Geometry, Auctions, Matching, and the Existence of Equilibrium with Indivisibilities

Elizabeth Baldwin and Paul Klemperer will both talk.

We will describe a new geometric framework of "demand types" for categorising and understanding demand. For example, we obtain easy-to-check necessary and sufficient conditions for the existence of a competitive equilibrium for indivisible goods. (Contrary to common belief, existence is not associated with substitute relationships.)

We can use the same geometric techniques to analyse stability in matching problems.

The techniques also help develop the “product mix auction” that Paul invented in response to the then-Governor of the Bank of England, Mervyn King’s request at the beginning of the financial crisis. The Bank of England this month implemented an updated version of the auction (endogenising total quantity and permitting more dimensions) with help from both Elizabeth and Paul, and Mark Carney recently announced plans for greater use of the auction.

Our paper about the geometric analysis of demand is here
http://www.nuff.ox.ac.uk/users/klemperer/Tropical.pdf

For lighter entertainment a 5 min video with an interview with then-Deputy Governor of the Bank, Paul Tucker, was published by the Guardian newspaper here:
http://www.economics.ox.ac.uk/index.php/General-News/how-geometry-came-to-the-rescue-during-the-banking-crisis-video

[A paper about the original auction is here
http://www.nuff.ox.ac.uk/users/klemperer/productmix.pdf]