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## **Discrete Mathematics Seminar**

Time: Friday, March 6, 2020, 2:15-3:15 PM  
Room: 330 Derrick Hall  
Title: Data Driven Automated Conjecturing with TxGraffiti  
Speaker: Dr. Randy Davila, Department of Mathematics and Statistics, University of Houston - Downtown

### Abstract:

Research mathematicians seek to prove and disprove mathematical conjectures. The conjectures of professional mathematicians are often constructed by hours of examining patterns and quantities for a given type of mathematical object. In an attempt to mimic the conjecturing process of the professional mathematician, the computer program TxGraffiti makes use of a large database of mathematical objects, and computed quantities on these objects, along with predetermined heuristics to generate mathematical conjectures on simple graphs/ networks. In this talk we describe previous related conjecturing programs (a field of study generally referred to as automated conjecturing) as well as describe the design of TxGraffiti. Further, we mention novel results and open problems that were inspired by the conjectures TxGraffiti.