Dr. Heidner is a Professor of Virology in the Biology Department at UTSA. Dr. Heidner is an Assistant Chair for the Biology Department and the UTSA Director of the FAME program. Dr. Heidner is active in teaching and research. The primary focus of Dr. Heidner’s research laboratory is the design and development of alphavirus-based vaccines. Alphaviruses are small RNA viruses that are spread to humans and other vertebrates through the bites of infected mosquitoes. Several alphaviruses (e.g. Venezuelan, Eastern, and Western equine encephalitis viruses) are significant human pathogens and are classified as Category B select agents by the CDC based on a number of criteria including a history of being developed as bioweapons. Alphaviruses possess a number of properties that support their use as vectors for expressing foreign genes of interest. Therefore, these viruses have been researched extensively for use as recombinant vaccines. Dr. Heidner’s research uses Sindbis virus, the prototype alphavirus, to develop and evaluate new strategies for targeting alphavirus vectors, or alphavirus-expressed antigens to immunologically relevant cell types such as dendritic cells. Dendritic cells play an important role in generating humoral and cellular immune responses to foreign antigens, and his laboratory is studying methods for targeting viruses or their expressed proteins to these cells via selected surface markers such as Fc receptors and other cell-specific receptors involved in antigen binding, uptake and presentation.