1073-11-244 **Nathan C. Jones***, Mathematics Dept, University of Mississippi, Hume Hall 305, P.O. Box 1848, University, MS 38677. *The Lang-Trotter conjecture for Frobenius fields.*

Let E be an elliptic curve defined over Q. For each prime p of good reduction for E, consider the quadratic extension K(p) obtained by adjoining to Q the roots of the p-th Frobenius polynomial. In 1976, S. Lang and H. Trotter predicted a precise asymptotic formula for the number of primes p up to X for which K(p) is equal to a fixed imaginary quadratic field. In this talk, I will discuss recent joint work with A.C. Cojocaru and H. Iwaniec, in which we prove that the Lang-Trotter Conjecture holds "on average" over families of elliptic curves. (Received August 02, 2011)