The Market Design Sequence  
Fall 2, Spring 1

The "Market Design Sequence" is a second-year sequence of two half-term courses to be taught by David McAdams (Market Design I: Auctions) and Atila Abdulkirgolu (Market Design II: Matching).

The first course in the sequence, Market Design I: Auctions, will be offered in Fall Term 2. This course will (i) provide foundations in mechanism design theory, (ii) introduce key results and open areas in auction theory, and (iii) conclude with a discussion of empirical auctions. Similarly, Atila’s matching course will provide a foundation in the theory and empirical methods associated with matching markets. The entire two-course sequence has an ambitious goal, to introduce you to the theoretical and empirical tools that you will need to embark _immediately_ on your own original research.

The Market Design Sequence will be of value to two sorts of students:

1. **Theoretically-minded students**. Auctions and matching markets continue to provide rich and relatively untapped research frontiers for economic theory, despite decades of intense interest. Further, there is a rich interplay between theory and practice in these fields, wherein practical issues in market design spark new theoretical advances. Consequently, theorists with a solid understanding of real-world practice will have a comparative advantage at identifying novel and significant open questions.

2. **Empirically-minded students** (especially fields like IO, Labor, etc where auctions or matching markets are important or potentially important). Auctions and matching markets have received much attention in the empirical literature recently, because (i) high-quality data is often available, (ii) the data is generated in a game with well-known rules so that there is a relatively clear connection between the theory and the data, and (iii) the theory generates a variety of predictions as well as crisp methods to analyze the data. Consequently, empirically-minded students with a solid understanding of auction and matching theory will have a comparative advantage when analyzing data generated in these markets.

The Market Design Sequence is designed for second-year PhD students in Economics. Students in other fields should contact David for permission to enroll in Market Design I, and Atila to enroll in Market Design II.

The topics covered in the Market Design Sequence are a particular strength of Duke Economics faculty. Thus, students can leverage what they learn in the Market Design Sequence in their research relationships with many Duke faculty other than David and Atila. To get a sense of Duke's strength and depth in auctions and matching, consider the breadth of Duke faculty who have published research related to auctions or matching in the leading journals of economics. [SEE NEXT PAGE]
A (non-exhaustive) list of faculty interested in auctions and/or matching includes:

- **Attila Ambrus**, e.g. “Gradual bidding in eBay auctions”, with James Burns, working paper.
- **Federico Bugni**, e.g. "Test on Risk Aversion in Auctions under Weak Assumptions", with Xun Tang, in progress.
- **Vincent Conitzer**, e.g. Computationally Feasible Automated Mechanism Design: General Approach and Case Studies, with Mingyu Guo, Proceedings of the 24th National Conference on Artificial Intelligence (AAAI-10).
- **Pino Lopomo**, e.g. “Collusion via Signaling in Ascending Auctions with Multiple Objects and Complementarities”, with Sandro Brusco, Review of Economic Studies (2002).
- **James Roberts**, e.g. "Unobserved Heterogeneity and Reserve Prices in Auctions", working paper.
- **Andrew Sweeting**, e.g. "Entry and Selection in Auctions", with James Roberts, working paper.
- **Huseyin Yildirim**, e.g. "Learning by Doing and Dynamic Regulation," with Tracy Lewis, RAND Journal of Economics (2002).