Title:
Iwasawa theory of elliptic curves

Abstract:
The conjecture of Birch and Swinnerton-Dyer (BSD), which relates an analytic invariant of an elliptic curve to the arithmetic of the curve, is unquestionably one of the most important open problems in number theory today. Inspired by Kummer's attempt to solve Fermat's Last Theorem and the mysterious connection between ideal class groups and zeta values it displayed, Iwasawa developed in 1973 an idea which later evolved into one of the fundamental branches of modern number theory. Iwasawa theory has been applied to a wide circle of problems in which values of L-functions (or zeta functions) play a key role, and proved to be one of the most fruitful ways of understanding the BSD conjecture. The aim of this talk is to give an overview of the origin and the basic ideas of Iwasawa theory, and to discuss some important applications.