

Strategic Plan for Research

2021 - 2026



University of Tennessee Graduate School of Medicine: Strategic Plan for Research 2021-2026

Executive Summary

As a part of the University of Tennessee Health Science Center-College of Medicine, the UT Graduate School of Medicine (GSM), in collaboration with the University Health System (UHS), strives to provide an environment that promotes meaningful clinical and translational biomedical research in therapeutics, diagnostics, effective healthcare delivery, and quality improvement thereby enhancing our regional and national reputation. In early 2020, the GSM initiated an in-depth and iterative assessment of our research program. This comprehensive process involved GSM and UHS campus leadership, a Steering Committee, staff and faculty through a Town Hall mechanism and the engagement of two external Research Deans with extensive research leadership experience during virtual site visits. The current document reviews the status of research and presents a broad vision outlining crucial areas in which the GSM can have a wide-ranging influence that enhances the academic performance of our faculty. It is largely Department agnostic and was developed to create an infrastructure and environment for growth and success of the research enterprise.

The Executive Summary summarizes the Strategic Plan for Research for calendar years 2021-2026 and provides an overview of the actions required for the successful advancement and expansion of research priorities in five key domains: *Infrastructure, Productivity, Collaboration, Presence and Impact, and Entrepreneurship and Innovation.*

Focused Areas of Research

We strive to cultivate a research environment that challenges faculty to function at the highest level: the performance of quality research, the submission and acquisition of Federal, Foundation and industry-sponsored awards, clinical evaluation of transformative ideas, and the dissemination of research results to the wider medical community. We reached consensus on three focus areas of research that complement current initiatives and align with our partners. In addition, both Federal and biotech/pharmaceutical support has become more readily available in these disciplines. **Clinical Research – Clinical Trials, Outcomes, and Disparities Research:** The GSM has the opportunity to expand clinical trial operations, engage in meaningful outcomes research and study health-related issues and unmet needs of the people in rural Appalachia. These efforts have the potential to expand access to innovative therapeutics, improve healthcare delivery, and enhance health disparity research underway in UT Health Science Center (HSC)-Memphis, by adding another unique population to local and statewide initiatives. **Translational and Rare Disease Research:** The GSM has a long history of successful translational and rare disease research including more than three decades of investigation into amyloidosis. Rare diseases in particular have garnered increasing attention over the last 5 years from the National Institutes of Health, Food and Drug Administration and industry. We will continue to support and expand opportunities for our bench-to-bedside translational research efforts into rare diseases, drug discovery, and drug delivery systems. **Data Science and Artificial Intelligence – The Governor’s Chair (Appendix F):** As a new focus area for the GSM, in a discipline of growing importance, we propose to recruit a Governor’s Chair and associated research team, based at the GSM and ORNL, committed to studying the implementation of artificial intelligence in the fields of radiology and pathology. The focus will be on the assessment and mitigation of risk in clinical diagnostic systems; at the same time, the team will serve as a resource for researchers in the other focus areas.

Infrastructure

Physical infrastructure is critical for the success of our research program. Without the proper infrastructure to support quality research, we risk losing current and future generations of innovative researchers and clinical faculty to competing institutions and/or health systems.

Actions: Complete formal internal and external evaluations of current and future laboratory status

The evaluation will include upgrade feasibility of current “wet lab” space, including costs of renovation versus relocation and development of a new research facility. For the former, we will assess the time needed to complete renovation and upgrades, and decommissioning of laboratories; for the latter, the logistics and costs of relocation. A key component will be estimation of anticipated space and, facility and equipment needs over the next five years. The overall infrastructure requirements will be collated and reviewed before a detailed plan for infrastructure development is presented to various stakeholders in order to finalize the financial structure required for the physical upgrades. In addition to the physical infrastructure needs for translational scientists, we will assess personnel infrastructure needs for all researchers to determine the feasibility of providing additional support.

Actions: Enhance the use of the BioBank

The BioBank will serve as a unique internal resource for biomedical research. The GSM agrees with current UHS plans to expand the potential and utility of the BioBank through the development of a histology research lab, a clinical data repository, a molecular laboratory, artificial intelligence research ventures and ISO accreditation.

Productivity

Productivity and funding are intimately linked. To meet our productivity goals, the GSM will make every effort to remove the barriers hindering faculty and trainees from productive grantsmanship and research activities.

Actions: A Governor’s Chair at the GSM

The establishment of a Governor’s Chair can transform the research mission and identity of the institution. We will appoint a Governor’s Chair to work initially with the Departments of Radiology and Pathology, and develop state-wide collaborative initiatives in data science and AI. In particular, studies that involve precision health care, medical informatics, and preclinical “experimental precision medicine” using animal models may be developed, thereby expanding existing strengths. This will result in high-impact productivity for all campuses concerned (UTHSC, ORNL and UTK) and form a strong foundation for a nationally recognized consortium in health care analytics.

Actions: Enhance clinical faculty involvement in funded research

We intend to create a standardized process with UHS for select research-oriented clinicians who actively pursue research and the submission of Federal grant applications. This will allow for salary recovery based on the NIH cap and increased F&A. We also seek to hire, in partnership with UHS, at least two physician-scientists within the first years of the Plan who demonstrate a commitment to clinical research excellence.

Actions: Development support for research activities at the GSM

The GSM intends to increase and sustain funding for the “Women in Science” research initiative while expanding and exploring other seed grant initiatives. We will work closely with the Development Office and its gift officers with quarterly in-person updates and the careful review of unused GSM and UHS gift funds that can be directed towards the GSM research mission.

Actions: Increase internal, Federal, foundation and industry funding

Without the financial support from Federal agencies, the continued quest for groundbreaking bench-to-bedside research may not be attainable. To facilitate the expansion of the Federal funding portfolio, GSM will provide support staff to assist applicants during grant and contract submission and annually assess the needs of research faculty for other vital resources. Proposed actions include: (1) the hiring of a Graduate Research Assistant to assist with statistical analyses and a Research Coordinator to facilitate and support specific research studies; (2) creation of a single, central, online research data repository containing productivity resources- the GSM Orange Research Dashboard (“*GORD*”); and (3) a GSM-Office of Clinical Trials (OCT) Standard Operating Procedure pathway for Investigator-Initiated projects.

Actions: Enhance student, resident and faculty development

To meet the demands of the faculty and growing research environs, we will develop new offerings for the Faculty Development Seminar Series and continue to engage NIH training and support opportunities that exist on the UTK and UTHSC campuses. The Academic Leadership Academy (ALA) will launch its inaugural class in January 2021. We will expand opportunities in research and innovation for UT undergraduate, medical, nursing and graduate students and focus on creating an endowment for the Under-Represented Minorities (URM) Summer Research Fellowship.

Action: Establish an Office of Academic Recruitment

To better align the clinical and research/educational missions of UHS and UTGSM, the creation of an Office of Academic Recruitment, following clearly defined procedures, can help to attract key faculty whose research interests align with both institutions.

Actions: Near-term Expansion of the Select Research Initiatives

The GSM is in a position to pursue several near-term initiatives that will lead to continued and possibly accelerated growth. Initiatives include: establishing a new metabolic activity laboratory; hiring at least two PhDs to work in the rare disease research space; extending support for other translational research faculty to enhance productivity and ensure continued success; critically assessing equipment upgrades for the translational science laboratories; and working with UHS to identify potential research opportunities at the new center for orthopedics at UT Research Park.

Actions: Growth of Clinical Trials

Growth of the clinical trials enterprise represents an important opportunity for the campus and the patients we serve, who expect us to provide early access to novel experimental interventions across multiple therapeutic areas. Supported by UHS, and led by a group with extensive experience in industry and the performance of trials, the Office of Clinical Trials (OCT) has seen improvements in multiple facets of trial management and productivity. Additionally, a new mechanism involving the routing of OCT-managed clinical trials through the University of Tennessee Health Science Center's Clinical Trials Network of Tennessee (CTN2; www.ctn2.org), will result in enhancement of the University's ability to account for all research performed by faculty and as a consequence, its reputation and ranking as a research institution. To accommodate this, enhanced efforts will be required to increase clinician training in and engagement with clinical trials.

Collaboration

In the current operating environment, we must establish specific strategies that permit targeted expansion of our clinical, translational, and investigator-initiated research portfolio. This can be achieved, in part, through enhanced collaboration and efficient communication. Reaching across campuses with focus and purpose to address collective concerns and create micro and macro environments that boost faculty collaboration are key to the success of the Plan.

Actions: Formation of a Research Facilitators Group ("RFG") and Augmented Communication Strategy

With broad campus representation from GSM Research Administration, Institutional Review Board, UTK-Office of Sponsored Programs, the BioBank, faculty at the College of Veterinary Medicine (CVM), leadership of the OCT, UHS development office, and the University of Tennessee Research Foundation (UTRF), the RFG is designed to identify and develop strategies to minimize, or remove, barriers to productive collaborations within, and external to the GSM. We will identify a navigator to help connect GSM to key partners at Oak Ridge National Laboratory and facilitate joint appointments; organize adjunct and joint appointments between UTK and GSM; and expand on the "Tiny Ted Talks at UT" model to include other UT colleges and where appropriate, the local start-up community. Additionally, we will consider establishing a Translational Medicine Working Group in collaboration with the CVM.

Actions: Collaborations with UTHSC

The naming of the GSM Dean to the Statewide Leadership Team will facilitate further engagement with the UTHSC Clinical-Translational Science Institute and provide greater access to funding resources. The GSM will work with the Vice Chancellor for Research to ensure increased representation of GSM faculty on grant planning and review committees and as recipients of the grants themselves.

Presence and Impact

In order to increase the visibility of research at the GSM, new avenues for disseminating material- for example, social media outlets, internal media and news outlets- will be tailored for specific internal and external audiences.

Actions: Provide targeted research-related messaging

The Dean and the Director of Research will present a summary of research activity to the UHS Board of Directors on an annual basis and will evaluate the formation of a small working group (UHS media relations, GSM Public Relations and a GSM research representative) to synchronize well-organized communications to assorted stakeholders. We will assess the viability of establishing a GSM/UTMC external stakeholder engagement group that can help leverage research design and implementation of science and contribute to the development of multi-disciplinary grants.

Entrepreneurship and Innovation

Actions: Cultivate an Environment that Fosters Entrepreneurship and Strategic Partnerships

Research Administration at the GSM will regularly inform faculty of the role of the University of Tennessee Research Foundation (UTRF) in disclosure of intellectual property, patent development, licensing opportunities, and start-ups; and actively engage with UTRF and the President/CEO of UT Research Park to foster greater opportunities in innovation.

Summary: The research mission is central to the identity of the GSM and its partners. We anticipate that, by the end of the five year Plan, strategic recruitment of MD and PhD investigators, addition of a new or renovated “wet lab” facility, expansion of “focused” research areas and BioBank capabilities, establishment of a GSM Governor’s Chair, and the procurement of a reliable and sustainable funding stream will create an environment of academic excellence and entrepreneurial innovation. Specific metrics are provided in *Appendix A*. Our goal is to compete for top faculty and trainee talent, and elevate our core academic and clinical missions. This accomplishment will be bounded by a campus-wide appreciation of, and support for, the UTMC-GSM partnership combining a premier academic medical center and university program with both regional and national visibility and prominence.