Department of Electrical and Computer Engineering

TEXAS TECH UNIVERSITY
Edward E. Whitacre Jr.
College *of* Engineering™

Spring 2025 Seminar Series

Seminar Title: ***Mathematical frameworks for studying the brain and neuropathology***

Time: 2:00-2:50 PM, Monday, Apr 28, 2025

Location: ECE 101

Speaker:
Travis Thompson
Department of Mathematics and Statistics, TTU

Abstract:
The modern medical perspective on the brain and neurological diseases has evolved, slowly, since the 20th century. Recent breakthroughs in medical imaging have quickly transformed medicine into a quantitative science and, today, engineers are using computing and mathematics to design breakthroughs in medical and biotechnology. In this talk, we will encounter two of the primary perspectives enabling researchers and industry professionals in engineering to computationally model the brain and to understand and predict outcomes in neurodegenerative diseases, like Alzheimer's disease.

Speaker Bio:
Dr. Thompson completed a Ph.D. in Mathematics at Texas A&M University in 2013. His postdoctoral work was conducted at Rice University (Houston, Texas), Simula Research Laboratory (Oslo, Norway) and Oxford University (Oxford, United Kingdom) and spanned several mathematical disciplines, including applied mathematics, biomathematics, numerical analysis and scientific computing. The focus of his work is the mathematical modeling of the brain and neuropathology. He has published widely on topics ranging from new numerical methods for brain simulation to novel models of neurodegenerative diseases, such as Alzheimer's disease.
Dr. Thompson joined the Department of Mathematics and Statistics at Texas Tech University in the Fall of 2022. He is an active member of the Center of Excellence For Translational Neuroscience and Therapeutics and the Obesity Research Institute; he leads the Texas Tech Translational and Theoretical Mathematical Modeling and Machine learning in Medicine (TM4) research group.