

*Department of Mathematics,  
University of California, San Diego*

\*\*\*\*\*

# **Math 209 Number Theory Seminar**

## **Katherine Stange**

Brown University

## **Elliptic Nets**

### **Abstract:**

Elliptic divisibility sequences are integer recurrence sequences, each of which is associated to an elliptic curve over the rationals together with a rational point on that curve. I'll give the background on these and present a higher-dimensional analogue over arbitrary base fields. Suppose  $E$  is an elliptic curve over a field  $K$ , and  $P_1, \dots, P_n$  are points on  $E$  defined over  $K$ . To this information we associate an  $n$ -dimensional array of values of  $K$  satisfying a complicated nonlinear recurrence relation. These are called elliptic nets. All elliptic nets arise from elliptic curves in this manner. I'll explore some of the properties of elliptic nets and the information they contain, relating them to generalised Jacobians and to the Tate and Weil pairings.

Host: Audrey Terras

**Tuesday, November 20, 2007**

**2:00 PM**

**AP&M 7421**

\*\*\*\*\*