

## **abstract**

JOINT PRINCETON-IAS NUMBER THEORY SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

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Suppose  $E$  is an elliptic curve defined over a number field  $K$ , and  $p$  is a prime where  $E$  has good ordinary reduction. The usual methods of Iwasawa theory give a single Iwasawa module from which one can recover the Selmer groups of  $E$  over all finite extensions of  $K$  in a  $\mathbb{Z}_p^d$ -extension. These Selmer groups come with important pairings: the Cassels pairing on the Tate-Shafarevich group and the  $p$ -adic height pairing on the Mordell-Weil group. In joint work with Barry Mazur we show that (under mild hypotheses) there is a free Iwasawa module with a skew-Hermitian pairing (unique up to isomorphism) from which one can recover not only the Selmer groups over all intermediate fields but all of the pairings as well. In this talk I will explain this result and give some examples.