Study subject screening, image de-identification, transfer & archiving
- Echo image analysis training

Contact Us:

Megan Schoessling, RDCS, BS
Research Lab Manager
mschoessling@chw.org

Jessica Stelter, RDCS, BS
Research Sonographer
jstelter@chw.org

Clinical Research Data Warehouse

What Do We Do?

The Clinical Research Data Warehouse (CRDW) is housed within the CTSI Biomedical Informatics Core. The CRDW provides CTSI research teams with free self-service* data query and extraction tools to access anonymized clinical data for research cohort discovery/feasibility as well as de-identified data extraction for retrospective review. Investigators with approved IRB protocols can request identified data for prospective recruitment and/or data collection once they link their studies to our research data bank protocol on eBridge.

*Non-standard CRDW services are provided on a fee-for-service at a rate of \$100/hour



How Can Investigators and Their Teams Get Access?

1. Join the CTSI at <https://ctsi.mcw.edu/about/join-ctsi/>
2. Complete MCW's CITI Training Modules for Human Subjects Research
3. Complete an Access Form at <https://ctri.mcw.edu/cda/i2b2-cohort-discovery-tool/>
 - a) CRDW Query Tool Access (for query tools only)
 - b) CRDW Data Release Agreement (for query and extract tools)

Available CTSI Biomedical Informatics Services

CRDW: <https://ctri.mcw.edu/cda/i2b2-cohort-discovery-tool/>

REDCap: <https://ctri.mcw.edu/research-data-management/redcap/>

Image De-Identification Service Center: <https://ctri.mcw.edu/cda/deid/>

Faculty Collaboration Database: <https://fcd.mcw.edu/>

Contact Us:

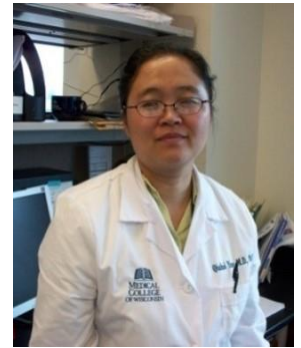
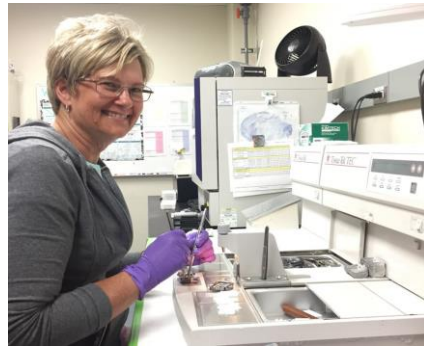
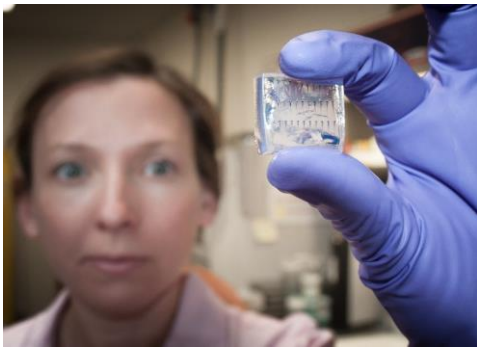
Kristen Osinski, MS
Business Analyst, Biomedical Informatics
kosinski@mcw.edu | (414) 805-7245
Monday – Friday, 8 a.m. – 5 p.m.

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CRI Histology Core

What Do We Do?

The CRI Histology Core offers a broad range of high quality histological and immunohistochemical services on a fee-for-service basis to investigators from CHW, MCW and off-campus institutions. Our staff includes ASCP certified Histologists and American Board of Pathology certified Pathologists who provide service, assistance, and quality control. Our services include frozen and fixed tissue sectioning, paraffin processing of fixed tissue, Cryostat and Microtome sectioning, routine H&E staining and specialized histochemical staining, Cytospin preparation, immunohistochemical and immunofluorescent staining, and optimization of immunostaining protocols using investigator provided antibodies. We also provide training for Immunohistochemistry and Histochemical techniques.



Equipment Available

- Sakura Automated Tissue Processors VIP5 (x2)
- Sakura Automated Tissue Processor VIP6
- Sakura Prisma Automated Stainer
- Sakura Glass Coverslipper
- Sakura Tec-5 EMA1 Embedding Center
- Microm Automated Microtome (x2)
- Leica Slide Printer and Labeler
- Leica Bond MAX Immunostaining Platform
- Leica Bond Rx Immunostaining Platform
- ThermoShandon Cytospin 2

Histology Equipment is used by Core Staff only. Work is done on a first-come-first-serve basis.

Contact Us:

Christine Duris, BS, HTL(ASCP), QIHC(ASCP)^{CM}
Supervisor

Tanya Bufford, HT(ASCP)
Histotechnician

Jason Jarzembowski, MD, PhD
Medical Director & Chief, Pediatric Pathology

(414) 955-8624; TBRC, 4th Floor, #C4305; Monday – Friday, 8 a.m. – 4 p.m.

Stephanie Wirbinski, HT(ASCP)^{CM}
Histotechnician

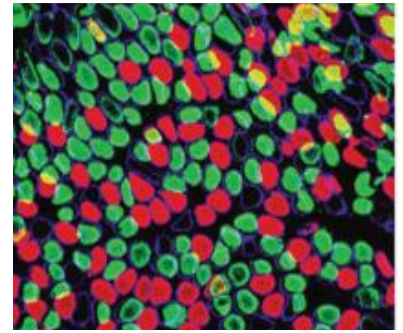
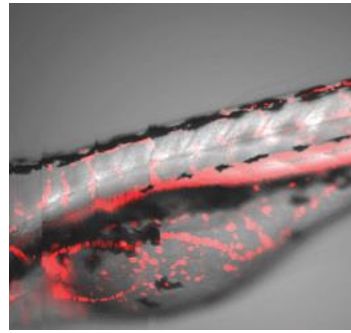
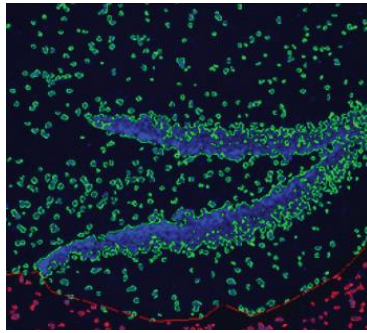
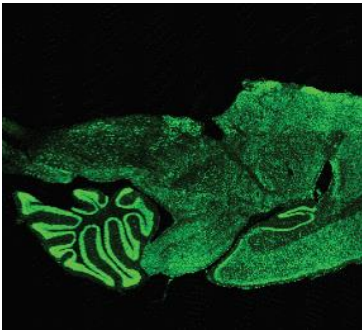
Qihui Yang, MD, PhD, HTL(ASCP)^{CM}
Research Scientist/Histotechnologist

Paula North, MD, PhD
Histology Core Scientific Director

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What Do We Do?

The Children's Research Institute Imaging Core is a fee-per-use facility that's open to investigators to collect research data. Users are provided with hands on training and assistance with a variety of state of the art microscope systems. Operated by the Pediatric Pathology Division at MCW and the CRI, our microscopy-based Imaging Core is open to all investigators at MCW collaborating institutions. Access to the microscopic and imaging systems is monitored and accessed by signup sheets, card reader entry and individualized computer account sign-on. Unassisted use of Imaging Core equipment requires prescribed training.



Equipment Available

- Zeiss Axio Imager Z1: widefield side imaging
- Zeiss Axio Vert 200M: slide, culture dish & plate imaging
- Zeiss P.A.L.M. Microbeam III: isolating specific regions/single cells from tissue section
- Zeiss LSM510 Confocal: confocal slide imaging
- Zeiss LSM510 META NLO multiphoton: live cells, small animals, deep tissue & more
- Hamamatsu Nanozoomer Slide Scanner: high-res slide scanning & analysis
- Olympus VS100 Fluorescent Slide Scanner: high-res scanning & analysis of fluorescent slides
- Compucyte iCys: flow cytometry-like analysis

Contact Us:

Suresh Kumar, PhD
Scientific Director
skumar@mcw.edu | (414) 955-2448

TBRC, 4th Floor; Monday – Friday, 8 a.m. – 5:30 p.m. (trained users can access 24/7)
<https://www.chw.org/medical-professionals/research/researcher-resources/research-cores/imaging-core>

CTSI Adult Translational Research Unit

What Do We Do?

The CTSI's Adult Translational Research Unit (A-TRU) offers diverse services for successful conduct of clinical research protocols. These services are provided by competent staff, who are trained in research protocol execution to ensure safe and ethical conduct of research. The ATRU is conveniently located within Froedtert Hospital and can accommodate outpatient, inpatient and community based study requests.

Services Offered

Clinical Services:

- Phlebotomy with processing & shipping of samples
- EKG recording (without interpretation)
- Study drug IV infusions with monitoring
- Fat and punch biopsies, lumbar punctures
- Any other complex procedure as defined by the study protocol

Bio-nutrition Services:

- DXA scans
- Indirect calorimetry
- Dietary assessments – nutritional analysis, food frequency questionnaires, food diaries
- Lifestyle counselling
- Research meals preparation and dispensation

Core Lab Services:

- Processing & shipping of samples
- Long and short term storage and inventory control of samples (-20 and -80 Freezers)
- Point of care lab assessments
- In-house assessment of more than a 100 specialized tests

Contact Us:

Orsolya Garrison, Dr.PH, MPH
TRU Administrator
ogarrison@mcw.edu

Tom Aufderheide, MD, FAHA
TRU Medical Director
taufderh@mcw.edu

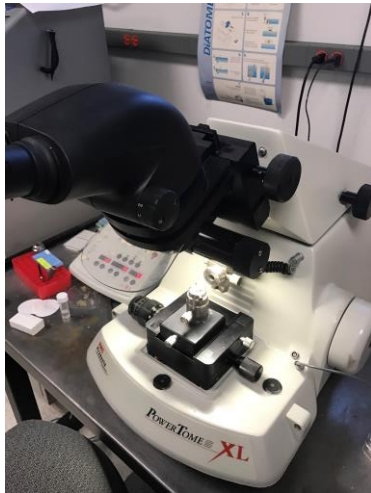
Monday – Friday, 7:30 a.m. – 4:30 p.m.

<https://ctsi.mcw.edu/investigator/ctsi-cores-facilities-services/a-tru/>

Electron Microscopy Core Facility

What Do We Do?

The Electron Microscopy Core Facility is an interdepartmental research service unit managed on behalf of the Medical College by the Department of Microbiology and Immunology and the Department of Cell Biology, Neurobiology and Anatomy. The facility provides service, consultation for research and some training for projects requiring transmission electron microscopy. Services include complete tissue processing facilities, immunoelectron microscopy, negative staining, enzyme cytochemistry and ultrastructural Electron Tomography. The Facility operates on a fee-for-service basis and is open to all MCW faculty, staff, and students, and investigators at affiliated and non-MCW institutions.



Equipment Available

- JEOL 2100 electron microscope equipped with a 2K x 2K ultrahigh resolution digital camera
- Hitachi 600 electron microscope
- Leica EMPact 2 high pressure freezing apparatus
- Leica Automated Freeze Substitution Apparatus
- RMC PowerTome & Leica Ultracut UCT ultramicrotomes

Contact Us:

Clive Wells, CBiol, FRSB, FRMS
Director
cwells@mcw.edu | (414) 955-8141

Rob Goodwin, BS
Technician
rgoodwin@mcw.edu | (414) 955-8344

MACC Fund Research Center #4041; Monday – Friday, 7:30 a.m. – 6 p.m.

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Epidemiology Data Resource Center

What Do We Do?

The Epidemiology Data Resource Center (EDRC) is MCW's centralized resource for secondary health and demographic data. The EDRC also provides assistance in the use of spatial data and geographic information systems, or GIS. Since opening its doors in 1994 (as the Epidemiology Data Service Center), the EDRC has provided data assistance to faculty, staff, and graduate and medical student researchers in epidemiology, health services, health policy, and other related disciplines.

Services Offered

- Provides summary statistics and prepares data set extracts
- Lends data management and preparation expertise
- Assistance with long-term secondary data research projects
- Mapping and other GIS services
- Use of REDCap Survey for primary data collection
- Use of HCUP, NIS, and KID Databases
- Assistance with accessing secondary data from other sources such as US Census, NCHS, etc.

Data Use Agreement and/or IRB Approval may be necessary depending on project.

Hourly fees may apply.

Contact Us:

Tom Chelius, MS
EDRC Coordinator
edrc@mcw.edu | (414) 955-8040

<https://www.mcw.edu/Epidemiology-Data-Resource-Center-EDRC/Services.htm>

Monday – Friday, 9 a.m. – 5 p.m.

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GSPMC Rat Models for Research

What Do We Do?

The Genomic Sciences and Precision Medicine Center (GSPMC) Rat Research Model Service Center maintains various rat strains for researchers that can be purchased upon request. We also provide genotyping services including gel based assays and fluorescent fragment analysis. The Rat Transgenic Service Center creates custom rat strains on a fee-for-service basis.

RAT PRICES	per rat
SS (on Dyets) & SSBN consomics	\$84.29
FHH, FHBN consomics, & transgenic	\$84.59
BN	\$95.83
"LOW" strains (GK & T2DN)	\$99.43
"MEDIUM" strains + KO (16 mutant strains)	\$94.98
HS rats	\$100.00

Colony maintenance (per hour)	\$33.11
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CRYOPRESERVATION	cost per project
Sperm cryo (ICSI)	\$334.71
Embryo cryo	\$6,805.55
Rederivation from ICSI	\$3,642.98
Rederivation from embryo	\$2,202.38

INTERNAL		
Service Code	8 sample minimum	+Each additional
DNAPREP*	\$10.42	\$ 1.30
GELGENO	\$21.93	\$ 2.74
FLUORGENO	\$24.20	\$ 3.02
CONSULT	\$43.75	
Average cost/sample (above 8)		
Gel Genotyping:	\$ 4.04	
Fluorescent Genotyping:	\$ 4.32	
*no discounts for previously extracted DNA		

EXTERNAL		
Service Code	8 sample minimum	+Each additional
DNAPREP*	\$13.03	\$ 1.63
GELGENO	\$27.41	\$ 3.43
FLUORGENO	\$30.25	\$ 3.78
CONSULT	\$54.69	
Average cost/sample (above 8) <i>(bulk rates negotiable)</i>		
Gel Genotyping:	\$ 5.05	
Fluorescent Genotyping:	\$ 5.40	
*no discounts for previously extracted DNA		

Services Offered

GELGENO: Primarily used for transgenics

FLUORGENO: Used for knockouts, consomics, congenics, etc. (Most samples fit in this category)

CONSULT: A single flat fee for new projects that require extensive research into the construct of model; we will let you know in advance if this fee will be necessary

For a list of available strains, visit the Rat Genome Database:

<https://rgd.mcw.edu/rgdweb/models/gerrc.html>

Contact Us:

GSPMC Rat Research Model Service Center

mcwcustomrats@mcw.edu

<https://www.mcw.edu/Genomic-Sciences-Precision-Medicine-Center/Other-Research-Service-Centers/Rat-Research-Model-Service-Center.htm>

GSPMC Sequencing Core

What Do We Do?

Established in 2008, the Genomic Sciences and Precision Medicine Center (GSPMC) Sequencing Core is a full service, comprehensive reference laboratory offering some of the most advanced assays on the market today. GSPMC basic & clinical scientists enable researchers and clinicians to use genome sequence to understand disease, improve diagnosis and advance the treatment of our patients. We offer a broad range of research assays and services to assist in your research Initiatives from nucleic acid extraction to comprehensive data analytic solutions for basic, translational, and clinical research as well as functional validation of disease-associated genomic variants.



Services Offered

- Whole exome & genome sequencing, RNA-Seq, ChIP-Seq and RRBS
- Data analysis & validation for precision diagnostics and therapeutics in pediatric & adult patients
- Current equipment: Three Illumina HiSeq 2500s, One Illumina MiSeq, One ABI3730xl sequencer
- Coming Soon: 2nd Gen Pacific Biosciences sequencer (the Sequel) uses extremely long sequencing reads (10-20kB) at the genome level to answer questions pertaining to structural variants, translocation events, and repeat disorders; New Illumina NovaSeq 6000 (early 2018)

Contact Us:

GSPMC Business Office

gspmcbusinessoffice@mcw.edu | (414) 955-2550

Health Resource Center, 5th Floor, #H5200

<https://www.mcw.edu/Genomic-Sciences-Precision-Medicine-Center/Research-Sequencing-Laboratory.htm>

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GSPMC Transgenic Core

What Do We Do?

The Genomic Sciences & Precision Medicine Center (GSPMC) Transgenic Core offers a variety of services involved in the production and maintenance of genome edited mouse models. Using pronuclear microinjection or blastocyst injections, the Core can produce transgenic animals for your lab. Whether you wish to inject CRISPR/Cas9, a plasmid or ES cells, the Core is able to produce transgenic animals for your research needs. The Core has the ability to cryopreserve mouse embryos and sperm to prevent the loss of valuable mouse lines through breeding failure or disease, as well as to eliminate per diem rates for lines that are not being used. We can perform in vitro fertilization or embryo transfer surgeries to revive cryopreserved germplasm for labs that wish to recover a line. The Core is also able to clean mouse lines free from viruses and pathogens such as parvovirus and pinworm.



Services Offered

- Genome edited mice and rats
- Embryo & Sperm cryopreservation and recovery
- In Vitro Fertilization
- ES cell targeting and blastocyst injection
- Strain rederivation

Contact Us:

Shawn Kalloway
Lab Supervisor
skallowa@mcw.edu | (414) 955-4641

Hartmut Weiler, PhD
Director
hartmut.weiler@bcw.edu

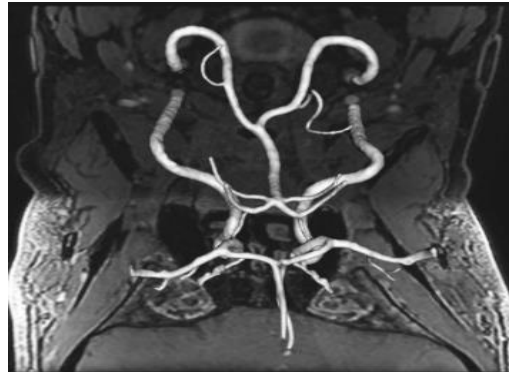
TBRC Vivarium, #C1430; Monday – Friday, 8 a.m. – 4 p.m.

<https://www.mcw.edu/Genomic-Sciences-Precision-Medicine-Center/Other-Research-Service-Centers/Transgenic-Core-Facility/Ordering.htm>

MCW Engineering Design and Fabrication Lab

What Do We Do?

The mission of the MCW Engineering Design and Fabrication lab is to support the medical research effort carried out by our research labs and clinical partners through a range of services including custom research device design and fabrication, laboratory equipment calibrations and repair, 3D-Printing services including anatomical models from CT and MR data, and new protocol development. Simply put, we can do more than we can list on a flyer! Please ask about our services and we will be happy to work with you to determine if our services are a good match for your research needs.



LEFT: Patient CT of brain aneurysm; RIGHT: 3D model of same aneurysm printed from CT data

Services Offered

- Equipment repair
- Instrument calibration
- Custom device design and fabrication
- 3D printing services: Patient-specific anatomical models from CT or MR; Novel devices; Student teaching aids
- Equipment preventive maintenance
- New equipment installations

**We love supporting
MCW researchers!**

**We look forward to
discussing how we may
support your research
effort!**

Contact Us:

Bonnie Freudinger, ME
MCW Engineering Lab Supervisor
bfreudinger@mcw.edu | (414) 955-4722
Basic Science Building, 5th Floor, #530

What Do We Do?

With locations at MCW, Froedtert Hospital, and Children's Hospital (CHW), MCW Libraries is the primary provider of information services to 19,000+ MCW faculty, residents, students and staff, and hospital employees of CHW and Froedtert. We also provide information services/health care information to patients and their families. All three libraries are open to the public. As a designated "Resource Library" within the Regional Medical Library program, we are also responsible for providing medical information services to the 5.5 million people of Wisconsin.



Services Offered

- Searching for Grant Funding
- Reaching NIH Public Access Policy Compliance
- Finding Journal Rankings and Showing Research Impact
- Searching for Literature
- Poster Printing

Our internal poster printing service for MCW faculty, staff, students & residents creates high-quality prints on plain or glossy paper or fabric.

Our large-format printer can print up to 60 inches wide. Prices range from \$25 to \$50 for normal service.

Contact Us:

Todd Wehr Library
MEB, 3rd Floor; Monday – Friday, 7:30 a.m. – 6 p.m.; MCW badge access available 24/7

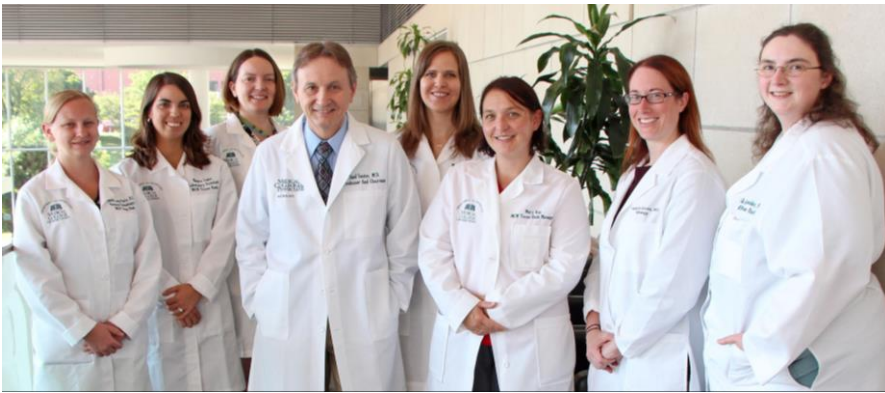
Library Information
asklib@mcw.edu | (414) 955-8302
<https://www.mcw.edu/Libraries.htm>

Poster Printing Service
posterprinting@mcw.edu | (414) 955-8300
<https://www.mcw.edu/Libraries/Forms/Poster-Printing.htm>

MCW Tissue Bank

What Do We Do?

The MCW Tissue Bank is a secure storage facility that collects, processes and distributes blood and tissue for research here on campus. We consent for one additional blood draw during a regularly scheduled clinic procedure and the collection of any future surgery discard samples such as tumor, bone marrow and normal tissue. Our streamlined, IRB-approved process allows researchers to query available samples and de-identified clinical data with the help of CTSI's i2b2 Cohort Discovery Tool. We also work to accommodate researchers in prospective studies.



Services Offered

- DNA/RNA Isolations
- Snap Frozen Tissue
- Plasma
- Buffy Coat
- Unstained Slides
- Sample QC
- 24/7 Monitored Storage
- -80°C Freezers
- H&E Stained Slides
- OCT Embedded Tissue
- Fresh Cord Blood
- Fresh Tissue Procurement
- Frozen Bone Marrow
- Matched Tumor/Benign

**Requests must be made by a collaborating MCW PI.
MTAs required for sample shipping. Publications must acknowledge Bank.**

Contact Us:

Mary Rau
Tissue Bank Manager
mrau@mcw.edu | (414) 805-9569

Wisconsin Diagnostics Lab, #L50; Monday – Friday, 8 a.m. – 5 p.m. (closed holidays)
<http://pathology.mcw.edu/research/tissue-bank/>

MCW/BCW cGMP Vector Production Facility

What Do We Do?

The MCW/BCW cGMP Vector Production Facility (MCW/BCW-VPF) is a state-of-the-art gene therapy vector production cleanroom facility housed at the Blood Research Institute (BRI) on the Milwaukee Regional Medical Center campus here in Milwaukee. The MCW/BCW-VPF opened its doors in early 2016 and aims to provide gene transfer vectors and scientific expertise to investigators interested in conducting pre-clinical research. The facility is also developing the capacity to provide vectors and expertise to clinicians and scientists interested in acquiring/implementing clinical grade vector for early phase gene therapy trials.



Services Offered

Our original services are based in lentivector technology:

- Clinical grade cGMP lentivector for usage in early stage gene therapy clinical trials
- Pre-clinical grade lentivector produced using the same SOP's as for clinical preparations, suitable for large scale laboratory projects, and GLP toxicity studies
- Laboratory grade lentivector for research projects
- Gene Therapy project development consultation.

Speak to our experienced staff about how best to implement lentivector technology in your research lab.

Pre-clinical, GLP, and large scale cGMP clinical lentiviral particle preparations to be available in 2018.

Contact Us:

Monty McKillop, PhD
Manager

mmckillop@mcw.edu | (414) 955-4117

<https://www.bcw.edu/bcw/Research/core-labs/GMP-Facility/index.htm>

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MCW/CRI Flow Cytometry Shared Resource

What Do We Do?

The MCW Cancer Center and Children's Research Institute Flow Cytometry Shared Resource is an advanced technology facility primarily serving MCW and CRI investigators. The facility provides secondary support to on-campus colleagues at the BRI, as well as collaborators off campus at the UWM, Marquette, and Marshfield Clinic. In 2013, the Cancer Center facility and Children's facility merged into one Shared Resource to contain costs and improve access. Here, investigators can get help with protocol and assay development and implementation, including selection of antibodies and fluorochromes, as well as use of proper staining and compensation controls and selection of appropriate buffers and data analysis. For investigators new to flow cytometry, the facility will also help purchase reagents and will assist in all aspects of sample preparation including cell isolation and cell staining, data acquisition and data analysis.



Equipment Available

- BD LSRFortessa X20 – 5 lasers (18 colors, 20 parameters) Flow Cytometer
- BD LSR II – 4 lasers (12 colors, 14 parameters) Flow Cytometer
- BD FACSCalibur – 2 lasers (4 colors, 6 parameters) Flow Cytometer
- BD FACSAria II – CC 4 lasers (10 colors, 12 parameters) Cell Sorter
- BD FACSAria IIu – CRI 4 lasers (12 colors, 14 parameters) Cell Sorter

Contact Us:

Galina Petrova, PhD
Manager/Research Scientist I
gpetrova@mcw.edu | (414) 955-5793

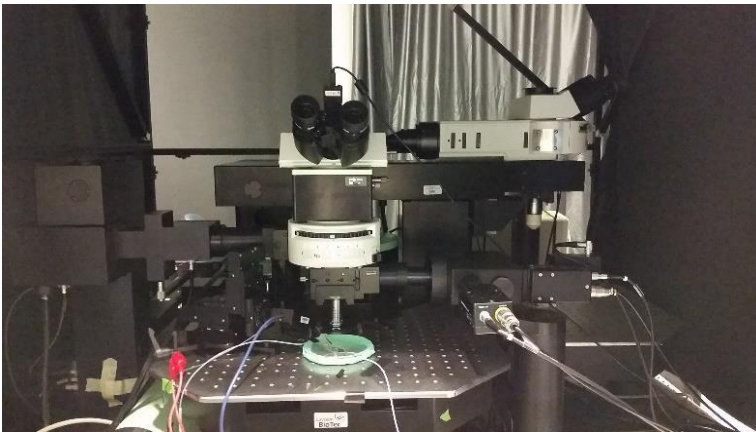
Calvin B. Williams, MD, PhD
Director
cbwillia@mcw.edu

MACC Fund Research Center, 5th Floor, #5052
Monday – Friday, 8:30 a.m. – 5 p.m.

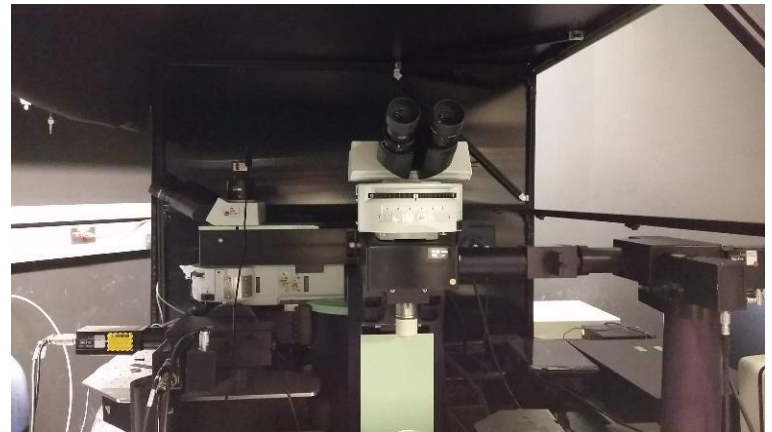
NRC Imaging Facility

What Do We Do?

The Neuroscience Research Center (NRC) Imaging Facility owns a state of the art custom built 2 photon microscope from LaVision biotech. The double header microscope has inbuilt capability to collect images at 60fps (256x256 pixels) using resonant scanner (system I) and deep tissue imaging using PMT galvo scanners (System II). The system is equipped with two, spectra Physics HP Ti: Sapphire laser that have patented Deep See technology, mode-lock capability, femtosecond power duration and tuning range of 690-1040nm. An external beam optimizer and negative chirp compensator is also installed to combine the two lasers beams and condition the laser pulse shape. Simultaneous imaging (resonant scanner) and treatment (IR or Vis) capability is enabled through an additional galvo scanner on system I. Patch clamp experiment is facilitated by the IR Dodt contrast imaging. The scope is controlled by ImSpector software that controls imaging data collection (64bit) and analysis and the following lenses from Nikon and Zeiss are available for imaging –PlanApo10x / 0.45NA (2.0WD), Planfluor10x / 0.3NA (16.0 WD), CFI-Apo NIR 60x / 1.0NA (2.8WD) and PlanApo20x / 1.0NA (2.4WD).



Left Header



Right Header

For inquiries, contact Suresh Kumar, PhD.

Contact Us:

Garrett Sauber
Technical Support
gsauber@mcw.edu | (414) 955-8782

Suresh Kumar, PhD
Scientific Director
skumar@mcw.edu | (414) 955-2448

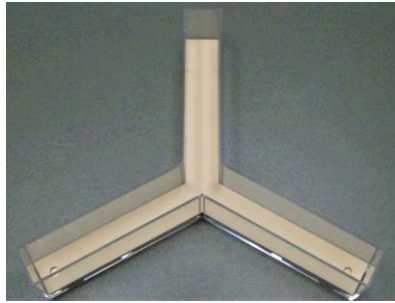
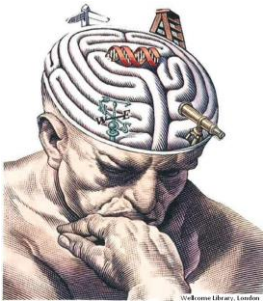
<https://www.mcw.edu/Neuroscience-Research-Center.htm>

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NRC Rodent Behavior Core

What Do We Do?

The Neuroscience Research Center's Rodent Behavior Core was established to enable MCW labs to perform behavioral analysis on rodents without having to buy costly equipment themselves. Our goal is to foster a collaborative environment to enhance neuroscience research at MCW. The center is equipped with up-to-date experimental devices, analysis software, multifunctional rooms, and the ability to reserve time, space and equipment for your own research needs. Test types focus on Aggression & Dominance, Anxiety & Depression, Avoidance & Social Interaction, Coordination & Motor Abilities, Learning & Memory, Reward Seeking and Sensation. Funding was provided by the Research and Education component of the Advancing a Healthier Wisconsin Endowment.



Equipment Available

Mouse (sample listing)

- Elevated Plus Maze
- Prepulse Inhibition Chambers
- Fear Conditioning Chambers
- Radial Arm Maze (wet/dry)
- Grip Strength Meter
- Remotely-Monitored Running Wheels

Rat (sample listing)

- Open Field Chambers
- Rotarod
- Conditioned Place Preference Chambers
- Morris Water Maze
- Gait Analysis Chamber
- Forced Swim Apparatus

Orientation and/or training required. Availability is first-come, first-serve.

Contact Us:

Jake Adelman
Behavior Core Manager
jadelman@mcw.edu | (414) 955-2226

Jenny Sterrett
Research Technologist
jsterrett@mcw.edu

Neuroscience Research Center, TBRC, 1st Floor Vivarium
Monday – Friday, 6 a.m. – 6 p.m. (appointments available)

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Office of Technology Development

What Do We Do?

The MCW Office of Technology Development (OTD) is MCW's "technology transfer" office. The OTD nurtures intellectual creativity, stimulates research, develops and protects intellectual property, transfers intellectual property to entities best equipped to develop and take the product to market, and strengthens the Medical College of Wisconsin brand with the business community. The OTD is housed administratively within the Medical College of Wisconsin Office of Research. The overall mission of the OTD is to support and educate MCW faculty, postdoctoral fellows, interns, students and staff. The OTD engages inventors, as well as internal and external stakeholders to bring **Patents to Patients®**.



If you have an idea, we want to hear it!

New ideas related to a product, service, or concept advancing biomedical research, healthcare, or delivery are welcomed.

Don't hesitate to contact the OTD with questions or concerns—we are here to help.

Services Offered

- Intellectual property evaluation and protection
- Patenting
- Licensing
- Start-up company development

Contact Us:

Kevin Boggs, MBA, PhD
Managing Director
kpboggs@mcw.edu

Kalpa Vithalani, PhD
Licensing Manager
kvithalani@mcw.edu

James Antczak, PhD
Licensing Manager
jantczak@mcw.edu

Edward Diehl, PhD
Intellectual Property Marketing Manager
ediehl@mcw.edu

William Clarke, MD
Director of Research Commercialization
wclarke@mcw.edu

MACC Fund Research Center, 3rd Floor, #3056
(414) 955-4362

<https://www.mcw.edu/Technology-Development.htm>

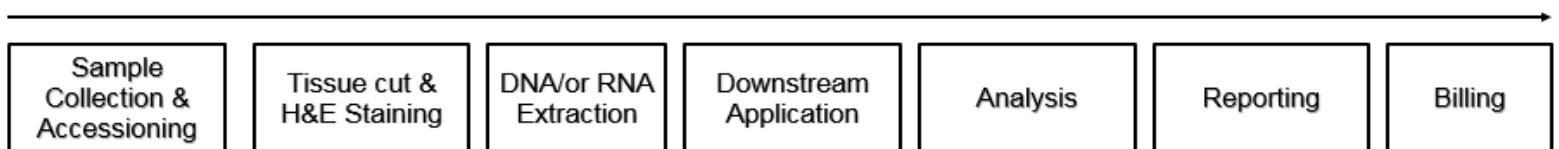
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Pathology Clinical & Translational Research Lab

What Do We Do?

The mission of the Clinical and Translational Research Lab (CTRL) is to provide histopathology and molecular pathology services to both our patients and researchers. Our services include basic histopathology, immunohistochemistry, in situ hybridization, tissue microarray, quantitative digital image analysis, molecular biology, and analytical interpretation.

CTRL Workflow



Services Offered

Histology

- Tissue processing, embedding, cutting, staining
- Immunohistochemistry with over 200 antibodies
- In situ hybridization targeting DNA and RNA
- Tissue Microarrays (custom and inventory)
- Slide Scanning
- Quantitative digital image analysis

Molecular Pathology

- DNA and RNA extraction from a wide variety of sample types (PB, BM, FFPE, Saliva...)
- Quantitative PCR
- Dideoxy sequencing
- Fragment analysis/capillary electrophoresis
- Next Gen Sequencing (Illumina and Ion Torrent)
- DNA and RNA microarray analysis

Contact Us:

Alexander Craig Mackinnon, Jr., MD, PhD
Lab Director
amackinnon@mcw.edu | (414) 805-1526

Mohammad Gad, MS, MB(ASCP)
Lab Manager
momohammad@mcw.edu | (414) 805-7064

Deyanka Ogrizovic
Clinical Program Coordinator
dogrizov@mcw.edu | (414) 805-1524

Froedtert Hospital, 1st Floor, #1176, Monday – Friday, 7 a.m. – 5:30 p.m.

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Pediatric BioBank & Analytical Tissue Core

What Do We Do?

The Pediatric BioBank & Analytical Tissue Core provides quality-controlled banking of human pediatric tissues for use by investigators at MCW and its affiliated institutions. Examples of specimens banked include: blood, benign and malignant tumors, vascular anomalies, bone marrow aspirate, developmental malformations, normal tissue, placenta, DNA, RNA, and cryo-preserved cell lines. Additionally, the core offers tissue analytical services such as nucleic acid extraction (in collaboration with the CRI Nucleic Acid Extraction Core) and high-resolution digital microscope slide scanning.

Equipment Available

- **Hamamatsu NanoZoomer Slide Scanner:** High-resolution brightfield slide scanner with Visiomorph image analysis software for digitization of slide images in publication-ready quality (20x or 40x)
- **Promega Maxwell® 16 DNA extraction System:** Automated DNA extraction system with built-in UV decontamination for nucleic acid extraction from solid tissues (fresh, frozen, or formalin-fixed-paraffin-embedded) and fresh or frozen blood

**The Bank provides
MCW & its affiliates
with access to
thousands of
banked pediatric
specimens**

Contact Us:

Jason Jarzembowski, MD, PhD
Scientific Director
jjarzemb@mcw.edu | (414) 266-2255

Samantha Servi, BS
BioBank Technologist
sservi@mcw.edu | (414) 955-2464

CRI/TBRC Tissue Core Facility, 4th Floor
Monday – Friday, 8 a.m. – 4:30 p.m.

Physiology Biochemical Analytical Lab

What Do We Do?

The Physiological Biochemical Analytical Laboratory (Biochemical Assay Lab) provides a consolidated, highly specialized, well equipped and professionally staffed analytical laboratory capable of performing a wide variety of immunoassays, HPLC based assays, clinical chemistry and biochemical analyses. The priority of this laboratory is to meet the analytical needs of laboratories in the Department of Physiology, in other MCW departments, and collaborating individuals.

Equipment Available

Alfa Wassermann autoanalyzer optimized for clinical chemistry analysis on small samples obtained from rodents

Assays include: creatinine, total protein, BUN, glucose, cholesterol/triglyceride, calcium, magnesium, LDH, HDL

Fluorescent and absorbance micro plate readers

Assays include: microalbumin, protein, Substance P, testosterone

Flame photometer

Assays include: sodium, potassium

HPLC systems equipped with UV, fluorescent and electrochemical detection.

Assays include: catecholamines, serotonin, amino acids

Osmometer

For pricing, availability, and volume requirements, please contact us.

Contact Us:

Lisa Henderson

Lab Manager

lhender@mcw.edu | (414) 955-8169

Basic Science Building, 5th Floor, #536

Monday – Friday, 7:30 a.m. – 3 p.m.

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Quantitative Health Sciences (QHS)

What Do We Do?

Our mission is to provide scientifically valid, efficient and dependable research support for study design, data management and analysis of lab, animal and clinical studies. In partnership with Children's Research Institute, QHS will help train junior researchers, work with more mature researchers in obtaining and maintaining funding and develop standardized data management protocols which facilitate collection of quality data. All Pediatric researchers are eligible to receive service for no charge. Other researchers should contact QHS.



Specialties:

- Statistical Analysis: longitudinal¹ & Omics data²
- Weighted analysis for big databases (i.e., HCUP)¹
- Precision medicine: statistical issues in microbiome & genetic analysis²
- Data conversion/analysis support³
- Designing data management protocols³

Services Offered

- Study design
- Biostatistical consultation, design & analysis
- Data collection tool development
- Survey development
- Database development
- Collaboration on proposals: IRB, grants & CTSI

QHS also provides access to many statistical programs on a shared computer.

Contact Us:

Pippa Simpson, PhD^{1,2,3}
Professor & Chief, QHS
psimpson@mcw.edu

Ke Yan, PhD¹
Assistant Professor
kyan@mcw.edu

Amy Yumei Pan, PhD²
Assistant Professor
apan@mcw.edu

Jody Barbeau, BS³
Sr. Data Manager
jbarbeau@mcw.edu

Cindy Feltz
Consultation Contact
cfeltz@mcw.edu

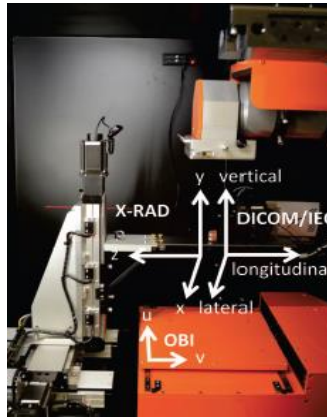
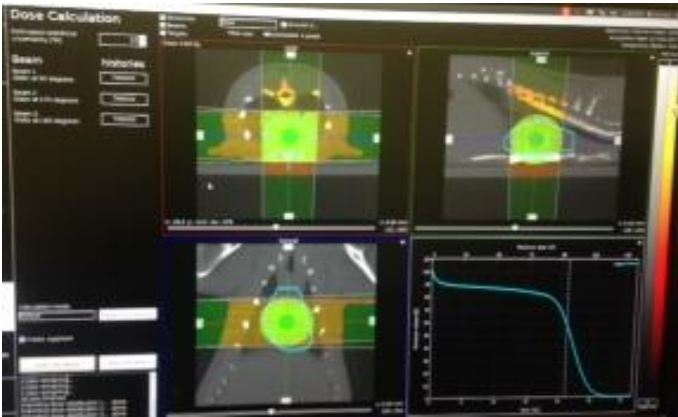
CRI/TBRC, 3rd Floor, #C3135; Monday – Friday, 8:30 a.m. – 5 p.m.

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Radiation Biology Service Center

What Do We Do?

The Radiation Biology Service Center provides Image-Guided Small Animal Irradiations. We can provide image-guided radiation in pre-clinical models, and more precise modeling and targeting of tumor and normal tissue doses, like what is performed and measured in the clinic. We have the only colony of WAG/Rij rats in North America. This breeding colony is housed in the TBRC.



WAG/Rij Rat Colony:

Strain of Wistar rats historically used for radiation biology studies and BMT.

Multiple tumor types have been characterized and can be transplanted in these rats.

Radiation Machines

X-RAD SmART (Small Animal RadioTherapy) Image Guided Biological Irradiator with relative position encoders on all axes: Monte Carlo-based treatment planning system. SmART-Plan's capabilities include image conversion, treatment planning, dose calculation and dose visualization. Equipment includes software-controlled animal stage that allows for non-coplanar beam X-Ray irradiation treatment angles.

XRad320 orthovoltage x-ray unit: Deliver x-ray beams up to 320kV at variable dose rates. For animal irradiation, the HVL layers are matched to the Pantak HF320 unit. X-ray tube has dual filament with a large focal spot for irradiations and a small focal spot for imaging.

Pantak HF320 orthovoltage x-ray unit: Unit can be used for large animal irradiations.

Contact Us:

Brian Fish
Program Manager, Radiation Biology
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MACC Fund Research Center, 4th Floor, #4003

Radiology Quantitative Imaging Lab

What Do We Do?

The Department of Radiology, in collaboration with the MCWCC Clinical Trials Office, supports the assessment of tumor response to therapy guided by board certified radiologists. This new initiative, named the Quantitative Imaging Lab (QIL), is directed by Dr. Peter LaViolette, and utilizes a unique software solution developed at Massachusetts General Hospital to track and maintain clinical trial response criteria adherence. The QIL currently supports 30+ active cancer clinical trials and is growing rapidly. A Quantitative Imaging Analyst works with clinical trial managers to first identify response criteria outlined in each protocol, then registers and activates the trial in the system. Trial Coordinators then request tumor measurements for each patient's imaging time points, which are then completed and signed out by designated board-certified radiologists. Measurements then become available to investigators and trial administration through an auditable web-based database and interface.

Services Offered

A Quantitative Imaging Analyst works with clinical trial managers to first identify response criteria outlined in each protocol, then registers and activates the trial in the system. Trial Coordinators then request tumor measurements for each patient's imaging time points, which are then completed and signed out by designated board-certified radiologists. Measurements then become available to investigators and trial administration through an auditable web-based database and interface

Currently, cancer clinical trials are supported

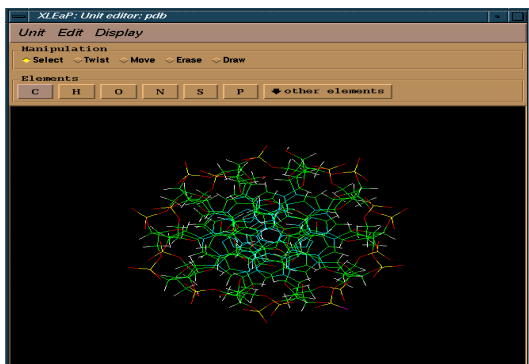
Contact Us:

Peter S. LaViolette, PhD, MS
Quantitative Imaging Lab Director
Assistant Professor of Radiology and Biomedical Engineering
plaviole@mcw.edu | (414) 955-7490

Froedtert Clinics: Department of Radiology

What Do We Do?

The Research Computing Center (RCC) provides infrastructure and campus-wide access to resources required for computationally intensive biomedical research. This includes shared hardware and research-specific software which is supported by MCW and research grants. RCC services and operations will be governed by representatives of the MCW Faculty in partnership with RCC leadership. RCC provides access to a 552 core MPI Cluster, a 256 core Matlab Cluster, 8 multi-GPU servers, 980TB of compute storage, 1280TB of archive storage and large memory servers. We also provide systems management for single Lab / Application servers.



AMBER Refinement of a DNA Duplex

How Do I Get Started?

Request an account:

<https://infoscope.mcw.edu/RCC/HPC/get-started.htm>

What Does It Cost?

RCC charges only for Disk Space Used (\$170/TB/yr. for compute and \$35/TB/yr. for archive) The 1 TB user directory is free as are all the CPU/GPU hours used.

Research Software Catalog

Desktop Software: Chemdraw, DNASTar Lasergene, Endnote, Fast-X, GraphPad Prism, PyMol, Matlab, ScienceSlides, SAS, SPSS and X-Win32

Cloud Software: Lab Archives, Ingenuity Pathway Analysis

Server Software: Statistics, Molecular Modeling, Genomics, Computational Fluid Dynamics, Finite Element Analysis, Imaging Management and Analysis and the Small-Molecule Drug Discovery Suite by Schrodinger

RCC can bring large scale compute resources to your project quickly and inexpensively.

Contact Us:

General Questions:

Greg McQuestion

gregm@mcw.edu | (414) 955-4249

Research Software:

Jason Pokorny

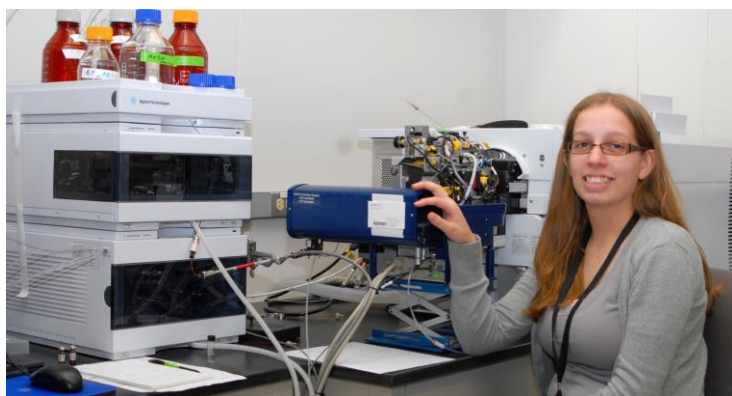
jpokorny@mcw.edu | (414) 955-8321

rcc_admin@mcw.edu | <http://wiki.rcc.mcw.edu/>

Shared Mass Spectrometry (MSMS) Facility

What Do We Do?

The MSMS Facility is an interdepartmental research service unit managed on behalf of MCW by the Department of Pharmacology & Toxicology. It provides service and consultation for research projects requiring mass spectrometric analysis. Two mass spectrometers are available to analyze samples. We operate on a fee for service basis. The facility provides quantitation using SRM (MRM) for known compounds. In addition, the facility can identify unknown small molecules using MS/MS techniques. The facility will implement reported procedures for analysis and quantitation and will develop new methods that answer investigator-driven questions.



Equipment Available

Agilent 6460 Triple Quadrupole-LC Mass Spectrometer: LC/MS/MS has Jet Stream source interfaced to a 1290 Infinity liquid chromatograph and autosampler. Mass analyzer uses both positive and negative detection modes with data-sampling rate of up to 150 SRM/s. The 6460 routinely achieves fmol sensitivity.

Thermo Scientific Triple Quadrupole-GC Mass Spectrometer: TSQ 8000 (GC/MS/MS) is equipped for electron impact (EI) and chemical ionization (CI). Analyzer has a mass range up to 1100 m/z in both positive and negative ion detection modes. Interfaced to Trace 1310 gas chromatograph equipped with a TriPlus autosampler.

Typical Analyses:

- Complex Lipids
- Smaller, volatile lipids
- Endocannabinoids
- Drugs of Abuse
- Metabolites
- Peptides

Contact Us:

Michael J. Thomas, PhD
Director
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Rachel Kallinger
Technical Support
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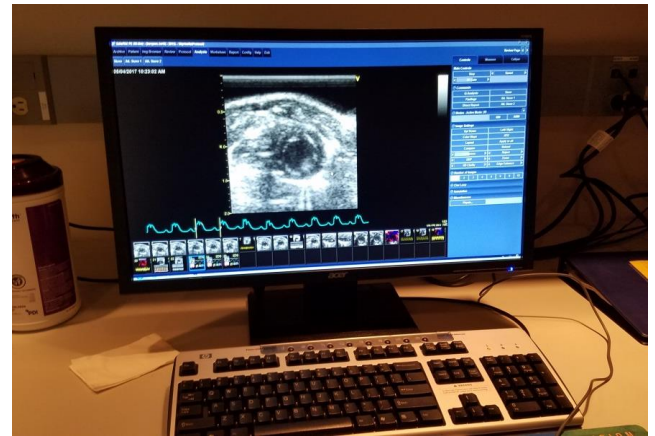
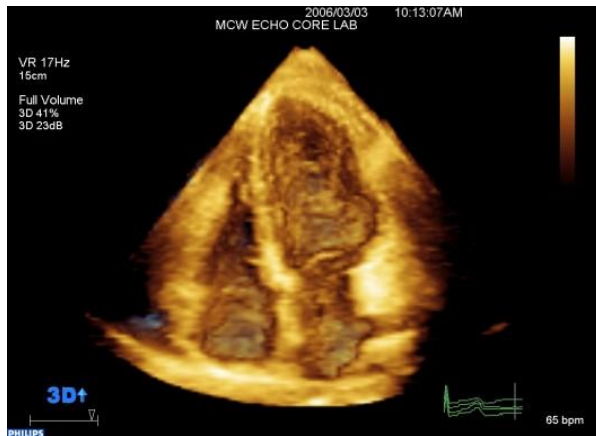
Basic Science Building, 6th Floor, #624 – 626

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Small Animal/Adult Ultrasound Core

What Do We Do?

Echocardiography is the cornerstone of cardiac imaging. Its highly versatile nature makes it the non-invasive tool of choice. This form of non-invasive assessment is ideal for performing serial evaluations of cardiac function or real-time monitoring during and after pharmacological or therapeutic intervention. The Core serves investigators affiliated with MCW. We provide consultation on image acquisition and analysis based upon American Society of Echocardiography (ASE) recommendations for the performance and evaluation of a comprehensive transthoracic echocardiogram.



Services Offered

Adult Echocardiography Core: High-quality cardiovascular imaging along with quantitative and qualitative imaging analysis for cardiovascular clinical trials and investigator initiated protocols.

Small Animal Echocardiography Core: Imaging resource for cardiovascular phenotyping efforts.

Core staff offers expertise, materials, training, consultation, access to equipment and performs scanning and analysis on a fee-for-service basis.

Contact Us:

Leanne Harmann, BA, RDCS, RDMS, RVT

Research Sonographer

lharmann@mcw.edu | (414) 955-6817

HUB for Collaborative Medicine, 5th Floor, Division of Cardiology

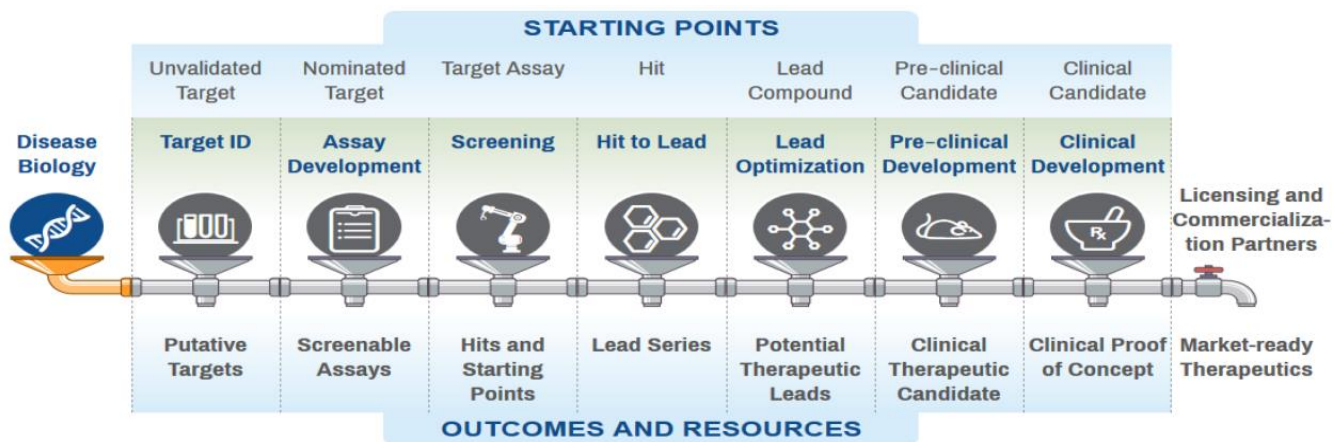
<https://www.mcw.edu/echocorelabs>

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Therapeutic Accelerator Program (TAP)

What Do We Do?

The Therapeutic Accelerator Program (TAP) guides MCW researchers through drug discovery and therapeutic development, an extremely long, complex, and multidimensional process. TAP resources will engage with investigators one-on-one. We will listen, understand and in consultations with expert seasoned professionals, will move your bench side ideas towards therapies. We will work with MCW's investigators to take that one critical step at a time, in therapeutic development. We provide grant application advice and assistance. You are encouraged to come and strike a conversation with us. You will be glad you did. Let TAP join you, to take your therapeutic development to the next level.



Services Offered

- Providing internal project based funding opportunities
- Facilitating collaborations (internal & external)
- Independent scientific review and guidance
- Expert advice in resource planning
- I.P. disclosure assistance
- Project execution

Contact Us:

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Program Manager, TAP
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Viral Vector Core

What Do We Do?

The Viral Vector Core is shared between the Blood Research Institute and MCW. It is located in the east wing of the BRI, room 2025. This core provides services in vector design, gene silencing, and protein expression. Vector systems used include lentivirus, adenovirus, and adeno-associated virus. Core services include construction, amplification, purification, and titration. Other common services include cloning, mutagenesis, plasmid DNA preparation, and bacterial transformation.



Lentivirus
Production

Adenovirus
Production

AAV
Production

Services Offered

Lentivirus Production

- 1st Roller Bottle (\$225)
- Additional Roller Bottle (\$140)
- Premade Virus Aliquot* (\$1/uL)

Adenovirus Production

- Recombination (\$750)
- Small Scale – 15 flasks (\$475)
- Large Scale – 30 flasks (\$900)
- Premade Virus Aliquot* (\$2/uL)

AAV Production

- Small Scale – 10-20 plates (\$475)
- Large Scale – 30-40 plates (\$900)
- Premade Virus Aliquot* (\$2/uL)

Other Services

- Vector Construction (\$300)
- Site-Directed Mutagenesis (\$250)
- Plasmid Maxi Prep (\$35)
- Bacterial Transformation (\$30)

*Vectors expressing fluorescent proteins for testing purposes

Contact Us:

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Cindy Opansky, MS
Core Lab Operator
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Blood Research Institute, East Wing, #2025
<https://www.bcw.edu/bcw/Research/core-labs/viral-vector/>

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