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Local Biomedical Institutions Receive
More than $1 Million in Collaborative Research Grants
From San Antonio Medical Foundation

SAN ANTONIO – The San Antonio Medical Foundation Board of Trustees has approved six grants totaling $1,042,047 to research teams at eight local bioscience institutions and organizations. It marks the first time in the program's six-year history that the grants awarded exceeded $1 million in any one year.

The eight entities are the Brooke Army Medical Center, Navy Medical Research Unit at San Antonio, Southwest Research Institute, South Texas Regional Advisory Council, South Texas Veterans Administration, UT Health San Antonio, University Health System, the University of Texas at San Antonio and Texas Biomedical Research Institute.

The announcement was made by Lisa Friel, Medical Foundation Chair, who said, "We instituted this grant program in 2015 to build San Antonio's biomedical strengths by encouraging collaboration between the outstanding healthcare and biosciences institutions in San Antonio. It has been extremely successful in opening doors and building collaborative relationships among these institutions, while developing important new knowledge and practices."

Jelynne Burley, Chair of the Foundation's 16-member Grant Review Committee, said, "We received 44 grant applications and, after a great deal of work, selected six winning

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teams. We review applications on how the participating institutions are able to leverage their strengths and raise the national and international profile of San Antonio's bioscience and medical community, assuming that the participating institutions have already deemed the projects feasible before submission."

"This program has grown tremendously from its first year, 2015," she said, "when grant applications totaled 12. To date, the San Antonio Medical Foundation has awarded more than $2.7 million for these collaborative projects."

This year, a team of researchers from Brooke Army Medical Center, Navy Medical Research Unit at San Antonio, UT Health San Antonio and the University of Texas at San Antonio was awarded $131,340 for a project focusing on aging/neurologic disorders, seeking to predict stroke hemorrhagic conversion with a machine learning (ML) algorithm. Goal of the project is to develop an artificial intelligence (AI) model to address this gap in medical knowledge, with the capacity to quantitatively and objectively assess the risk for cerebral bleeding.

Southwest Research Institute, UT Health San Antonio and the University Health System were awarded $199,948 to develop algorithms that will improve the speed and accuracy of cancer diagnosis and improve treatment effectiveness. This project also involves ML/AI algorithms that will enable precise quantification of histologic and immunohistochemical parameters for cancer detection and treatment.

The South Texas Regional Advisory Council and UT Health San Antonio will receive $112,404 for a project that focuses on trauma and infectious disease. Early detection of time-sensitive conditions and transport of potentially unstable patients to appropriate facilities has been a hallmark of EMS care and operations. Sepsis is a spectrum disease process related to infection that historically has been under-appreciated by the medical community

but is deadly if not treated properly. This project hopes to improve sepsis care within the greater San Antonio metropolitan area by promoting pre-hospital sepsis identification, developing a system-wide quality assurance process, tracking patient outcomes, identifying at-risk populations and designing a prevention campaign with the ultimate goal of influencing pre-hospital and hospital care locally and nationally.

A project on aging involving the South Texas Veterans Administration, UT Health San Antonio and the University of Texas at San Antonio was awarded $200,000. It involves disentangling demential patterns using AI on brain imaging and electrophysiological data. The research team hopes to advance Alzheimer's Disease-related Dementias research because it will fill in a gap with underrepresented data from the Hispanic population. The methods developed will be applicable across a large number of diseases and populations.

Southwest Research Institute, UT Health San Antonio and the University of Texas at San Antonio teamed up to receive $198,592 with a COVID-19 focus. The project proposes studies that combine virology, high-throughput screening, medicinal chemistry and in-silico drug design expertise to identify molecules that disrupt binding of SARS-Cov-2 to ACE2 and validate their potential to block SARS-CoV-2 entry to cultured epithelial cells.

Finally, a proposal from Texas Biomedical Research Institute, UT Health San Antonio and the university of Texas at San Antonio has been awarded $199,763 for another COVID-19-related project. Clinical data accumulating in the course of the COVID-19 pandemic point to the initially over-looked aspect of severe coronavirus infections: the massive deregulation of immune response triggered by so-called cytokine storm (macrophage activation syndrome – MAS). The excessive immune response emerges as the major cause of morbidity and mortality even in young patients with no underlying conditions. There are no established safe therapies for MAS. The scientists propose that allosteric inhibition of the proteasome has the

potency to mitigate an excessive immune response during coronavirus infection in a specific, safe and effective manner. The project takes advantage of UT Health San Antonio drug discovery and single cell analysis resources, UTSA medicinal chemistry and Texas Biomed animal models, supplemented by Southwest Research Institute in-silico drug discovery services.

The San Antonio Medical Foundation is the founder of the South Texas Medical Center and a catalyst for the preeminence of San Antonio's healthcare and bioscience industry.