SPECIAL NUMBER THEORY TALK

DATE: Tuesday, September 13

TIME: 4:00 p.m.

Room: 528 Mathematics Building

SPEAKER: Samit Dasgupta (UC Santa Cruz)

TITLE: The p-adic L-functions of evil Eisenstein series

Abstract: Let f be a newform of weight $k + 2$ on $\Gamma_1(N)$, and let $p \nmid N$ be a prime. For each root α of the Hecke polynomial of f at p, there is a corresponding p-stabilization f_α on $\Gamma_1(N) \cap \Gamma_0(p)$ with U_p-eigenvalue equal to α. The construction of p-adic L-functions associated to such forms f_α has been much studied. The non-critical case (when $\mathrm{ord}_p(\alpha) < k + 1$) was handled in the 1970s via interpolation of the classical L-function in work of Mazur, Swinnerton-Dyer, Manin, Visik, and Amice-Vélu. Recently, certain critical cases were handled by Pollack and Stevens, and the remaining cases were finished off by Bellaïche. Many years prior to Bellaïche's proof of their existence, Stevens had conjectured a factorization formula for the p-adic L-functions of evil (i.e. critical) Eisenstein series based on computational evidence. In this talk we describe a proof of Steven's factorization formula. A key element of the proof is the theory of distribution-valued partial modular symbols. This is joint work with Joël Bellaïche.