The Math/Stats Colloquium
Department of Mathematics and Statistics
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Generalizations of the Erdös-Mirsky Conjecture on Values of the Divisor Function

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Abstract: The Erdös-Mirsky conjecture (proved by Heath-Brown) states that $d(x) = d(x + 1)$ for infinitely many x where $d(x)$ denotes the number of divisors of a positive integer x. Here we will discuss how one can prove stronger and more general forms of the conjecture by applying the GGPY sieve for small gaps between E_2-numbers (products of two distinct primes) and considering relations among tuples of linear forms. For example, we can show that for every n there exists an A such that $d(x) = d(x + n) = A$ for infinitely many x, and there are a, b with $0 < a < b < 10$ such that $d(x) = d(x + a) = d(x + b) = 192$ for infinitely many x.

Background: All you need is a love of prime numbers and math.

About the speaker: Jordan Schettler is currently an Associate Professor in the Math/Stats Department at SJSU. He earned his PhD from U. Arizona in 2012 and was a Visiting Assistant Professor at UC Santa Barbara before joining SJSU in 2015. His research interests include prime numbers, modular forms, zeta functions and connections of mathematics to art, music, and social justice.

Colloquium broadcast via Zoom, 4:15pm Pacific
Email tim.hsu@sjsu.edu for an invitation

For our full schedule, see: http://www.timhsu.net/colloq/