FRIDAY, OCTOBER 10TH  

12-12:45 p.m. LUNCH

12:45 – 1:00 p.m. OPENING REMARKS

Gareth James, Vice Dean for Faculty and Academic Affairs & Professor of Data Sciences and Operations, USC

1– 2 p.m.  SESSION 1

Beautiful Lemons: Adverse Selection in Durable-Goods Markets with Sorting
Jonathan Peterson (NRU) and Henry Schneider (Cornell)

We document a basic characteristic of adverse selection in secondhand markets for durable goods: goods with higher observed quality may have more adverse selection and hence lower unobserved quality. We provide a simple theoretical model to demonstrate this result, which is a consequence of the interaction of sorting over observed quality between drivers with different quality valuations and adverse selection over unobserved quality. We then offer empirical support using data on secondhand prices and repair rates of used cars from the Consumer Expenditure Survey, and discuss a number of implications for everyday advertising and consumer questions.

Discussant: Vineet Kumar (Yale)

2– 3 p.m.  SESSION 2

An Empirical Analysis of Complementarities between the Consumption of Goods and Advertisements
Pedro Gardete (Stanford), Harikesh S. Nair (Stanford), and Anna Tuchman (Stanford)

The standard paradigm in the empirical literature is to treat consumers as passive recipients of advertising by firms, with the level of ad exposure determined by consumer characteristics and targeting technology. This paradigm ignores the fact that consumers may actively choose their consumption of advertising, thus effectively rendering the level of ad exposure endogenous. Endogenous consumption of advertising is common. Consumers can easily choose to change channels to avoid TV ads, click away from paid online video ads (e.g., TrueView ads on YouTube), or discard direct mail without reading advertised details. Becker and Murphy (1993) recognized this aspect of demand for advertising and argued that advertising should be treated as a good in consumers’ utility functions, thereby effectively creating a role for consumer choice over
advertising consumption. They argued that in many cases demand for advertising and demand for products may be linked by complementarities in joint consumption. We leverage access to an unusually rich dataset that links the TV ad consumption behavior of a panel of consumers with their product choice behavior over a long time horizon to measure the co-determination of demand for products and ads. The data suggests an active role for consumer choice of ads, and for complementarities in joint demand. To interpret the patterns in the data, we fit a structural model for both products and advertising consumption that allows for such complementarities. We explain how complementarities are identified. Interpreting the data through the lens of the model enables a precise characterization of the sub-population that consumes advertising conditional on exposure, and thereby facilitates a more precise assessment of the treatment effect of advertising under such endogenous non-compliance. The model also enables assessments of the welfare effects of advertising. To illustrate the value of the model, we compare advertising, price responses and welfare under the model to a setup in which ad consumption is not treated as a choice under the control of consumers. We believe the results have important implications for interpreting ad effects in empirical work generally, and for the assessment of ad effectiveness in many market settings.

Discussant: Song Yao (Northwestern)

3 – 3:30 p.m. Break

3:30 – 4:30 p.m. Session 3

**Consumer Advertising Competition in Prescription Drugs**
Michael Sinkinson (Wharton) and Amanda Starc (Wharton)

We study competition in direct-to-consumer television advertising (DTCA) among statin manufacturers. Our identification strategy is to exploit shocks to local advertising markets at different points in time generated by idiosyncrasies of the political advertising cycle. We document that political ads displace drug ads, estimate own- and cross-advertising revenue elasticities for pharmaceuticals, and build a model of firm advertising competition. Estimates show significant business-stealing effects of advertising among branded drugs as well as large spillovers to generic drugs, both of which would not be detected through OLS. Counterfactual results show a decrease in both branded and generic drugs in the absence of DTCA advertising and quantify the importance of strategic interaction.

Discussant: Günter Hitsch (University of Chicago Booth)

4:30 – 5:30 p.m. Session 4

**Optimal Selling Strategies When Buyers Name Their Own Prices**
Robert Zeithammer (UCLA)

This paper models a name-your-own-price (NYOP) retailer who allows buyers to initiate their retail interaction by describing a product and submitting a binding bid for it. The buyers have an outside option to buy the same good for a commonly known posted price that also acts as an informative upper bound on the cost the NYOP retailer faces. We conceptualize a selling strategy of such a NYOP retailer to be the probability that a buyer’s bid gets accepted that is a function of only the bid-level and the commonly known outside spot-market price, but does not depend on the exact realization of the retailer’s procurement cost. Using mechanism design techniques, we characterize the optimal selling strategy and the equilibrium bidding function that best responds to it. We show that the optimal strategy implements the first-best ex-post optimal mechanism: for every cost realization, the retailer can make as much profit as he would if he could learn his cost first and use the optimal mechanism contingent on it. The complexity involved in credibly communicating an entire bid-acceptance function to buyers can make first-best strategy impractical in some real-world markets, so we also analyze several simpler NYOP strategies: setting a minimum bid, charging a participation fee, and accepting all bids above cost. When both the distribution of buyer valuations and seller cost are uniform, the minimum-bid strategy dominates the other alternative strategies, and approaches the first-best strategy in terms of profit as the outside price for the same good drops.

Discussant: Esther Gal-Or (Pittsburgh)
6 - 7 p.m.  COCKTAIL RECEPTION

7 - 8:30 p.m.  DINNER AND DICK WITTINK AWARD

SATURDAY, OCTOBER 11TH  TOWN AND GOWN OF USC

8– 9 a.m.  BREAKFAST

9 – 10 a.m.  SESSION 5

*Efficiency and Foreclosure Effects of All-Units Discounts: Empirical Evidence*
Christopher T. Conlon (Columbia) and Julie Holland Mortimer (Boston College)

All-Units Discounts are vertical rebates in which a manufacturer pays a retailer a linear wholesale price up to a quantity threshold; beyond the threshold, the retailer receives a discount on all future and previous units. Such contracts, which are common in many industries, potentially have both efficiency and foreclosure effects. Using a new dataset containing detailed information on the sales and rebate payments of a retailer in the confections industry, we estimate structural models of demand and retailer effort to quantify the efficiency gains induced by the contract. We show how the contract allocates the cost of a stock-out between the manufacturer and retailer, and find evidence that the contract increases industry profitability, but fails to implement the product assortment that maximizes social surplus for the industry. Finally, we point out that the impact of many upstream mergers is felt through wholesale prices instead of retail prices. We examine the impact of various upstream mergers on the willingness of the dominant manufacturer to offer rebate contracts, and the impact that the rebate contracts have on social welfare.

Discussant: Michaela Draganska (Drexel)

10 – 11 a.m.  SESSION 6

*Signaling Value Through Assortment*
Dmitri Kuksov (UT Dallas) and Yuanfang Lin (Wilfrid Laurier)

Oftentimes, close competitors carry partially overlapping assortments in seeming contradiction to the principle of maximum differentiation. One of the justifications of such practice is that an overlapping assortment with competitive prices on the common products may prevent further consumer search and therefore could be useful even when profits from the common products do not justify the costs of carrying them. In this paper, we examine the validity of this intuition and show that such strategy may be optimal when consumers are uncertain about prices they might find elsewhere and have search costs for discovery of all prices. Specifically, we show that the (larger) assortment with the overlapping product(s) may signal that the price of the relatively unique product(s) is “competitive” as well and prevent consumers from searching for lower prices of the relatively unique products.

Discussant: Dina Mayzlin (USC)

11 – 11:30 a.m.  BREAK

11:30 a.m. – 12:30 p.m.  SESSION 7

*Dynamic Models with Unobserved State Variables and Heterogeneity: Time Inconsistency in Drug Compliance*
Yonghong An (Texas A&M), Yingyao Hu (John Hopkins), and Jian Ni (John Hopkins)

Time preference plays an important role in understanding inter-temporal economic behavior. The frequently-used dynamic models suffer from under-identification, where the discount factors are often assumed based
on market interest rate. The identification of these discount factors is only achieved through certain exclusion restrictions in revealed preference data. Moreover, behavior literature have shown strong evidence of time inconsistency, and illustrate that agents' discount factors could vary across individuals and across time for the same individual. Built upon the recent development in the measurement-error literature, we establish the identification of heterogeneous hyperbolic discounting preference with unobserved state variables in the stationary environment by utilizing the Markov structure while without necessarily resorting to the exclusive restriction. We then develop an estimation strategy and apply it to consumers’ prescription drug refilling. We find substantial time inconsistency and heterogeneity in agents’ inter-temporal choice behavior. This provides novel opportunities of policy interventions to reduce patients’ non-compliance behavior and improve their well-being.

Discussant: Botao Yang (USC)

12:30 – 1:30 p.m.  LUNCH

1:30 – 2:30 p.m.  SESSION 8

*Brand Effects in Search Advertising*
Przemyslaw Jeziorski (UC Berkeley) and Sridhar Moorthy (Toronto)

We develop and estimate a dynamic Bayesian model of consumer response to sponsored search advertising. In our model, consumers use search ads to search the offers ("quality") of competing online retailers selling a branded product. Their sequential search is directed by two types of ad prominence: prominence due to ad position and prominence due to advertiser brand. Using individual-level click-stream data from Microsoft Live Search and measures of brand strength from Alexa.com, we estimate a structural model to recover the unobserved qualities of the retailers’ offers, and estimate how ad position and advertiser brand interact in determining click-through-rate (CTR). We find that, contrary to previous assertions in the literature, ad position and advertiser brand strength are substitutes, not complements. Specifically, a weakly branded retailer increases its click-through-rate by as much as 150% in going from the bottom ad position to the top, while the corresponding increase for a strongly branded retailer is less than 50%. In addition, order of clicks and quality—which is essentially lower price—are positively correlated, suggesting that ad prominence, of either type, is not a significant source of market power for the search advertiser. These results suggest that in terms of gaining attention, search advertising is not very different from traditional TV or print advertising, but in its power to inform and persuade, search advertising is necessarily more limited.

Discussant: Matthew Shum (Cal Tech)

2:30 – 3:30 p.m.  SESSION 9

*The Effect of Calorie Posting Regulation on Consumer Opinion: A Flexible Latent Dirichlet Allocation Model with Informative Priors*
Dinesh Puranam (Cornell), Vishal Narayan (NUS), Vrinda Kadiyali (Cornell)

In 2008, New York City mandated that all multi-unit restaurants post calorie information in their menu. For managers of multi-unit and stand-alone restaurants, and for policy makers, a pertinent goal might be to monitor the impact of this regulation on consumer conversations. We propose a scalable Bayesian topic model to measure and understand changes in consumer opinion about health (and other topics). We calibrate the model on 761,962 online reviews of restaurants posted over 8 years. We generalize topic extraction approaches in marketing and computer science. Our model allows managers to specify prior topics of interest such as “health” for a calorie posting regulation. It also allows the distribution of topic proportions within a review to be affected by its length, valence and the experience level of its author. Using a difference-in-differences approach, we isolate the potentially causal effect of regulation on consumer opinion. Following the regulation, there was a statistically small but significant increase in the proportion of discussion of health topics. This increase can be attributed largely to authors who did not post reviews before the regulation, suggesting that the regulation prompted several consumers to discuss health in online restaurant reviews for the first time.

Discussant: Asim Ansari (Columbia)
Global Regularity and Flexibility of Demand Systems in the Presence of Non-Negativity Constraints: A Theoretical and Empirical Analysis
Nitin Mehta (Toronto)

A vexing challenge faced by researchers when using the utility-maximization framework to estimate consumers’ decisions on which set of goods to purchase and how much quantity to buy, is obtaining a functional form of the utility that satisfies three criteria: tractability, flexibility and global-regularity. Flexibility refers to the ability of the utility function to impose minimal prior restrictions on the demand elasticities (in terms of allowing for inferior/normal goods, and allowing for complementarity/substitutability between goods). Global regularity refers to the ability of the utility function to satisfy the regularity properties required by economic theory (i.e., monotonicity and quasi concavity) in the entire feasible space of variables in the utility maximization problem. The tractable utility functions used in the prior literature are either inflexible which could yield inaccurate estimates of underlying demand elasticities and thereby inaccurate results in policy simulations, or do not satisfy global regularity which can result in invalid expressions of the likelihood and invalid policy simulations.

The candidates that can potentially satisfy all three criteria are flexible functional forms of indirect utilities. The issue however with flexible functional forms is that prior restrictions need to be imposed on their parameters so that they satisfy global-regularity. To have minimal impact on their flexibility, these prior restrictions should be necessary and sufficient conditions (i.e., the least restrictive conditions on the parameter space) that ensure global-regularity of the flexible functional form. However, only sufficient conditions have been proposed to date, (i.e., they are sufficient but not necessary, and thus are more restrictive on the parameter space as compared to necessary and sufficient conditions) which greatly diminish their flexibility. We tackle this long standing problem by deriving the necessary and sufficient conditions for the global-regularity of Basic Translog indirect utility, a widely used flexible functional form. We show that as compared to alternatives used in the literature, our proposed demand system (a) imposes much fewer restrictions on the demand elasticities, and (b) yields better model fit, more accurately captures the true demand elasticities in the data and yields substantially different results in policy simulations.

Discussant: Peter Rossi (UCLA)