TEXAS STATE
MATHEMATICS

* There are two talks today.*
* The time of this talk has been changed to 10:00-11:00 AM. *

Discrete Mathematics Seminar

Time: Friday, April 21, 2023, 10:00 - 11:00 AM (Central Time)
Title: Punctured groups for exotic fusion systems
Speaker: Dr. Justin Lynd, University of Louisiana at Lafayette
Location: 331 Derrick Hall

Abstract:

The fusion system of a finite group G at a prime p is a category whose objects are the subgroups of a fixed Sylow p-subgroup S, and where the morphisms are the conjugation homomorphisms between subgroups of S induced by elements of G. The notion of a saturated fusion system is abstracted from this and leads to exotic examples, namely saturated fusion systems not realizable by a finite group in the above fashion. Given an exotic fusion system, one might want to ask: how close is it to being realizable by a finite group? This leads to the study of punctured groups, which are the most group-like objects that one can hope to associate with an exotic fusion system. I plan to give some background on these topics, look at some examples such as the Benson-Solomon exotic fusion systems at the prime 2, and time permitting mention an application of the existence of a punctured group to the topology of classifying spaces. This is joint work with Assaf Libman and Ellen Henke.