Kempner Colloquium

Arithmetic geometry and recurrence sequences

Katherine Stange

Stanford University

We will discuss recurrence sequences associated to algebraic groups. These include familiar examples, like arithmetic progressions and Lucas sequences (e.g., Fibonacci numbers), but we will focus on a family of sequences associated to elliptic curves. These elliptic divisibility sequences contain information about a cyclic subgroup of the Mordell-Weil group of rational points on the curve. The theory also has connections to logic and combinatorics. We'll see how the sequences can be generalized to capture the structure of the whole Mordell–Weil group, with applications to Diophantine geometry and cryptography.

January 27, 2012
4:00 p.m.
MATH 350