Use what applies to your proposal

Facilities

A. Intellectual Environment – The Universities

A1. The University of Tennessee-Knoxville- The University of Tennessee at Knoxville, Tennessee’s Flagship University, is among the top public research universities in the US. As one of the most comprehensive in the nation, it provides a breadth of study and experience matched by few institutions. There are sixty-three doctoral-level programs and eighty-six master’s level programs currently active. The University is home to over 100 research institutes and centers and numerous specialized research laboratories and consortia. With total student enrollment of more than 27,000 students, and research funding surpassing $188 million, University of Tennessee at Knoxville provides an ideal milieu for successful research. The following is a list of facilities and resources that contribute to the scientific environment and demonstrate the University of Tennessee at Knoxville's institutional investment and commitment to research.

Office of Research and Engagement - The Vice Chancellor for Research and Engagement oversees the university units that provide support for research. The Compliance office is responsible for ethical and regulatory oversight of research at the University of Tennessee at Knoxville that involves human subjects. The compliance office supports and oversees the work of the Institutional Review Boards (IRBs) with the goal of maximizing protection of human research subjects. The sponsored programs office assists in all aspects of the research administration of externally funded research. They assist with managing proposals and awards, monitoring and reporting personnel time on grants, training and development for personnel involved in research administration, and overseeing regulatory compliance. The proposal and program development office performs information mining, editing, project management, and budget preparation. The office of faculty development cultivates the skills for all faculty member to advance their scholarship, research, and creative activities.

Research Computing Support-

Computing Facilities - Computing services are shared across campus are developed and maintained by the Office of Information Technology (OIT). Resources include worldwide web access, e-mail and data transfer facilities, and specialized computing packages. Additionally, OIT provides system administration of various services to the University of Tennessee at Knoxville campus and the University Wide Administration. Centrally provided and managed software applications include standard mathematical and statistical software such as Mathematica, Matlab, SPSS, SAS, and STATA are available, as are GIS applications, including ArcGIS and ATLAS.ti. A central Oracle database server and campus-wide Oracle site license can be used to provide backend database capabilities for applications. By relying on OIT to maintain the hardware, security environment and software builds of computing systems, researchers are free to devote their time to science and research rather than to system administration. The proposed project will take advantage of computing resources either directly on campus or through virtual computer laboratory linkages.

File storage options for sensitive information-

One Drive: The University of Tennessee, provides faculty, staff, and students with a suite of Microsoft Office 365 for Education online services to support the educational, research, and public service missions of the University. One Drive can be used to host institution data, including FERPA-protected information as well as Protected Health Information (PHI) or other materials and information covered by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). HIPAA, PHI and PII can be stored in OneDrive if they're encrypted in transit and at rest.

Google Drive: The University of Tennessee provides faculty, staff, and students with a suite of Google Apps electronic services to support the educational, research, and public service missions of the University. The Google Apps services can be used to conduct University business, including business containing FERPA protected information. These services shall NOT be used in dealing with Protected Health Information (PHI) or other materials and information covered by the Health Insurance Portability
and Accountability Act of 1996 (HIPAA), or other non-FERPA data privacy regulations. Those regulations require UT employees to continue using other UT-approved systems for collaborative activities. Google Apps is simply being offered as an additional technology option for working with information.

**Statistical Consulting Center** - The mission of the Statistical Consulting Center (SCC) at the University of Tennessee at Knoxville is to help students, faculty, and staff enhance the quality of their research. The SCC is staffed with full time experienced and expert statisticians who provide assistance with the planning and application of a wide variety of analytical methods for both quantitative and qualitative research. Areas of support and consultation services include content analysis, text or data mining, designing of studies, determining sample size. Assist is best ways to acquire data, designing web surveys, websites, importing third-party data. The help manage data including cleaning, transforming, recoding, converting, stacking or joining data sets. Discover ways to explore your data for useful patterns using graphics, interactive visualization and data mining methods. Tips on how to present your results and will help with editing or writing of results section. Other areas of support include mathematics, text analysis, thematic mapping, and visualization. Each faculty member and graduate student is entitled to 15 free hours of consultation every semester. The SCC has the Newton High Performance Computing Program. Faculty and students have access to quantitative analysis software programs including NVivo, Matlab, R, SAS, SPSS and many more.

**Library Systems** - The University of Tennessee Libraries serves the flagship campus of Tennessee’s university system with outstanding print and electronic collections, reference and instructional services, and first-rate technology. Forty-two professional librarians and 100 staff support the teaching, research, and service mission of the University of Tennessee, Knoxville at the 350,000-square-foot John C. Hodges Main Library and two branches (the Webster C. Pendergrass Agriculture and Veterinary Medicine Library and the George F. DeVine Music Library). In the Hodges Main Library, research assistance and computer services are available 24 hours a day in the Commons. The John C. Hodges Library also houses the University's Map services which is responsible for the geospatial collection, research support, and equipment/software. The libraries at the University of Tennessee at Knoxville hold 3.3 million volumes and administer an annual materials budget of $12 million. The University of Tennessee at Knoxville Libraries has a strong commitment to resource sharing, to digitization of unique local materials, and to providing electronic resources. Students and faculty at University of Tennessee at Knoxville have access to hundreds of electronic databases including Web of Science, CINAHL Plus, PubMed, Cochrane Library, and PsycINFO. The University of Tennessee Libraries is a member of the Digital Library Federation and the prestigious Association of Research Libraries. The University of Tennessee at Knoxville ranks 25th among publically funded Association of Research Libraries members.

**B. The College**

**B1. University of Tennessee-Knoxville, College of Nursing** - [NAME INVESTIGATORS] are faculty members in the University of Tennessee-Knoxville College of Nursing (CON). The CON is a nationally-recognized leader in the education of highly-skilled, visionary nurses. The CON was established in July 1971 in response to a long-recognized and well-established need for nurses prepared at the collegiate level. The CON enrolls more than 400 students in the undergraduate nursing programs, 150 students in the master’s program, and 30 in our doctoral programs. The college is committed to the delivery of high quality and academic programs at both the undergraduate and graduate levels, to the discovery and dissemination of knowledge through research and other scholarly activities, to the provision of service to the community, and to the promotion of the profession of nursing. Specifically, the unique mission is to facilitate the development of professional nurses who will promote society's health at the local, regional, national, and international levels. The CON is affording Drs. XXXXXXX the time and resources to work on the project. The CON is home to a number of federally-funded faculty members.

**Physical Facilities** - The CON is located in designated and solely occupied building with approximately 42,000 square feet of space that includes faculty offices, administrative areas, conference rooms, classrooms ranging
in size from 10 to 280 seats, computer labs, research project space, and skills lab facilities. One floor (approximately 1,000 gross square feet each) is devoted to research support and funded project space. The physical facilities in the SON will be used by the project team for meetings.

**Kenneth Walker Nursing Science Lab**: Within the CON, the Kenneth Walker Nursing Science lab is a 366-square foot biobehavioral lab space equipped for processing various biological samples, including saliva, whole blood, plasma, and serum. The laboratory is equipped with a chemical safety hood, microcentrifuges (2), -80°C Ultralow Freezer (Thermatron Corporation), refrigerator and -20°C freezer, ELISA microplate reader, vortex, a MagPix® (for multiplex biomarker analysis), heat blocks (2), microplate centrifug, and a Quant Studio 3 quantitative real-time PCR (Applied Biosystems) for multiplex gene expression and genotyping analysis.

**Qualitative Research Equipment**: The College of nursing owns equipment to support qualitative research including portable digital voice recorders with PC connection & memory stick; (12) Omnidirectional conference microphones; (12) microphone adapters; (1) Panasonic Digital camcorder PV-DV102; (2) Olympus C-750 4 MP Digital Camera with 10x Optical Zoom; (1) Minolta 2300 Color Laser Printer; (1) Digital transcriber with foot control and headset; and (1) Wavpedal transcription hardware/software package. NVivo is available at no additional charge to faculty, staff and students at all UT campuses for installation on university-owned and personally-owned Windows PCs and Macs.

**Information Technology Infrastructure**: The CON maintains its own Information Technology (CON IT) resources and staff who work directly with the faculty, staff, students, and equipment at the college and work in concert with the University-supplied IT support (OIT). The CON IT provides hands on support for users and equipment engaged in teaching and research across the college including computer setup and security, computer/printer/network troubleshooting, software install and configuration/troubleshooting, simulation technology support, guidance on storing and securing data, equipment research and procurement, simulation and general equipment maintenance, technology-enhanced classroom support, online and paper-based testing, web-based video conferencing, and a mobile computer lab of 50 computers. CON IT also acts as liaison to OIT for the CON and contributes to the strategic plan of the College. CON IT support serves over 100 full and part time faculty and staff, and approximately 800 students across 4 facilities.

**Office of Research Services**: The College of Nursing’s Office of Research Service (ORS) facilitates the research endeavors of faculty and students. The Office of Research Services provides research mentoring and consultation to faculty and students and oversight of daily operational management including proposal development and submission, pre- and post-award financial management for sponsored projects, and related compliance. The Accounting Specialist assists faculty with IRB, travel, invoices, and purchases related to research. The ORS maintains information on funding sources, research conferences, and faculty research interests. The Office maintains a comprehensive database linking research and faculty through tracking and management the research ecosystem and maintains an inter- and intranet system providing faculty grant and conference opportunities, research and computing news, and faculty research activities. All members of the Office of Research Services aim to help College of Nursing researchers advance nursing science with rigorous research and translation projects that are compliant with local and national regulations. ORS will assisted Dr. XXXX in the proposal development and submission and will continue to support Dr. XXXX in IRB, the post award stage and financial management.

**Statistical Consulting Center**: The mission of the Statistical Consulting Center (SCC) at the University of Tennessee at Knoxville is to help students, faculty, and staff enhance the quality of their research. The SCC is staffed with full time experienced and expert statisticians who provide assistance with the planning and application of a wide variety of analytical methods for both quantitative and qualitative research. Areas of support and consultation services include research planning, computing, software support, data access, management, coding, analysis, and interpretation as well as presentation via graphs and help with editing or
writing results sections. Other areas of support include mathematics, text analysis, thematic mapping, and visualization. Each faculty member and graduate student is entitled to 12 free hours of consultation every semester. The SCC provides the Citrix Metaframe Server for Research Software. Faculty and students have access to quantitative analysis software programs including EQS, HLM, LISREL, Mplus, Stata SE, Stat Transfer and SUDDAAN; as well as computer assisted manual text coding for softwares used in qualitative analysis including Atlas/ti, CodeMiner, N6 (a.k.a Nud*ist), and Nvivo; and content analysis that automatically codes and clusters text with the use of PolyAnalyst, TextAnalyst, and WordStat.

MULTI-SITE COMMUNICATION PLAN (this section to be used ONLY if there are multiple sites)
This multi-site research will require a thorough plan for governance and communication between [IDENTIFY INVESTIGATORS] as the two primary investigators at each site. The study team currently plans for telephone or web-conference meetings bi-weekly (every two weeks) in addition to 2-3 face-to-face meetings per year of the study (one of which may occur at a professional conference). The first in-person meeting will occur prior to commencing data collection. There will also be the need for clarity regarding timelines, the respective responsibilities of different individuals and groups, training and standards for data collection, management and analysis. Issues around intellectual property and publication will also be considered and discussed. All study documents will be shared via a secure internet connection. We will additionally work together to put together the Study Advisory Committee described in the Human Subjects section of this proposal. The study team has already communicated and coordinated the human subjects reviews for this study at each of the respective locations and have garnered full-board approval at all sites. We fully anticipate a fruitful working relationship.

RESOURCE SHARING PLAN
We will adhere to the NIH Grant Policy on Sharing of Unique Research Resources including the “Principles and Guidelines for Recipients of NIH Research Grants and Contracts on Obtaining and Disseminating Biomedical Research Resources,” issued December 23, 1999, as it pertains to sharing materials and management of intellectual property. Tools (data, research instruments, etc.) will be made available to all researchers in both the private and public sector free of charge. So that the entire research community can benefit from the tools, data and model organisms (N/A for this application) generated by the University of Tennessee, pending third party rights, the institution will transfer materials to outside researchers under a Material Transfer Agreement (MTAs) generated and monitored by the UT Research Foundation. Such MTAs will be made with no more restrictive terms than the Simple Letter Agreement (SLA) to non-profit institutions. Should any intellectual property arise which requires a patent, we will ensure that the technology (materials and data) remains widely available to the research community in accordance with UT policies and the NIH Principles and Guidelines document. As a means of disseminating and sharing knowledge, we will strive to publish study findings as original research in primary scientific journals in a timely manner and acknowledge that the research was supported by the NIH. Excessive publication delays and withholding of data will be avoided and would be unacceptable to the institution. Sharing Model Organisms: Not Applicable. Genome-Wide Association Studies: Not applicable.

Summary: The University of Tennessee is a research-intensive university with a mission-guided, developing infrastructure that supports faculty and student research in many areas of scientific inquiry. It is committed and poised to move the research endeavors of its faculty and students to advance its research mission. The University of Tennessee in collaboration with XXXXX provides necessary infrastructure and resources to carry out the proposed tasks in this proposal.

OTHER DEPARTMENTS AND SOURCES TO USE

University of Tennessee-Knoxville, Tickle College of Engineering – Dr. Li is a tenured Associate Professor at the Department of Industrial and Systems Engineering, the University of Tennessee, Knoxville. Established in 1838, the University of Tennessee’s Tickle College of Engineering (TCE) has a long tradition of commitment to excellence in scientific research and the training of engineering professionals. The college consists of seven departments of study, four nationally renowned research centers and over 100 state-of-the art laboratories. The TCE features an enrollment of over 2,700 undergraduate and graduate students and research expenditures top over $32 million. The TCE is fully accredited by the ABET Board of Engineering and Technology and offers many nationally recognized programs. The mission of the TCE is: 1) to provide high
quality education in the major engineering disciplines from the undergraduate through doctoral levels through a creative balance of academic, professional and extracurricular programs; 2) to foster and maintain mutually beneficial partnerships with our alumni, friends, industry, and local, state and federal governments through public services assistance and collaborative research; and 3) to be a major contributor to our nation’s technology base through scholarship and research.

**HITS Lab:** Dr. Li co-directs the Health Innovation Technology & Simulation (HITS) Lab with Dr. Tami Wyatt at the College of Nursing. The HITS lab at the University of Tennessee, Knoxville is shaping the future of healthcare through its unique, immersive environment and research and development. A partnership between the University’s College of Nursing and Tickle College of Engineering, the lab was founded six years ago to *advance the science of health innovation while improving healthcare and healthcare professional training*. The HITS collaborators include engineers, nurses, social workers, educators, and graphic designers specializing in healthcare, informatics, instructional technology, simulation, mHealth, and big data science. Located at Temple Hall, the HITS Lab has more than 7,600-square-feet of simulated space located to provide a replica of the patient care environment. In these spaces, health care providers learn to apply cognitive, technical, and psychomotor skills using an interdisciplinary approach. HITS Lab received provisional accreditation from the Society for Simulation in Healthcare.

**iLab:** Dr. Li is also the founding Director of the Ideation Laboratory (iLab). The iLab is located at 510 John D. Tickle Building. The computer equipment in the lab include 4 PowerEdge Servers, 2 3D printers, 10 high-end PC/Mac workstations, 2 network switches, 2 wireless gateway, 5 wireless adapters, 2 Linksys hubs, and 2 HP Laser printers. The computers have been configured to form a wireless/local area network. MySQL database server with 10-T storage is installed on a CentOS server. Data analytical software packages including R, Python/Pandas, SPSS Modeler, SAS etc. are available. These computers facilities will be used to support the planned work.

**University of Tennessee Medical Center (UTMC):** The mission of UTMC, the region’s only hospital to achieve status as a Magnet® recognized organization, is to serve through healing, education, and discovery. UTMC, a 581-bed, not-for-profit academic medical center, serves as a referral center for Eastern Tennessee, Southeast Kentucky, and Western North Carolina. Two resources within UTMC specific to the research outlined in this application are the **Brain and Spine Institute** and the **Pat Summitt Clinic**.

**UTMC Brain and Spine Institute:** The Brain and Spine Institute at UTMC is made up of experts in the field of neuroscience and works to bring patients the best healthcare in East Tennessee, providing care for a full range of neurological diseases and disorders.

**Pat Summit Clinic:** Supported in part by the Pat Summitt Foundation, the Pat Summitt Clinic provides timely, comprehensive, and compassionate care to East Tennesseans faced with cognitive disorders from an experienced, multi-disciplinary team. The Clinic allows from the growth of services provided to patients and families faced with degenerative neurological disorders for the past 35 years at UTMC, assisting in the unending goal of discovering effective treatments for Alzheimer’s disease and related dementias through the expansion of clinical research.

**Neuroscience Network of East Tennessee (NeuroNET):** The NeuroNET Research Center was created in response to the rapidly growing neuroscience research and teaching presence across the University, the UT Medical Center (UTMC), and the Oak Ridge National Laboratory. Currently, the Center comprises more than 100 members whose research spans broad areas of neuroscience. The Center includes a unique set of resources, research capabilities, and clinical expertise that are strengthened through interactions with other interdisciplinary organizations at the University and UTMC, such as the National Institute for Mathematical and Biological Synthesis, the Institute for Biomedical Engineering, and the UTMC Brain and Spine Institute. These interactions have led to external funding from the Kavli Foundation, and have helped launch the Pat Summitt Alzheimer's Clinic. A major goal of the NeuroNET Research Center is to facilitate collaborative neuroscience research between Center members, as well as foster collaborations with external neuroscientists. In support of that goal, external speakers, annual research retreats, regular networking events, grant writing workshops coordinated through the Office of Research and Engagement, and seed funding for new interdisciplinary neuroscience research projects are provided.
Go to this link for a list of Institutes and Centers that might apply to your proposal

http://research.utk.edu/centers/

Community Partnerships:

http://research.utk.edu/communities-of-scholars/

**Vine School Clinic**

The Vine School Health Center is a nurse-founded, nurse-managed health clinic addressing the health care needs of Knox County School students who have difficulty accessing health care or who are uninsured. Based in Vine Middle Magnet School, the Health Center has been operating since 1996, and continues to thrive and grow. A recent expansion included a telehealth program which extends clinical services to eleven additional schools. An interprofessional team of providers includes six nurse practitioner faculty members, two social work faculty members, one education faculty member, three other staff positions, 15 graduate nursing students, 120 senior nursing students, six social work students and two education students. Community partners include Knox County Schools and Knox County Schools Health Services. University of Tennessee, Knoxville partners include faculty and students in the College of Nursing.

**The Appalachia Community Health and Disaster Readiness Project**

Clay County, Kentucky, was recently described by the New York Times as the “hardest place in the US to live.” Since 2013, UT and Clay County have worked together to winterize local homes, distribute and demonstrate the use of carbon monoxide monitors based on the type of heating sources many families use, conduct health surveys, assess flood damage, train hospital staff on basic and advanced disaster life support, and develop prototypes for homes. Community partners include Red Bird Mission, Manchester Memorial Hospital, and Emergency Management Services of Clay County. UT partners include the College of Nursing, the College of Architecture and Design, the Department of Civil and Environmental Engineering, and the Law Enforcement Innovation Center.

**Companion Animal Initiative in Tennessee**

The Companion Animal Initiative in Tennessee, or CAIT, improves the lives of companion animals and reduces the surplus of cats and dogs in Tennessee. CAIT brings communities together to find solutions to pet issues that impact them directly, such as animal hoarding, dog fighting, puppy mills, and other forms of animal abuse. CAIT programs include provision of veterinary care for the pets of people experiencing homelessness as well as community access to spay and neuter clinics while offering opportunities for veterinary students to develop hands-on expertise in shelter medicine. Veterinary student programs offered through CAIT include elective courses in shelter medicine, cultural influence on animal health care, and responsible pet ownership. The program is also responsible for the Tennessee Animal Law Book, a legislative network and series of public forums. Community partners include Animal Control Association of Tennessee, Tennessee Veterinary Medical Association, Young Williams Animal Center, community veterinarians, and many other members of the local community. UT partners include UT’s Veterinary Medical Center, College of Veterinary Medicine, College of Law, and Veterinary Social Work Services.

**Community Health Fairs**

College of Nursing health fairs have changed locations and themes throughout the years to reflect shifting community needs. The fairs provide an opportunity for traditional Bachelor of Science in Nursing (BSN) and RN students to gain valuable community experience and utilize public health communication skills. In addition, the fairs provide university and Knoxville community members with personal health information and numerous screenings.
Current fairs include “Healthbeat,” an annual on-campus event that is a joint venture with UT Student Health and UT Medical Center, a Knox County Schools health fair at Lonsdale Elementary, and Candleridge Apartments Health Fair for low-income seniors.
Community partners have included Knoxville-area African American churches, Knoxville’s Healthy Living Expo, and many Knoxville-area health-service providers and vendors. UT partners include the College of Nursing, Student Health Services, and UT Medical Center’s Heart, Lung, and Vascular Institute.

**Human Animal Bond in Tennessee (H.A.B.I.T.)**
H.A.B.I.T. is an animal-assisted interaction that benefits community members of all ages and in a variety of settings, such as nursing and retirement homes, assisted-living centers, hospitals, mental health facilities, physical rehabilitation centers, and child and family services centers. Animal-assisted interaction creates relationships between animals and people who assist in creating better mental and physical wellbeing. An emerging academic opportunity was recently created when UT faculty applied research on H.A.B.I.T benefits children’s cancer wards in an effort to determine if this interaction improved physiologic parameters of stress and therefore contributed to better health outcomes. On average, H.A.B.I.T volunteers make more than 200,000 contacts annually.
Community partners include ninety-four school programs, eighty-one visitation facilities, private veterinary practitioners, and 250 community volunteers. UT partners include the College of Veterinary Medicine, Veterinary Medical Center, Dog Bite Prevention, Humans and Animals Learning Together, Companion Animal Initiative in Tennessee, Veterinary Social Work, College of Veterinary Medicine Public Health, College of Social Work, School of Information Sciences, and the College of Law.

**International Health Care Mission**
The intense clinical experience of the International Health Care Mission provides students with the opportunity to immerse themselves in new cultures while developing and sharpening their clinical nursing skills. Students are introduced to tropical medicine and gain experience in providing primary health care to underserved populations assessing community health needs, providing health care education, and staffing immunization clinics. UT faculty and students engage directly with local physicians, nurses, and tribal medicine men. The International Health Care Mission builds trust for medical personnel among members of communities. Students and faculty supervisors provide onsite primary care, dentistry, and home visits to community members. These learning opportunities will improve community and family health practices via instruction from students and faculty and community-wide immunizations. Community partners include local health care providers in a number of countries, including Peru, Costa Rica, Belize, Nicaragua, Ghana, Panama, and the Dominican Republic. The UT partner is the College of Nursing.

**Knoxville Homeless Management Information System Program**
KnoxHMIS serves as an empirical window into homelessness in the Knox County community. The only university-based homeless management information system in the country, KnoxHMIS allows for aggregation of client-level data across providers serving the area’s homeless. Reports produced from KnoxHMIS are used to inform local and federal decision-making, including data that suggest that Homeless Prevention and Rapid Rehousing programs have been extremely successful in preventing homelessness for at risk individuals and families.