

FACILITIES AND RESOURCES

The LSU Health – New Orleans (LSUHNO)

LSUHNO's mission is to provide world-class teaching, research, and service to the public through direct patient healthcare and community outreach. LSUHNO's reach extends to more than one hundred hospitals and other health science-related institutions throughout the state, region, nation, and world, with which they maintain affiliations. The LSUHNO is a public, co-educational institution comprised of the schools of Allied Health Professions, Dentistry (only school in the state), Graduate Studies, Nursing (only state school in an academic health science center), Medicine, and Public Health (the state's only school of public health). The LSUHNO has multiple recognized research centers of excellence.

LSU Health New Orleans faculty successfully competed for more than \$450 million in research funding over the past ten years. The LSUHNO works collaboratively with other local and regional academic institutions, including Tulane University Health Sciences Center (TUHSC), Xavier University, Dillard University, Loyola University, and the University of New Orleans. LSUHNO works with local and regional medical institutions like the Louisiana Children's Medical Center and the Ochsner Health System. The campus is in the city's biomedical research corridor within several blocks of a regional level-1 trauma center, a multi-specialty teaching hospital, Tulane University, the Louisiana Cancer Research Center, and the VA Hospital. Figure 1 provides an overview of the LSUHNO campus (southwest area of the map) in relation to downtown New Orleans (southeast area of the map) and the New Orleans Superdome (north central area of the map).

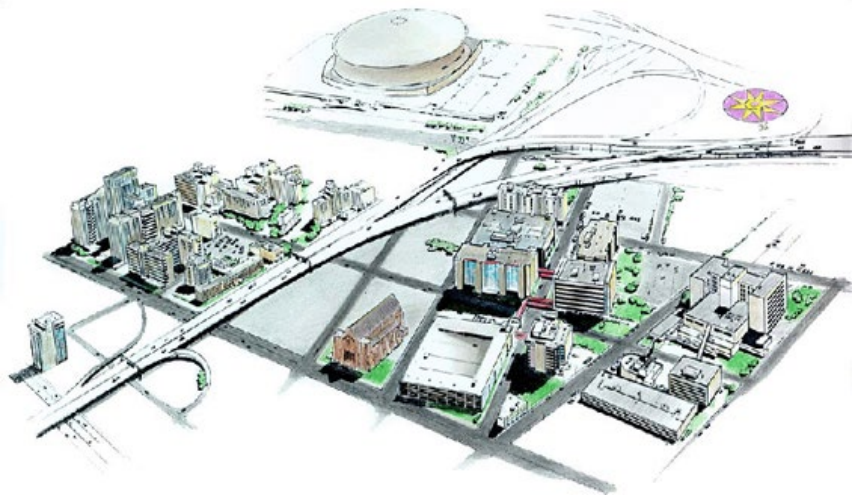


Figure 1. Overview of LSUHNO

Office, Computer, & Communications

All participating investigators have private offices with a computer, printer, telephone, and direct access to the Internet in the Medical Education Building, Clinical Sciences Research Building, UMCNO HIV Outpatient Program (HOP) Clinic, or School of Public Health at LSUHNO. Fax and copy machines are available in the main office of each department, including Physiology and other schools or LSUHNO programs. A sophisticated network of servers allows storage of data files on the network at LSUHNO. It can be accessed by numerous desktop computers located throughout the Center. Computers are interconnected through the LSU network system and can access e-mail, OVID, and the Internet. Software is available in these systems for word processing, data analysis and reduction, graphic presentations and statistical analysis.

Several conference and meeting rooms on the LSUHNO campus are equipped with video-teleconferencing (VTC) technology and can relate to other VTC endpoints worldwide via high-speed internet connections. Also, a VTC bridge managed by LSUHNO provides connectivity to several endpoints simultaneously. Rooms with video teleconferencing technology provide audio and video and real-time and full duplex, allowing groups at multiple sites to interact simultaneously and share data. VTC rooms at LSUHNO- New Orleans will support collaborative work sessions, small group meetings, large seminar presentations, lectures, tutorials, and training sessions. Seminars and meetings hosted by SoPH can be broadcast to multiple sites as needed to accommodate collaborators, greatly enhancing interactions with off-site investigators and faculty investigators.

LSUHNO Library. The LSUHNO Library has two collections, including 1) the John P. Ische Library, which serves the LSUHNO downtown campus, and 2) the Dental Library, located in the Dental School Administration building. The John P. Ische library encompasses 48,960 feet of dedicated space on three floors. The library seats 614 patrons and hosts 5 study rooms. In addition to physical resources, the library offers online resources, including access to more than 200 databases, e-books, full-text e-journals, and a library catalog that can search for books, journals, and other materials, both in print and online. Electronic reference services are also available to LSUHNO students, faculty, and staff through

a link from the library's homepage. The current collection includes over 58,000 print monographs, over 12,000 online and print journal titles, and over 1,500 e-books. The library has a staff of four professional information specialists who provide mediated search services for library patrons. The library liaison for the SPH is available to coordinate library orientation and customized instruction for faculty and students. Professional librarians and support staff assist faculty with research projects within the library. The library prints posters free of charge for researchers who must present at scientific conferences. The library includes a state-of-the-art computer laboratory containing 14 computers with multimedia programs, internet access, and various software programs.

Data Retrieval, Analysis, and Storage

The SPH hosts and provides research support for an LSU Health New Orleans REDCap (Research Electronic Data Capture) installation, currently running version 8.8.0. We will leverage the existing REDCap™ (Research Electronic Data Capture) database platform for data capture and storage throughout the duration of this proposal. Data collection tools have been customized by the data manager in the Administrative Core for clinical and preclinical studies based on input from the research team. REDCap data collection applications rely on a thorough study-specific data dictionary defined in an iterative self-documenting process by all members of the research team with planning assistance from the data management team. This iterative development and testing process ensures a well-planned data collection strategy for individual projects and studies. The REDCap system provides secure, HIPAA-compliant web-based applications that are flexible enough to be used for data storage and processing for each Research Component, provide an intuitive interface for users to enter data, and have real-time validation rules (with automated data type and range checks) at the time of entry and the ability to set up a calendar to schedule and track critical study events such as procedures, tissue sampling, participant visits, etc. These systems offer easy data manipulation with audit trails for reporting, monitoring, and querying patient records and an automated export mechanism to common statistical packages (Excel, SPSS, SAS, Stata, R/S- Plus, CDISC ODM). Also, designated users can assign different levels of access to each member of the research team. REDCap servers are housed in the central data center at the LSUHNO, and all web-based information transmission is encrypted. REDCap databases are housed on a virtual server with 4 Intel Xeon 2.2 Ghz 4 core processors, 16.0 GB RAM, and 100GB storage running Microsoft Server 2008 R2. Storage space can easily be expanded if needed. Nightly incremental and monthly full backups run on all servers on LTO-5 encrypted tapes on a Spectra t50e tape library. REDCap has been disseminated for use at other institutions and currently supports 3,238+ academic/non-profit consortium partners and over 863,000 end-users (www.project-redcap.org). CARC staff attends weekly online webinars hosted by Vanderbilt to stay up to date on the latest additions and capabilities of the system. Patient data, including identifiers and de-identified data, are kept on separate encrypted hard drives, or as part of encrypted databases (REDCap). Paper files are located within locked cabinets and offices in the CTRC. For routine data management and other applications, study personnel have access to university and external computing resources via wireless internet access available at the HOP Clinic and CTRC.

LSUHNO School of Public Health

The research mission of the LSUHNO School of Public Health is to conduct research across a range of disciplines focused on innovation and high impact.

The School of Public Health is comprised of approximately 40 faculty members engaged in its four academic programs, wherein M.S., M.P.H., and Ph.D. degrees are offered. Graduates of these programs are employed in academic, government, and industrial positions worldwide. The School of Public Health occupies approximately 45,000 square feet of LEC building on campus at 2020 Gravier St., New Orleans LA 70112. The area includes administrative and research office space as well as teaching classrooms, conference rooms with teleconferencing capabilities, an Access Grid room, a computer laboratory, and a library.

School of Public Health History: Public Health at LSU Health Sciences Center has had a long and distinguished history in tropical medicine and other fields of study in the School of Medicine dating back to 1941. Its epidemiology programs were incorporated in the Department of Pathology in the 1980's. It was reactivated as a free standing Department in 1992. It grew in size and importance through its three-part mission of education, research and service. In 2003-2004, the Department was reorganized as a School of Public Health. The School offers MPH degrees with concentrations in Biostatistics & Data Sciences, Community Health Science &

Policy, Environmental Health, Climate & Sustainability, and Epidemiology and Population Health MS degree in biostatistics and PhDs in Biostatistics, Epidemiology and Community Health Sciences.

Biostatistics and Data Science (BSDS) offers training in statistical, computational, and data science methods to apply for public health and biomedical research. BSDS faculty members have expertise in developing novel statistical methods in various fields (such as genetic statistics, mediation analyses, machine learning, big data analysis, and omic data analysis). In addition, the faculty members are also in the Biostatistical Consulting Center (BCC) to collaborate with researchers to provide statistical consultation (such as study design and power calculation) and statistical analyses for projects. There are 6 full-time faculty in the program with 2 more positions to be filled. For education, the BSDS Program in the School of Public Health offers a Master of Public Health (MPH) with a concentration in biostatistics, a Master of Science (MS) in Biostatistics, and a Ph.D. in Biostatistics. LSUHNO is the only state-supported educational institution in Louisiana to offer these degrees. This Program has a wide array of computing hardware and statistical and computing software (SAS, R, STATA, etc.). The faculty members and students also have access to several high-performance computing (HPC) systems, such as the Tigerfish cluster at LSUHNO and the Louisiana Optical Network Initiative (LONI) clusters. These powerful HPC clusters are beneficial for performing big data analyses for new statistical method development and related applications.

Community Health Science & Policy focuses on promoting wellness, preventing disease, and improving the quality of life among marginalized communities and populations through its focus on systems, equity, and policy impact. The program advocates the use of a socio-ecological approach to identify and understand the social, cultural, and bio-behavioral determinants affecting health in order to improve personal and population health through planning, implementation, and operating effective and community responsive programs and organizations. The diversity of our faculty's areas of expertise affords a broad range of perspectives for designing, implementing, and evaluating interventions to address the most pressing public health issues. This concentration encompasses historical perspectives, policy analyses, research driven practice, implementation science knowledge, public health skills development, data science application, and public health centered abilities for impactful communications. In our MPH and PhD programs students are introduced to the practices and policies which create, or have disrupted, health equity, justice, and disparities. They explore the science of health behavior change and evaluate innovative technologies created to address it.

Environmental Health, Climate & Sustainability has the mission of addressing the shortage of public health professionals with the background to address emerging environmental health related risks including climate change as a public health issue. Students will learn how to measure and assess the risks, impacts, benefits, sustainability and equity of policies and practices; and master evidence-based approaches to manage environmental risks in way which are equitable, minimize impacts to the environment and public health, and promote community resilience. The EHJS Program offers a Master of Public Health (MPH) degree. There are 4 full time faculty members.

Epidemiology and Population Health has the mission to reduce health inequities among population groups by exploring determinants of health factors such as social structures, the environment, health behaviors, resource distribution, quality gaps, policy impacts, (etc.) on clinical outcomes and community health. The graduates, students, and faculty work in interdisciplinary teams to inform policy and clinical practice in order to improve the health of the individual and society. The Epidemiology and Population Health Program offers two degrees: Masters of Public Health (MPH) degree and a Doctor of Philosophy (PhD) in Epidemiology. The Nationally Awarded Louisiana Tumor Registry (LTR), the HIV, and the Public Health Analytic Center (PHAC) reside within the Epidemiology and Population Health Program.

SCHOOL OF PUBLIC HEALTH AVAILABLE RESOURCES

Biostatistics Consulting Center offers comprehensive statistical consulting and statistical analyses for clients within and outside the Health Sciences Center. Specific services provided include assistance in grant proposal preparation, design of clinical trials, experimental designs, survey design, determination of sample size requirements, randomization plans, data management, statistical modeling, data analysis, report writing, and interpretation. Faculty members have extensive experience providing statistical support with the National Institutes of Health (NIH), Department of Defense (DoD), National Sanitation Foundation (NSF), and private

foundation grants. Their specializations include clinical trials, nonparametric and categorical data methods, survival analysis, design of experiments, cross-over trials, linear models, regression analysis and response surface methodology, multivariate methods, sampling methods, longitudinal data analysis, causal inferences and high-throughput genomic/metagenomics data methods. Through the School of Public Health, the BCC has a wide array of computing hardware and statistical and computing software (such as SAS, R, STATA, etc.).

Center for Evidence to Practice envisions a Louisiana where all individuals have access to a high quality, responsive and effective behavioral health system delivered by a well-trained workforce. This is achieved through the Center's mission to support Louisiana and its agencies, organizations, communities, and providers in the selection and implementation of research-driven behavioral health interventions while understanding and helping to address challenges related to sustaining quality practice that promotes well-being and improves outcomes. The center's research focuses on examining the behavioral health workforce, assessing gaps and needs in Louisiana's mental health and substance use services array, and exploring impact through Medicaid claims analyses and provider surveys. This work is funded by LDH, OBH, Medicaid, SAMHSA, and other entities.

Computer Facilities: The LSUHNO SPH employs an extensive network of state-of-the-art computers with Intranet and Internet access to support its faculty and staff, as well as a 28-seat computer lab for student use. All office computers are encrypted laptops with docking stations in the office, which personnel are required to take with them when evacuations are mandated. Various statistical, word processing, and database software is available (Adobe Creative Cloud, ArcGIS, Office 365, SAS, SPSS, STATA, R, and GEODAS). All faculty and staff have desktop printers and access to high volume copier/printer/scanners on each floor. Students have a dedicated printer available only for student use. Local IT hardware and software support for faculty, staff, and research students is provided by the school, and the LSUHNO Learning Resources Center is available for additional university-level support. The LSUHNO utilizes Moodle, a comprehensive and flexible eLearning software platform delivering a course management system, customizable institution-wide portals, online communities, and an advanced architecture that allows for Web-based integration with administrative systems. REDCap data management software is available to researchers.

Institute for Public Health & Justice is a policy, research, training, and technical assistance enterprise positioned at the intersection of behavioral health policy and practice, as well as the legal system. Many behavioral and other health conditions have social determinants. The Institute seeks to bridge the divide between preventing and treating behavioral health issues and the negative impacts on individuals, families, communities, and the justice system. The agency has a diverse funding portfolio that includes but is not limited to, DOJ, OJJDP, SAMHSA, BJA, MacFound, the Public Welfare Foundation, RWJF, and more. Its research has included examining the age of criminal responsibility, justice reform initiatives, status offender interventions, screening and assessment, evidence-based treatments, school safety, police, and public health, justice data collection and reporting, mentoring, holistic public defense models, diversion, and much more.

Louisiana Cancer Prevention and Control (LCP) is a group of programs centered around the mission to eliminate suffering and death in Louisiana by focusing on cancers that can be prevented or detected early and cured, specifically breast, cervical and HPV-related, colorectal, and lung and tobacco-related cancers. The largest of the programs is the Louisiana Breast and Cervical Health Program (LBCHP) which provides direct early detection and supporting services for low income, under- and uninsured women in Louisiana. The Louisiana Comprehensive Cancer Control Program (LCCCP) is charged with developing and implementing the state cancer plan and organizing and convening coalitions around grassroots efforts to implement the priorities of the plan. Screen Up is our quality improvement program that aims to increase breast, cervical, and colorectal cancer screening rates in every Louisiana community. Screen Up works towards this goal by providing quality improvement support to primary care clinics. LCP is primarily funded by the Centers for Disease Control and Prevention, but has additional funding from the State of Louisiana as well as a number of private entities. LCP is dedicated to adding to the body of knowledge around cancer prevention and control. As such, a number of research projects have been integrated into the program, which include exploring the policy implications of the shortage of GI specialists for colonoscopy, ways to reduce the number of patients requiring colonoscopy, and self-sampling for cervical cancer screening.

Louisiana Tumor Registry is directed by Dr. Xiao-Cheng Wu. LTR a statewide population-based cancer registry created by the state legislature to collect, analyze, and disseminate information on cancer in Louisiana as well as to conduct cancer studies. As an NCI's Surveillance, Epidemiology, and End Results Program (SEER) registry

and a CDC's National Program Cancer Registries, LTR collects and maintains high-quality data on cancers diagnosed in 1988 and after among Louisiana residents from medical records of various sources, including hospitals, pathology labs, radiation centers, surgery centers, physicians' offices, death certificates, and interstate data exchange. LTR cleans and consolidates all source records into consolidated records in the registry database management system, SEER*DMS. The LTR received the first-place award on its data quality profile from the NCI SEER Program, receiving a first-place award every year since 2009, the gold certificates from the North American Association of Center Cancer Registries (NAACCR) since 1997, and annual registry distinction/Distinction Registry since 1998. LTR data have been used for its interactive data visualization tools, including cancer data visualization, cancer zone map, and risk factor [dashboard](#), and [annual monographs, and publications](#). LTR data and resources have supported countless research studies and grant applications, as well as, thousands of peer-reviewed publications. Notably LTR provides: Rapid response system that utilizes real-time electronic cancer pathology reports; Virtual Tissue Repository (VTR) Program that aims at assisting cancer researchers in acquiring tissue formalin-fixed, paraffin-embedded (FFPE) tissue blocks from pathology laboratories; Record Linkage system that uses the Match*Pro software to facilitate linkages of LTR data with research data supporting research studies; and the Patient recruitment that boasts a wealth of experience and a proficient team dedicated to enlisting cancer patients for participation in studies that necessitate patient surveys, consent processes, and the collection of biological samples.

[Louisiana Tobacco Control Initiative \(TCI\)](#) is a statewide behavioral and health services initiative created by the state legislature to ensure the provision of tobacco use treatment in Louisiana's safety net health care delivery systems. The TCI promotes a multi-level, translational, and transdisciplinary approach to smoking cessation services at the recommended system, clinic(ian), and patient levels of healthcare grounded by the US Public Health Service Clinical Practice Guideline for Treating Tobacco Use and Dependence. Additionally, the TCI uses novel methods and innovative study designs for effective theory-driven behavioral intervention research and the latest dissemination and implementation science to accelerate evidence-based tobacco use treatment in primary care settings. The TCI collects and monitors patient and healthcare professional data from nearly 20 hospitals and health centers via self-report surveys and electronic health records on patient tobacco use and provider treatment practices. Contributions to science include the development of a model for health systems change for tobacco use treatment, patient-reported outcomes and health disparities research with underrepresented minorities, and optimization of smoking cessation intervention effectiveness. In 2010, the TCI received the National Association of Public Hospitals and Health Systems Award for Using Health Information Technology to Improve System-wide Identification and Documentation of Treatment for Tobacco Use. Additionally, the TCI's model for health systems change was recognized as exemplary by the Centers for Disease Control and Prevention's (CDC) Multistate Collaborative for Health Systems Change in 2015, the CDC's Tobacco Cessation Change Package and the Surgeon General's Report on Smoking Cessation in 2020. Since 2004, the TCI has obtained over \$1,000,000 from grants and contracts, disseminated research findings in over 20 peer-reviewed publications, two book chapters, and over 80 scientific conferences and invited presentations. The TCI has counseled over 9,000 smokers on quitting smoking, referred more than 10,000 smokers for additional cessation services in the state, and trained nearly 10,000 healthcare providers on evidence-based tobacco use treatment practices.

[Public Health Analytic Center \(PHAC\)](#) provides biostatistical, epidemiologic, study design, and program evaluation support for health-related research and policy projects. These services promote the research and educational mission of LSU Health by supporting the training of faculty, staff, and students in the conduct of biomedical research as well as providing research support services national wide. The mission of the EDC is to facilitate high quality health related research at the LSUHNO as well as affiliated research groups at other institutions, through consultations, collaborative relationships, and contracts. Significant resources and infrastructure have been developed within the PHAC and the SPH to support this mission. Consultative services are focused in several key areas including: study design, statistical planning, data management, statistical analysis and reporting. Collectively, the provision of these services requires diverse subject expertise represented by the disciplines of epidemiology, biostatistics and biomedical informatics. In addition, these services reflect support not only for the research mission of the University but also for the educational mission by supporting the training of LSU Health Science Center faculty and students in the conduct of biomedical research.

[South Central AIDS Education & Training Centers \(AETCs\)](#) The AETCs are a national network of leading HIV experts who provide locally based, tailored education, clinical consultation, and technical assistance to

healthcare professionals and healthcare organizations to integrate state-of-the-science comprehensive care for people with or affected by HIV. The network is comprised of 2 national centers, 8 regional centers, more than 85 regional-partner (local) sites. The LSUHNO AETC serves as a Regional Partner Site of the South Central region, we are responsible for Louisiana. The AETC Program is funded by the Health Resources and Services Administration (HRSA) HIV/AIDS Bureau (HAB), of the U.S. Department of Health and Human Services, under Part F of the Ryan White HIV/AIDS Program (RWHAP).

STD/HIV/Hepatitis Program (SHHP) administers statewide and regional programs designed to prevent the transmission of STDs, HIV, and Hepatitis B & C. The aims are to ensure the availability of quality medical and social services for those diagnosed with an STD, HIV, or Hepatitis B or C and to track the impact of the STD, HIV, and Hepatitis B & C epidemics in Louisiana. The Louisiana State University Health Sciences Center (LSUHNO) has administered a large personnel contract since 1992 to provide a substantial number of staff to SHHP and thereby creating valuable research and service opportunities to faculty and students.

LSUHNO Centers of Research Excellence

The Louisiana State University Health Sciences Center in New Orleans Centers of Excellence were established by the Louisiana State University Board of Regents. The Centers of Excellence consist of the following:

Neuroscience Center of Excellence,

The Neuroscience Center of Excellence focuses on fundamental principles related to brain, retina, and nerve function. Its primary mission is to conduct high-caliber science that advances our understanding of brain function and nervous system diseases. Through multidisciplinary research and education, the center addresses various neurological conditions, including Alzheimer's disease, pain, Parkinson's disease, stroke, epilepsy, depression, blinding eye diseases, schizophrenia, and developmental and hearing disorders. The center actively mentors neuroscientists, trains postdoctoral fellows, and hosts renowned scientists through seminars and lectureships. Additionally, its drug-discovery program has resulted in patents and innovations, contributing to Louisiana's economic impact and scientific progress.

Stanley S. Scott Cancer Center of Excellence,

Home to approximately 100 cancer researchers and physicians at eight affiliate hospitals, the cancer center research programs benefit the Louisiana community by providing access to resources to prevent cancer and detect it at earlier, more treatable stages. Its mission is to bring first-class, affordable cancer care to everyone in Louisiana through funding, critical partnerships with LSU and LCMC Health, and a robust membership program that brings together the brightest minds in cancer research.

Alcohol and Drug Abuse Center of Excellence,

The Alcohol and Drug Abuse Center (ADAC) at the LSUHNO School of Medicine significantly contributes to the advancement of knowledge in the field of substance abuse, emphasizing an interdisciplinary approach that fosters collaboration in research and education. This center is instrumental in enhancing scientists' research capabilities, encouraging joint research efforts, and bolstering educational initiatives related to the biomedical aspects of alcohol and substance abuse across the Health Sciences Center. The ADAC plays a vital role in broadening and elevating the institution's reputation in substance abuse research, treatment, and prevention by building upon existing strengths. Furthermore, the center encompasses the Comprehensive Alcohol-HIV/AIDS Research Center (CARC), which represents a collaborative effort involving a multidisciplinary team of scientists from various prestigious institutions, including the LSU Health Sciences Center (LSUHNO), the Tulane National Primate Research Center (TNPRC), and the Tulane University School of Public Health and Tropical Medicine (TSPHTM). The CARC's primary focus is on understanding the biomedical consequences of unhealthy alcohol abuse, especially its impact on human immunodeficiency virus (HIV) infection and disease progression. By employing a bidirectional translational approach, CARC investigators aim to explore the biomedical implications of unhealthy alcohol use on HIV disease pathogenesis and other frequently co-existing health issues. This research is particularly relevant to Louisiana, where there is a high prevalence of both alcohol consumption and HIV infection. The mission of CARC investigators encompasses promoting excellence in research, training, and education concerning the biomedical consequences of alcohol abuse. The Centers' research also extends to examining the associations between tobacco use, alcohol, drug abuse, and HIV. This comprehensive approach underscores the critical role of both ADAC and CARC in addressing complex health issues that intersect with alcohol and substance abuse, particularly in regions heavily impacted by these challenges.

Cardiovascular Center of Excellence,

The Cardiovascular Center of Excellence is dedicated to advancing cardiovascular research and medicine. Its mission includes maintaining national and international recognition, training young scientists, and fostering research development with support from federal agencies and industry partners. Notably, the center has significantly contributed to cardiovascular science and patient care by integrating multidisciplinary efforts across basic and clinical research, clinical management, prevention, and epidemiologic and genetic studies.

Epilepsy Center of Excellence,

The Epilepsy Center of Excellence is committed to providing advanced and comprehensive epilepsy care. Its mission includes improving access to epilepsy education for patients and physicians while driving multidisciplinary research. The center focuses on groundbreaking studies in pharmacology, neuroelectrophysiology, neuroimaging, neurosurgery, biomedical engineering, and public health. Notably, it serves a substantial population of medically intractable and hard-to-treat individuals with epilepsy in the region. Services offered range from diagnostic monitoring to surgical interventions, including antiepileptic medications, specialized neuroimaging, vagus nerve stimulator implantation, responsive neurostimulator system (RNS) treatment, ketogenic diet management, neuropsychological testing, psychiatric support, and epilepsy surgery for both adults and children. Additionally, the center actively participates in clinical research trials for investigational medications and devices.

Eye Center,

The LSU Eye Center is a globally recognized ophthalmic medical center. It excels in patient care, medical education, and vision research. The center's pioneering work spans various eye diseases and treatments, including laser vision correction, cataract surgery, corneal transplantation, glaucoma management, and retinal disorders. Notably, it trains ophthalmologists through an accredited residency program, ensuring enriched academic and clinical experiences for future leaders in the field.

Louisiana Vaccine Center,

The Louisiana Vaccine Center focuses on interdisciplinary strengths in the basic and translational science of microbial pathogenesis, immunity and vaccine research to foster the development of novel vaccines and therapies against infectious disease. The Center partners LSUHNO-New Orleans with Tulane HSC and the Xavier University of Louisiana and is directed towards building education, research, and development infrastructure to support growth and the commercialization of new discoveries.

Main Core and Shared Equipment Facilities Outside of SPH

LSU Health Sciences Center in New Orleans has service core facilities for our investigators. These facilities are available to all LSUHNO faculty and staff fee-per-use. These services are also available to outside institutions.

Animal Care

The Division of Animal Care (DAC) supports the research activities of LSUHNO faculty, staff, postdoctoral fellows, residents, and students by fostering a comprehensive program of quality animal care. The DAC provides high-quality laboratory animals, ensures humane care and use of all laboratory animals, provides expert technical knowledge, and provides training for all faculty and staff in accordance with related laws and guidelines of all federal and state agencies. LSUHNO and the DAC are committed to supporting continued advancements in biomedical research. The mission is to promote the health and well-being of people and animals everywhere by providing quality care of animals and support for scientists at the Louisiana State University Health Sciences Center. The LSUHNO Dental School Annex is a 9,000 ft² facility with 8 animal rooms, 4 procedure rooms, a large animal OR suite, and a necropsy room that will replace Dental School facilities lost during Hurricane Katrina. Construction is completed, and a move-in date is projected for July. Enhanced allergen protection will be provided with Lab Products individually ventilated cages which are connected to the building exhaust. All animals will be maintained in sterilized caging and changed using an aseptic technique.

Bioinformatics and Data Service Core

The Center provides bioinformatics solutions and services to investigators on a cost recovery/shared cost basis. The Center has developed bioinformatics pipelines for analysis of various omics data, next generation sequence data, other biological data, and integration of these data with clinical information. The Center has deployed

advanced software for functional analysis and visualization of omics data including the Ingenuity Pathway Analysis (IPA) software.

Biospecimen Core Laboratory (BCL)

The BCL operates within the Louisiana Cancer Research Center (LCRC) infrastructure. Its mission revolves around collecting high-quality samples of both normal and diseased human material, including whole blood, cellular blood components, bone marrow, plasma, serum, urine, and benign and malignant tissue. These samples are accompanied by appropriate pathological data. Qualified researchers at the LCRC have access to this valuable material, ensuring ethical informed consent, donor anonymity, safety, and adherence to regulatory safeguards. Importantly, the BCL facilitates translational research by providing unique clinical samples. These samples allow investigators to explore how molecular and cellular pathways identified in vitro or in experimental animals correlate with human diseases. Since its establishment in 2008, the BCL has become an indispensable resource for cancer researchers from LSUHNO, Tulane, Xavier, and Dillard Universities. Through leadership, tools, and resources, the BCL enables precision medicine and advances translational research for the benefit of patients

Cellular Immunology and Immune Metabolism Core (CIMC)

The Core Facility offers cutting-edge instrumentation and specialized knowledge in flow cytometry, cell sorting, and immune cell function. Among its advanced equipment are the BD FACSAria sorter, BD LSRII, Auto MACS cell sorter, BioRad Bio-plex system, Elispot reader, and Luminoscan. Researchers can seek consulting services for experimental design, technical assistance, troubleshooting, and data analysis. Additionally, the core collaborates with researchers from other participating institutions to enhance collaborative efforts.

Clinical Trials and Translational Research Core

The LSUHNO Clinical and Translational Research Center (CTRC) is approximately 2,000 square feet. This space is in the LSUHNO Seton Building at 2025 Gravier Street, Room 652. It includes five exam rooms, two interview rooms, two offices, a medical records room, a core lab, a lobby, and a nurse's station. Researchers affiliated with LSU or their partners conducting Institutional Review Board (IRB) approved clinical research projects can utilize the CTRC on a fee-for-service basis. The cost varies based on the services required and available funding. Before study initiation, the CTRC provides a cost analysis for study implementation, subject to review and approval. Notably, the CTRC offers various equipment for use, including KoKo Spirometry, Bod Pod (Total Body Composition), Welch Allyn Spot Vital Signs machines with pulse oximetry, interview rooms equipped with computers for questionnaire and data input, EKG, Hemocu, Glucometer, and Indirect Calorimetry.

Genomics Core

The Genomics Core Facility is sponsored jointly by the Cancer Center and Gene Therapy Program. The Facility is committed to providing quality service by fulfilling the needs of the research community in a consistently rapid, dependable, and economical fashion. Services include automated DNA sequencing, using state-of-the-art instrumentation (ABI PRISM 3130XL Genetic Analyzers), and the latest protocols to ensure high-quality results at reasonable prices. The Facility also houses an ABI Prism 7900 HT (a high throughput real-time PCR system) and a Biomek2000 liquid handling robot. The Genomics Core Facility is located in the CSRB, room 738D.

HIV-Clinical/Tumor Biorepository Core

This Core was initially created to support clinical trials but will be expanded with this new addition of new program projects to assist Private Junior Investigators (PJIs) with patient enrollment and subsequent collection, storage, and retrieval of linked clinical data and biospecimens for laboratory analyses. Personnel servicing this Core will be positioned within assigned space at the LSUHNO HIV Outpatient (HOP) Clinic. Clinical data and biospecimens will be linked through established alpha-numeric coding procedures and routine interactions between clinic-based data managers and research associates performing patient enrollment, as well as repository technicians who receive and store biospecimens within the nearby Louisiana Cancer Research Center. The Core will also assist PJIs with creating IRB protocols and sample shipment to collaborators off campus through interface with clinic-based regulatory personnel. Dr. Subbiah's close ties to the HOP Clinic and his role as an active HIV clinical provider will facilitate these interactions and support PJIs.

Molecular Histopathology and Analytical Microscopy Core (MHAM)

This core was established in response to high demands for pathology expertise and laboratory analyses of many clinical and animal tumor samples. This core is critical for the Center for Translational Viral Oncology (CTVO)

and is/will be heavily utilized by all investigators involved in this project. The core will assist PJs and their mentors with histopathological evaluation of clinical materials and will determine how different molecular pathways are altered in the context of carcinogenesis. The highly trained core staff will perform routine tissue processing for paraffin and frozen section preparation, H&E staining, immuno-histochemistry, immune-his fluorescence, and in-situ hybridization and will assist PJs in all technical challenges and pathological evaluation of the obtained results. In addition, small animal Imaging based on optical imaging (Xenogen IVIS 200), and laser-capture micro-dissection will be available to scientists as a collaborative effort between MHAM and Morphology/Imaging Core.

Morphology and Imaging Core

The Morphology and Imaging Core (MIC) is a comprehensive histopathology and specialized imaging center. The purpose of this core laboratory is to assist investigators requiring detection, imaging, and morphometric analysis of gene and protein expression in any type of cell and tissue. The facility provides services for sample preparation and analysis, as well as training for users. One of the goals is to assure high quality, consistent reproducibility, and technical expertise to produce valid microscopy studies for presentation, publications, and grant proposals to investigators throughout the LSUHNO, Tulane, and neighboring/national academic communities. MIC is located on the 5th floor of the Clinical Sciences Research Building.

Proteomics Core

The mission of The Proteomics Core Facility is to support investigators in their biomedical research programs at the Louisiana State University Health Sciences Center and the surrounding New Orleans area. The central focus of The LSUHNO Proteomics Core Facility is on the identification of unknown proteins, the characterization of potential post-translational modifications (phosphorylation, ubiquitination, *etc.*) resulting from targeted proteomic screens arising from immunoprecipitation, protein interaction studies, or similar approaches, and the implementation of quantitative proteomics analysis approaches. The LSUHNO Proteomics Core Facility houses a nano-flow 2D liquid chromatography coupled to an Electrospray Ionization Linear Ion Trap (LC-MS) instrument for sensitive analyses of samples for which protein identification is required. In addition, a newly acquired Thermo Fusion Orbitrap mass spectrometer facilitates discovery-based quantitative proteomic workflow and is also coupled to nanoflow 2D liquid chromatography. The bulk of experimentation in The Core includes protein mass spectrometry for identifying unknown protein targets. Increasingly more complex samples are subjected to the quantitative proteomics workflow and analysis. Other applications available in The Core include studies of protein expression profiling, posttranslational modifications, and partial sequencing of novel proteins. In addition, the Core provides access to HPLC methodologies on a case-by-case basis. The staff members also consult with researchers about their particular research interests and assist with developing novel scientific protocols.

Translational Genomics Core (TGC)

The TGC, situated on the 9th Floor of the LCRC Building, is a vital asset of the LSU Health Science Center. It is currently funded by COBRE III (P30GM114732, A. Ochoa PI) and COBRE I (1P20GM121288-01, K. Reiss PI) grants. The facility is dedicated to delivering top-notch service by meeting the needs of the research community in a consistently quick, reliable, and cost-effective manner. It offers services such as automated DNA sequencing, utilizing cutting-edge equipment and the most recent protocols to guarantee superior results at fair prices. The facility is equipped with an Illumina NextSeq500, a MiSeq (both for next-generation sequencing), and an Illumina iScan for conducting microarray-based analyses including methylation, GWAS, microarray-based exome analysis, and several focused arrays, among others. The Core also possesses a 7900HT and QuantStudio 12K real-time PCR systems from ThermoScientific for gene expression validation, a Covaris DNA fragmentation instrument for preparing DNA for exome sequencing, a ddSingle cell isolator from Biorad, and a 3'-based sequencing technology for analyzing mRNA levels in single cell suspensions. The TGC is unwavering in its commitment to the research community, offering service, training, teaching, and organizing seminars to keep the community abreast of the latest developments in specific genomics topics.

Vector Core

The Vector Core is based at the MEB and facilitates research through the preparation of stocks of pre-existing vaccine delivery vectors and the provision of facilities for vector preparation. Current core services include large-scale preparation and quality control of replication-defective poxvirus vectors, including recombinant MVA (modified vaccinia Ankara strain) and FPV (fowlpox virus) vectors. Dedicated space, including biohazard hoods, incubators, and centrifuges, is also available for qualified investigators to prepare and grow

their recombinant adenovirus stocks under Core supervision. The Core also maintains an inventory of plasmids and cell lines useful in developing recombinant vectors.

Other Off-Campus Collaborative Core Facilities

LSU-BATON ROUGE

Imaging Core - LSU Baton Rouge

The SVM Microscopy Center is a suite of rooms on the 3rd floor of the LSU School of Veterinary Medicine Building on the LSU Baton Rouge Campus. The entry points for the Center are rooms 3444 and 3434. The Microscopy Center welcomes visitors and users from all areas. The Microscopy Center is a cost-service center. The center provides services from sample preparation to image analysis. Currently, the center has transmission electron microscopy (TEM), scanning electron microscopy (SEM), confocal laser scanning microscopy (CLSM), laser capture microdissection (LCM), and several fluorescence microscopes. All of these instruments are fully functional for regular and advanced research. Training can be provided by the Microscopy Center.

PENNINGTON BIOMEDICAL RESEARCH CENTER

Transgenic Core Facility at Pennington Biomedical Research Center

The Pennington Biomedical Research Center Transgenic Core Facility produces knockout and transgenic mice for LSUHNO faculty on their "in-house" fee schedule.

Nutrition & Obesity Research Center Core Labs

The mission of the NIH-funded Pennington/Louisiana Nutrition & Obesity Research Center (NORC) is "to facilitate and promote collaborative and multi-disciplinary interactions that will foster new research ideas and enhance the translation of basic nutritional research findings into the clinical arena and ultimately into practical application." The goal is to promote, initiate, implement, and maintain collaborations both within Pennington Biomedical and with other Louisiana researchers interested in obesity research. It includes sustaining a data management and storage system that allows NORC members to share data at Pennington and in other institutions across Louisiana. Most importantly, it provides state-of-the-art core services available to all obesity researchers nationwide. Pennington NORC's platform includes three scientific cores:

- **Molecular Mechanisms core** - genomic and cellular
- **Human Phenotyping core** - characterization of phenotypes predisposing to obesity and metabolic syndrome and behavioral interventions
- **Animal Models and Phenotyping core** - ES and CRISPR technology

Xavier Nanotechnology Core

The mission of the Vaccine Delivery/Nanotechnology Core facility is to support and advance vaccine research capacity by providing novel and innovative vaccine delivery formulations. The major goal of the Core, located at Xavier University, is to maintain a state-of-the-art innovative polymeric vaccine delivery research facility to support interdisciplinary research.

The Louisiana Clinical and Translational Science (LA CaTS) Center

Funded by an NIH Institutional Development Award Program for Clinical and Translational Research (IDeA-CTR) grant since 2012, the LA CaTS Center provides significant clinical research infrastructure and support. LA CaTS operates as a partnership between the Pennington Biomedical Research Center (PBRC) of the LSU System (Baton Rouge), the Louisiana State University Health Science Center (LSUHNO), and the Tulane University HSC, both in New Orleans. The LA CaTS Center's mission is to "encourage, support, and expand clinical and translational research through partnerships among researchers and with the people we serve."

LA CaTS Clinical Trial Units

The CTUs deliver high-quality research nursing support, examination space, computer systems manager expertise, and specialized core facility, and services. The CTU nursing staff works as a clinical research facilitator to coordinate interdepartmental aspects of the protocol, draft standard forms, orders, and flow sheets, and provide a plan for the protocol implementation. The staff works closely with study specific personnel (i.e., the Outcomes Coordinators) throughout the study to ensure proper and complete implementation of the protocol, precisely documenting interventions and patient response. The utilization of the skills of these highly trained research nurses in study related protocol administration, documentation, and observation is an invaluable asset.