



Fredericka Brown

Associate Professor

Biographical Sketch:

Dr. Brown is a registered professional engineer in the State of Texas. Dr. Brown's expertise and areas of interest include modeling and simulation of thermal/fluid transport phenomena in physiological and engineered systems, energy transport, conversion and storage, and engineering education. Over the course of her career she's been awarded over \$6 million dollars in funding as PI/co-PI in STEM and engineering education research and training. Dr. Brown holds a Ph.D. in Mechanical Engineering from University of Nevada - Las Vegas,

a Master Degree in Mechanical Engineering from University of Nevada - Las Vegas, a Bachelor of Science Degree in Physics from Xavier University - Louisiana, and a Master of Business Administration from The University of Texas at Tyler (UT Tyler).

Dr. Brown is active with related professional organizations and is currently a member of the American Society of Mechanical Engineering (ASME), the American Society of Engineering Education (ASEE), and the Society of Automotive Engineers (SAE). She serves as the advisor for the collegiate chapter of SAE at UT Tyler.

Research Interest:

Dr. Brown's research interests include modeling and simulation of thermal/fluid transport phenomena in physiological and engineered systems, energy transport, conversion and storage, and engineering education. Employing a combination of theoretical and computational approaches, she investigates a broad range of thermal fluids and energy systems covering a range of scales from micro- and nano-scales to macro-scales. Some of her previous research projects include modeling and simulation of the efficiency of parabolic solar trough collectors used for domestic heating applications, thermal comfort and energy demands, and thermal transport phenomena in skin and kidney. She is also actively involved in engineering education research where the application of research methods from education, learning sciences, and behavioral sciences are used to address issues critical to the success of students in engineering, in particular her area of focus is on teaching and learning.

Contact Information:

Email: fbrown@uttyler.edu

Telephone: 903.565.5828

Office Number: RBN 3004