Title: **Identification of Compounds Increasing GLUT1 Activity**

Lay Summary:

Glucose transporter type I deficiency (G1D) is an epilepsy syndrome that result from a mutation in the *SLC2A1* gene. In normal brain function, the *SLC2A1* gene makes a protein (glucose transporter type I, GLUT1) that moves glucose across the blood-brain barrier. In G1D, there is defect in the SLC2A1 gene that results in a protein that cannot move enough glucose across the blood-brain barrier; this results in carbon deprivation of the brain and, often, seizures and other disabilities. The Glut1 Deficiency Foundation has funded Dr. Jason Park in the Department of Pathology and the Eugene McDermott Center for Human Growth at UT Southwestern Medical Center in a study for the "Identification of Compounds Increasing GLUT1 Activity".

Beginning in 2019, this one year grant will fund the identification of drugs which increase the availability and/or functional activity GLUT1. In a collaboration with UT Southwestern faculty members, Drs. Juan Pascual and Bruce Posner, the UT Southwestern High Throughput Screening Core will screen approximately 10,000 chemical compounds for GLUT1 activation. The Core has executed more than 250 screening projects, leading to the discovery of drugs commercially pursued in the areas of cancer, diabetes, stem cells, malaria and tissue regeneration. For many years, UT Southwestern Medical Center has been at the forefront of patient care, diagnostic testing, clinical trials, patient registry, laboratory research and medical and scientific training focused on G1D.