Speaker: Kannan Soundararajan

Title: Equidistribution from the Chinese Remainder Theorem

Abstract: Suppose for each prime p we are given a set A_p (possibly empty) of residue classes mod p. Use these and the Chinese Remainder Theorem to form a set A_q of residue classes mod q, for any integer q. Under very mild hypotheses, we show that for a typical integer q, the residue classes in A_q will become equidistributed. The prototypical example (which this generalizes) is Hooley's theorem that the roots of a polynomial congruence mod n are equidistributed on average over n. I will also discuss generalizations of such results to higher dimensions, and when restricted to integers with a given number of prime factors. (Joint work with Emmanuel Kowalski.)