



THE UNIVERSITY of
MISSISSIPPI

Department of Mathematics

AMS Graduate Student Seminar

Matthew Just

Fermat and the Elite Primes

Thursday, October 22, 2020,

2:30PM on Zoom

Meeting ID: 952 2076 6181

Passcode: AMS

Abstract: The Fermat numbers are given by $F_n = 2^{2^n} + 1$ for $n \geq 0$. It was conjectured by Fermat that all such numbers are prime, a conjecture that was proved for all $n \leq 5$. Fermat was unable to determine whether F_6 was prime, and indeed it is not. An efficient test now exists to determine whether a Fermat number is prime, and it is known that F_n is composite for $6 \leq n \leq 32$. A sequence of primes related to this test, called elite primes, are discussed in this talk.