Title: The Sato-Tate Conjecture and Beyond

Abstract: Perhaps the most exciting recent result in number theory is Richard Taylor's proof of (most of) the Sato-Tate conjecture about the semicircle distribution of eigenvalues associated to an elliptic curve. In this talk we will illustrate Sato-Tate with some explicit data, discuss the meaning of the Sato-Tate conjecture, and present some new joint investigations with Barry Mazur to make a more refined version of the conjecture.