Pacific Institute for the Mathematical Sciences

Dr. Micah Milinovich
University of Mississippi

Title: An Introduction to the Riemann Hypothesis and Gaps between Primes

Abstract: There is a beautiful connection between the prime numbers and the zeros of Riemann zeta-function in the complex plane, and understanding the distribution of these zeros can lead to remarkable consequences in our understanding of the primes. A famous open problem, known as the Riemann Hypothesis, states that the non-real zeros of the Riemann zeta-function lie on a vertical line. I will motivate this conjecture, describe some evidence for it, and describe some of the consequences it would lead to in our understanding of the primes. In particular, I will describe how to bound on the maximum gap between prime numbers assuming the Riemann Hypothesis which is based on joint work with E. Carneiro (ICTP) and K. Soundararajan (Stanford).

Bio: Professor Milinovich received his Ph.D. in Mathematics from the University of Rochester in 2008 under the supervision of Steven M. Gonek. Prior to his graduate studies, he briefly taught middle school mathematics in the New York City public school system in Long Island City, Queens. In 2008, he joined the faculty of the University of Mississippi, where he currently resides. His research interests include the distribution of the primes, the theory of the Riemann zeta-function and other L-functions, and the interplay between Fourier analysis and number theory. He has been a research visitor at a number of institutions around the world, and recently spent the Fall 2022 Semester as a visiting researcher at the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy. To date he has supervised 8 graduate students and he has published research with 28 different co-authors including many leading researchers in Analytic Number Theory. He has held a number of awards including grants from the NSF, NSA, and the Simons Foundation. His current research is supported by the National Science Foundation (USA).

Friday, January 17 11:00am – 12:00pm
Markin Hall Room M1040
Coffee and Snacks provided. Everyone is Welcome.