

FACILITIES AND OTHER RESOURCES – Baylor College of Medicine/Texas Children’s Hospital

Baylor College of Medicine

Located in Houston's Texas Medical Center, Baylor College of Medicine (BCM) is a 1,000-acre complex of 49 independent institutions. BCM is ranked number 22 in Best Medical Schools: Research, and number 16 in Best Medical Schools: Primary Care by *U.S. News & World Report's America's Best Graduate Schools 2022-2023*. BCM is ranked 1st in Texas in funding from the National Institutes of Health (NIH) and ranked 2nd in the nation in federal funding for research and development in the biological sciences at universities and colleges by the National Science Foundation. The college is comprised of 25 departments and more than 90 research and patient-care centers. BCM currently includes a medical school, Baylor College of Medicine; the Graduate School of Biomedical Sciences; the School of Allied Health Sciences; and the National School of Tropical Medicine. BCM is part owner of the Baylor St. Luke's Medical Center (Baylor St. Luke's), a part of the CHI St. Luke's Health system, and has hospital affiliations with Harris Health System, Texas Children's Hospital, The University of Texas MD Anderson Cancer Center, The Institute for Rehabilitation and Research Memorial Hermann, The Menninger Clinic, the Michael E. DeBakey Veterans Affairs Medical Center and Children's Hospital of San Antonio. BCM consistently ranks among the top 25 of the country's 125 medical schools, is listed 20th among all U.S. medical schools for NIH funding. Total research support exceeds \$449 million/year, with \$357.3 million from federal sources.

BCM is centrally located in the **Texas Medical Center (TMC)**, which is the largest medical and health care center in the world. TMC employs over 106,000 people within 1,345 acres in the heart of Houston making it the 8th largest business district in the country. Since opening in 1945, TMC has been pioneering patient care, research, education, and prevention. Today, TMC comprises: 21 renowned hospitals, 13 support organizations, eight academic and research institutions, six nursing programs, three public health organizations, three medical schools, two universities, two pharmacy schools, and a dental school. The TMC also supports the Houston Academy of Medicine-TMC library, which provides electronic access to 172 databases and over 9,000 journals. TMC's world-renowned patient care, research, and education institutions have one common goal: transform the future of medicine. As the largest concentration of scientists anywhere, TMC is harnessing collective knowledge, talent, and technology to lead the next generation of innovation

Texas Children’s Hospital

Texas Children's Hospital (TCH) is ranked #2 overall among children’s hospitals in the nation, #1 in Texas and #1 in the Southwest Region, and is ranked #1 in the nation for Cardiology and Heart Surgery by the *U.S. News & World Report's Best Children's Hospitals Honor Roll (2022-2023)* and is one of the nation's largest, not-for-profit pediatric hospitals with licensure for over 650 beds. This state-of-the-art facility provides primary, secondary and tertiary care for a diverse population of chronically and acutely ill children. TCH collaborates with BCM to support a comprehensive pediatric medical education and research program. TCH is an internationally recognized full-care pediatric hospital located in the Texas Medical Center in Houston. One of the largest pediatric hospitals in the United States, TCH is dedicated to providing the finest possible pediatric patient care, education and research. The hospital has garnered widespread recognition for its expertise and breakthrough developments in the treatment of cancer, diabetes, asthma, HIV, premature babies, and cardiac disorders. TCH is affiliated with BCM and is its primary pediatric training site. Baylor professors also are the service chiefs and staff physicians of Texas Children’s more than 40 patient care centers.

The **TCH main campus** consists of: (a) the Abercrombie Building, devoted to a variety of administrative and patient-oriented uses; (b) the West Tower, where the emergency department, critical care units, operating rooms, inpatient beds, and Clinical Research Center are located; (c) the Wallace Tower, a 16-story Clinical Care Center that houses most of Texas Children's outpatient clinics, including Texas Children's Cancer and Hematology Centers, Neurology and Orthopedics; (d) the Children’s Nutrition Research Center, dedicated to nutrition research in the neonate, infant, and child; (e) the 20-story Feigin Center, which provides a total of 540,010 sq. ft. of space for state-of-the-art pediatric research initiatives including the Sabin Vaccine Institute and a GMP facility for cell and gene therapies; (f) the Neurological Research Institute, the world’s first basic research institute dedicated to childhood neurological diseases; (g) the TCH Pavilion for Women; and (h) The TCH Legacy Tower, home for the Heart Center, Intensive Care, and Surgery.

The Heart Center at Texas Children's Hospital

Our cardiologists and surgeons, also academic faculty at Baylor College of Medicine, are world-renowned leaders in pediatric cardiology, congenital heart surgery and cardiovascular anesthesiology. We see more than 17,000 patients and perform more than 800 surgeries annually, with outcomes among the best in the nation. The

Heart Center at TCH encompasses 8 contiguous floors of the new Lester and Sue Smith Legacy Tower, made up of over 50,000 square feet of space where all patients critically ill with cardiac disease are cared for, from neonate through young adult. Levels 16 through 18 house 48 private Cardiovascular Intensive Care Unit (CVICU) rooms and 4 cardiovascular ORs. Levels 19 through 20 contain academic office space for faculty, fellows, research, nursing, and administrative personnel, and 4 cardiac catheterization labs, including an Intra-Cath MRI. Level 21 as well as part of level 22 contains Cardiology and Congenital Heart Surgery clinic space, with 27 examination rooms, 15 echocardiography rooms, including a Fetal Echocardiography Center, and 2 stress labs. Equipment is state of the art, including completely new digital biplane cardiac catheterization laboratories for diagnostic and interventional catheterization; and an electrophysiology catheterization laboratory with magnetic-guided catheter navigation. Levels 22 through 23 contain 42 acute care cardiology beds and a rehabilitation gym. Floor 16 houses a conference center with an auditorium which has state of the art computer and audiovisual capability to display clinical and research data for Heart Center Conferences. This floor also houses the computer hardware, servers, and storage for the two Heart Center patient and research databases.

The Heart Center pioneered many of the now-standard procedures and therapies related to the diagnosis and treatment of children with cardiac problems. The Congenital Heart Surgery Service offers a comprehensive surgical program that includes every procedure available for the treatment of pediatric heart disease and defects. We care for children of every age, including preterm and low-birth-weight newborns, tailoring procedures and treatments to the needs of each individual child and their family. During surgery, this individualized approach includes cardiopulmonary bypass and neuroprotection strategies customized to each patient's condition and needs, helping to ensure optimal outcomes are achieved. Among the heart problems we treat: hypoplastic left heart syndrome, atrial septal defect, ventricular septal defect, tetralogy of Fallot and transposition of the great arteries.

RV Heart Failure (RVF) Program at Texas Children's Hospital: The RVF program is the first program of its kind in the country and intended to advance the care of patients with right ventricular failure secondary to pulmonary vasculature abnormalities in the following key domains: 1) standardized multidisciplinary clinical assessment and management pathways, 2) multidisciplinary consensus-based treatment plans, 3) synchronized research efforts across sections, and 4) national and international collaborations related to both research and education.

Our dedicated program affords the institution the opportunity to more efficiently direct its resources and time, with clinical, research and education efforts being discussed and planned under one group of people. This will reduce unnecessary duplication in efforts, while at the same time, opening up new opportunities for collaboration that have not so readily existed to date.

Cardiovascular Clinical Research Core (CCRC)

The Cardiovascular Clinical Research Core (CCRC) facility is located on the 22nd floor of Legacy Tower and provides high quality research support. This space has a dedicated research visit and echocardiography room that provides the most recent echocardiography techniques, including 3-D, strain imaging, speckle tracking and vascular imaging. The CCRC has an echocardiography and magnetic resonance imaging reporting and analysis room as well as desk space for research fellows and project coordinators and offices for research leaders. The CCRC is available to assist in study design, regulatory support, database creation and management, quality control and outcomes. The 9-member team includes research managers, research nurses and coordinators, and supports all of the department's sponsored research.

The Cardiac Developmental Outcomes Program at Texas Children's Hospital supports babies and children with congenital heart disease (CHD) who have undergone a significant surgical event during the early stages of life by providing regular neurodevelopment assessments and referrals. The program is committed to enhancing the lives of children by focusing on medical, social and developmental health in order to help them reach their maximum potential. Through advances in the medical and surgical care of patients with CHD, the majority of newborns and children born with these complex conditions now receive treatment early in life and thrive. Although that is the case, children treated for congenital heart disease have been found to be at greater risk for developmental delays (motor delays; language and visual difficulties; attention and behavioral challenges). These delays are often very subtle and not easy to recognize at an early age. However, through the Cardiac Developmental Outcomes Program's regular neurodevelopment evaluations, referrals and follow-ups these difficult issues can often be picked up at their earliest stages, and at a time when intervention can make a difference in the developmental progress of the child. The team of developmental pediatricians, psychologists and nurses is focused on the neurological development of the child and the provision of care in a family-centered

environment. Parent and caregivers are directly consulted and involved in the assessments and interventions for neurological developmental progress in the Cardiac Developmental Outcomes Program. The assessments and interventions provided are: an extensive medical history and review; a comprehensive developmental assessment with experts specializing in the unique background and needs of patients with CHD; neurological and psychological testing; referral services to sub-specialty, therapeutic and ancillary services such as speech and physical therapy. The program also assists families in identifying resources that support their child's development at the community level.

The Lester and Sue Smith Legacy Tower Completed in May of 2018, the 24-story Lester and Sue Smith Legacy Tower is the newest expansion of TCH main campus and is the new home for the Heart Center, Intensive Care, and Surgery. The Heart Center consists of 48 patient rooms in the Cardiovascular Intensive Care (double the size of the older ICU rooms, allowing more space for visitors and patient families to remain together comfortably); 30 exam rooms, up from 17, in the Outpatient Cardiovascular Clinic; four catheterization labs, one of which is positioned adjacent to a new integrated MR, which will allow intra-cath MRI imaging; and four 715-square-foot cardiovascular operating rooms equipped with the most up-to-date, sophisticated equipment used to treat the most severe cardiac anomalies. The Heart Center's Cardiac Catheterization Lab is equipped with Stereotaxis magnets to guide a catheter through a patient's arteries for electrophysiology cath procedures. The cardiac Intensive Care Unit is located on the same floor to ensure the immediate transport of surgical patients to the next level of care. A satellite pharmacy is located in the Heart Center's Cardiovascular Intensive Care Unit in Legacy Tower, allowing for medications to be quickly dispensed to some of our sickest patients. The Heart Center's new Cardiac Acute Care Unit in Legacy Tower is more than double the size of the previous unit, housing 48 beds compared to 22 in West Tower. The Heart Center's Administrative Offices are housed on the 19th floor of Legacy Tower and offer dedicated office and conference space.

Feigin Center for Pediatric Research

The Feigin Center for Pediatric Research provides the needed infrastructure to rapidly translate cell and gene therapy protocols directly from the laboratory to the clinic. The \$120 million expansion completed in 2009 added eight floors and 222,000 square feet of space to an existing 12-story building. The Feigin Center augments Texas Children's Hospital's efforts to provide teaching and training for the next generation of health professionals. With more than \$100 million in extramural grant support, most of which comes from the NIH, the Feigin Center is a premier institution of learning and research. More than 120 investigators collaborate on world-class research in every aspect of pediatric care. Key areas of research and growth include genetics, cardiology, oncology, neurology, infectious disease, pulmonary medicine, neonatology and nephrology.

The Feigin Center also houses the Heart Center's John Welsh Cardiovascular Diagnostic Laboratory and Pediatric Cardiac Bioengineering Lab. These state-of-the-art labs provide freezer storage for cardiology researchers to store blood and other bio-specimens at zero cost, which will allow for batching of biomarker assays at a later time.

Texas Children's Women's Pavilion: With the rise in high-risk births in both the region and the nation, Texas Children's Hospital has identified the need to expand services into maternity care for high-risk births. Core to this philosophy is the revolutionary treatment of children from preconception to post-delivery. Texas Children's Hospital currently operates the world's largest level 3 neonatal units. The addition of a targeted, high-risk obstetrics program will enable Texas Children's renowned newborn program to continue to grow and serve the community. The Texas Children's Maternity Center, in collaboration with Texas Medical Center partners, will provide unparalleled pediatric care to unborn children and newborns with advanced care needs, complementing services in fetal surgery, fetal cardiology and genetics, as well as the Newborn Center. The center was completed in 2011. It is connected to the main hospital campus and contains 15 floors, 720,000 square-feet and 102 patient beds. A full-service maternity center at Texas Children's allows for convenient, comprehensive care for mothers and their babies all in one single facility. Areas of expertise include reproductive endocrinology, infertility, fetal surgery, fetal cardiology and neonatology. Texas Children's Hospital has one of the most successful high-risk newborn programs in the country. No other local or regional health care institution can offer this breadth and depth of medical and surgical subspecialty services, education or research for women and infants. There are over 5,000 births per year at the center, focusing on high-risk deliveries.

Investigators at TCH have access to the **Clinical Research Center (CRC)**, which hosts a discrete inpatient and outpatient research unit to accommodate investigator needs. The CRC has been in operation for over 48 years and is currently supported through TCH. The CRC has a 6-bed pediatric inpatient unit, 6 outpatient rooms, 1 room for metabolic studies and a fully operational metabolic kitchen. The CRC is staffed 24 hours per day 5 days

per week and on alternating weekends, by specially trained research nurses, dietary staff, and administrative personnel. The CRC offers use of its facilities and resources for clinical studies, which have been approved through the Baylor IRB and the CRC Scientific Advisory Committee.

Investigational Pharmacy Service (IPS)

The TCH IPS pharmacy supports clinical trials for all pediatric subspecialties. The Pharmacy is experienced in the support of all types of clinical trials, including those involving investigational agents or requiring special preparation, packaging, or labeling for blinded or randomized studies. Two dedicated pharmacists and one pharmacy technician staff the IPS. The IPS occupies space distinct from the central pharmacy, has adequate storage capabilities and dedicated cold storage, and freezer space. It has the responsibilities for randomizing patients onto clinical trials, controlling distribution of study agents, and maintaining accountability of study drugs. The Investigational Drug Pharmacist reviews all protocols that include investigational drugs and must sign off on them prior to IRB approval.

TCH Pathology

To assist with the cross-sectional blood draws, the PI will partner with Pathology. There are several outpatient collection locations within the Texas Children's Hospital complex that can provide a wide range of consultative services on clinical tests (blood, urine, other fluids and tissue specimens). The Department of Pathology is directed by 24 full-time Baylor College of Medicine faculty with special expertise and certification in pediatric pathology, anatomic and clinical pathology, blood banking, clinical chemistry, cytopathology, hematology, medical microbiology, molecular pathology and neuropathology. Pathology will be able to analyze the samples and provide the results. The PI and study coordinator will be responsible for additional samples being transferred to the Heart Center's freezer storage in Feigin Center.

Miscellaneous

The Department of Cardiology provides a private office with a personal computer, phone and locked cabinet space to store study equipment and materials. The office is in close proximity to the CCRC, echo lab and clinics.

Clinical: Dr. XXXX will have access to a vast collection of tissue, blood, serum and urine specimens from the population-based repository and tissue bank at the Baylor College of Medicine (see letters of support from XXXX).

Computer: Desk top computing is supplied by Dell Optiplex work stations running Windows 7 Enterprise upgraded to 2.8 GHz Pentium or better, deployed at least one per person. Additional machines are dedicated to equipment operation and data gathering.

Computers are connected to a campus-wide network to provide access to central services such as file servers, data base servers, UNIX servers, printers, and film recorders, as well as to facilitate the sharing of information between colleagues both locally and long distance via the Internet. BCM and TCH provide full-time Internet and Internet2 connectivity on campus, free of charge. In addition, the campus has an MS Outlook based e-mail system. BCM does not restrict limits on file size. The network backbone is 10GB for BCM campus buildings. WAN sites are either connected over a 1-Gbps or 100 Mb circuits, where available, or over T1 (1.544 Mbps) circuits. Other services and resources available include full technical support and teleconferencing.

Texas Children's Hospital is an institutional user of REDCap (Research Electronic Data Capture), a secure, web-based application designed to support data capture for research studies, providing 1) an intuitive interface for validated data entry; 2) audit trails for tracking data manipulation and export procedures; 3) automated export procedures for seamless data downloads to common statistical packages; and 4) procedures for importing data from external sources. The data is stored on secure servers maintained by TCH IT and backed up daily.

Texas Children's Hospital has installed the **Sickbay™ Platform**, a state-of-the-art supercomputing platform to acquire, manage, and process all physiological data from all patient monitoring beds in the hospital. High resolution waveforms which are captured by the system include EKG, SpO2, chest impedance, blood pressure, near infrared spectroscopy (NIRS), trans-cranial blood flow (Doppler), and transcutaneous CO2 among others. Vital signs (HR, RR, mean ABP, etc.) are also captured. Additionally, the system can capture patient demographics, ADT, medications, and lab results by processing HL7 data streams. All collected data is automatically de-identified in compliance with all HIPAA requirements and is time synchronized with a resolution of <40 ms. The computer cluster can automatically analyze the recorded physiological data in real-time, filtering out artifacts, calculating user-defined parameters from physiological data, and can identify clinical events that can be sent to the appropriate physicians for further analysis. The hardware and software infrastructure employs grid computing capabilities which allow the entire set of recorded data to be analyzed in parallel, dramatically

increasing computational performance. The system currently monitors over 200 beds at Texas Children's Hospital, which include the CVICU, the CV step-down unit, the PICU, the PICU step down unit, the CV Operating Rooms, the Emergency Department, and 1 of the NICUs. Researchers have acquired more than 16TB of data in 3 years of operation over tens of thousands of patients, giving TCH the largest high-resolution physiologic database of children in the world.

Office: Dr. XXXX has a 300 sq. ft. office in the Legacy Tower at 6651 Main St., Houston, TX 77030.

Cytometry and Cell Sorting: This is a state-of-the-art facility offering assisted and unassisted flow cytometric services. Instrumentation includes FACSAria cell sorters with up to 13 colors plus forward and side scatter, LSRII Analyzers with high through-put 96 well sample loading plates, VI-Cell counter, AutoMACS magnetic bead cell sorter and workstations with data analysis software. The Core provides training on all instruments, assists with data analysis and design of experiments, and is available 24 hours-a-day, 7 days-a week for all trained users.

DNA Sequencing: This Core provides automated sequencing on Applied Biosystems Model 3130XL Genetic Analyzer. The Core provides sequence data from single-stranded DNA, double-stranded DNA, BAC, PCR product. More than 1,000 bp can be read from each sequence run. Quality of sequencing is directly proportional to the quality of the DNA template.

Genome-wide shRNA Screening (GRS/C-BASS): The Core facilitates high-throughput screens using a variety of technology platforms including shRNA and cDNA libraries (human and mouse). Screens may be carried out in pools or arrayed format. And several automated workstations and analyzers including robotics for liquid handling, automated fluorescent microscopes, and a high-throughput flow cytometer are available for phenotypic analysis. Additional support in data acquisition, processing, and storage is also provided. The resources and reagents can also be utilized for studies of specific pathways or individual genes.

Genetically Engineered Mouse (GEM): The GEM Core provides investigators with advice and services requiring the manipulation of mouse gametes to facilitate research involving genetically engineered mice. The following services include DNA microinjection (traditional transgene DNA constructs, lentivirus constructs or BAC DNA into the one cell mouse embryo), ES cell microinjection into blastocysts, strain rederivation into a pathogen free stratus, colony expansion, in vitro fertilization, embryo cryopreservation and sperm cryopreservation for safe preservation of valuable mouse strains. These services can be scheduled and tracked using Mouse Embryo Manipulation Services software (MEMS).

The Core also provides consultation on approaches and can work with the investigator to facilitate their research needs.

Integrated Microscopy: The Integrated Microscopy Core provides state-of-the-art light and transmission electron microscopy imaging support. This fully digital-imaging-based resource provides routine microscopy (Nikon, Nikon Elements, CoolSnap B&W and color CCDs), fixed and live cell-capable Nikon A1rs multispectral laser scanning confocal with full live cell enclosure (photobleaching and timelapse), Applied Precision deconvolution microscopy with high intensity solid state illumination and temperature/gas control, digital transmission electron microscope (Hitachi) and specimen processing service, and a robust high throughput microscopy and automated image analysis platform for assay development and drug/RNAi screening (API, Vala, Beckman), including fluid handling robotics (Beckman).

Human Tissue Acquisition and Pathology (HTAP): The Human Tissue Acquisition and Pathology (HTAP) Core provides tissue and serum related services to researchers that includes histology and immunohistochemistry (IHC) and organization of the different tissue banks at BCM. Histology and IHC of human and experimental animal tissues are available to all BCM faculty on a fee-for-service basis. Services include tissue processing, embedding, sectioning and staining for routine histology (H&E, PAS, ORO, Trichrome, VVG, Giemsa), IHC and TUNEL assay for apoptosis. Also available are laser capture microdissection, archival tissue microarrays (TMA), image analysis by Inform and Vectra and consultation with pathologists.

MHC Tetramer The tetramer production Core provides customized MHC/peptide tetramers for identification of antigen-specific T lymphocytes by flow cytometry. Tetramers and/or derivatives are provided for research purposes only; their use for commercial purposes is prohibited.

Mass Spectrometry Proteomics: The Mass Spectrometry Proteomics Core (MS-PCL) provides services for high sensitivity high throughput triple Time-Of-Flight mass spectrometer and full-fledged proteomics technologies for discovery and validation of biomarkers of various diseases. The services include (i) rapid mass determination

of proteins and peptides, (ii) identification of proteins/peptides in complex biological samples, (iii) subproteome isolation and characterization, and (iv) detailed analysis of post-translational modification of proteins/peptides.

Mouse Embryonic Stem Cells: Procedures for the manipulation of ES cells and the subsequent construction of mice from manipulated ES cells are intensive and technically demanding and it is a goal of the core to make such experiments possible for investigators. Our core focuses on the manipulation of embryonic stem cells for further studies in vivo or in vitro.

Monoclonal Antibody/Recombinant Protein Expression: This Core provides custom services for generation of monoclonal antibody (MAb) producing hybridomas and recombinant baculovirus vectors for over-expression of proteins in insect cells. The Core will also mass produce and purify MAbs from largescale hybridoma cultures in bioreactors or large spinner vessels. Baculovirus recombinant proteins are expressed in either conventional spinner cultures or oxygenated bioreactors.

Mouse Metabolic Research Unit: (Children's Nutrition Research Center) The MMRU at the CNRC has extensive facilities for automating feeding studies and for measuring numerous metabolic parameters related to understanding energy expenditure and its various determinants (substrate oxidation, activity, body composition, etc.) in mice. The number of mouse metabolic units available enables concurrent measurements on a relatively large number of mice. Dedicated engineer and faculty members are also available to help investigators design their experiments and interpret their data.

Population Sciences Biorepository (PSB): The PSB Core provides risk factor and clinical data collection and a centralized facility for biospecimen processing and storage from epidemiological and clinical studies. Services are available for individual investigators as well as for clinical centers that require prospective banking of patient specimens. Clinical coordinators can assist with consenting, phlebotomy, and data collection. The PSB also provides laboratory services including: full fractionation and aliquoting for blood samples; DNA extraction from whole blood, buffy coat, or saliva; and RNA extraction from whole blood.

Mouse Phenotyping: The Mouse Phenotyping Core facility contains a multitude of testing capabilities for the assessment of mouse models from embryo to adult. All equipment and services include: MRI, CT, ultrasound, body composition/densitometry, indirect calorimetry, telemetry, and indirect blood pressure. Workstations for image reconstruction and data analysis are also available within the Core.

Genomic and RNA Profiling (GARP): The Genomic and RNA Profiling Core provides investigators access to state-of-the-art microarray and 2nd generation DNA and RNA sequencing technologies and services for both transcriptional and genomic profiling. Its purpose is to assist researchers in utilizing these cutting edge technologies, employing good experimental design, and providing data management and data analysis resources.

Pathway Discovery Proteomics: This is a unique proteomic service that provides antibody affinity purification of endogenous protein complexes and MSbased identification and analysis of the associated proteins. Suitable antibodies for immunoprecipitation of the desired protein complex and conditions for antibody affinity purification are also optimized as a service.

Optical Imaging and Vital Microscopy (OIVM): The Optical Imaging and Vital Microscopy Core offers equipment, training and support for vital and intravital imaging studies in cells, tissues, embryos and live mice. Available technologies include confocal microscopy, line scanning confocal microscopy, multispectral microscopy and two-photon microscopy using microscopes designed for live cell and live animal imaging.

Protein and Antibody Array Proteomics: This Core provides customized services for protein profiling by affinity based proteomic platforms. These include Luminex bead technology for multiplex quantitative analyses of intracellular and extracellular protein signaling pathways, fractionation of serum and other subproteomes, forward antibody and protein-protein interaction arrays as discovery tools for protein biomarkers, and reverse phase protein arrays (RPPA).

RNA in Situ Hybridization: The RNA in Situ Hybridization core provides services and equipment to determine gene expression patterns in rodent and human tissues. We can process and section tissue (frozen or paraffin), prepare labeled RNA probes, perform high throughput in situ hybridization, image and quantify the gene expression levels.