Kevin J. McLaughlin, PhD

Contact Information

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Research Interests

Experimental & Behavioral Economics, Recommender Systems, Mechanism Design, Microeconomics, and Industrial Organization

Research Papers

"Online Ad Auctions: An Experiment" (Job Market Paper)
I compare, for the first time, how the two main auction formats used in online advertising (Vickrey-Clarke-Groves and Generalized Second Price) perform in real time markets. A first round of laboratory sessions using proprietary software suggest that (a) the Vickrey-Clarke-Groves format is more efficient in a competitive parameter environment (achieving 73% efficiency over random allocation vs. 53% under GSP), while generating a similar level of auctioneer revenue, and (b) the Generalized Second Price format generates more auctioneer revenue in a less competitive environment (capturing 109% of the unique VCG equilibrium revenue level vs. 96% under VCG) while achieving a similar level of efficiency (about 87%).

Work in Progress

"Reserve Prices in Internet Advertising Auctions: A Lab Experiment"
I revisit the questions posed by Ostrovsky and Schwarz (2009) in a laboratory environment. I compare how "optimal reserve prices" affect revenues, efficiency, and bidding behavior across both the VCG and GSP auction formats.

"Further Complications in Internet Advertising Auctions: An Experiment"
I add complications seen in internet advertising markets to my previous lab experiments. This includes the addition of human interaction with automated bidders, heterogeneous ad specific effects, budget pacing parameters, and more phenomena seen in the field. Treatments that are of particular interest for policy are a within subject design where auction formats are switched from GSP to VCG and vice versa.

"Combinatorial Clock Auctions: Price Direction and Performance" with David Munro and Stephen Rassenti
This paper addresses three concerns with ascending price Combinatorial Clock Auctions (APCA); price guidance toward efficiency relevant packages, computational burden, and susceptibility to collusive bidding. We propose a descending price Combinatorial Clock Auction (DPCA) with a newly devised pricing strategy to alleviate all of these concerns. Agent-based simulations of DPCA show improvements in efficiency resulting from better price guidance and a reduction in computational burden when compared to APCA. Laboratory experiments are planned to be run in LEEPS Lab.

Grants Awarded

Google Faculty Research Award – Successfully drafted a proposal for Google to fund experiments on ad auctions ($55,200).

Presentations

Stanford Institute for Theoretical Economics, Session 7 (2014) – Invited to speak about "Online Ad Auctions: An Experiment" at SITE conference session on experimental economics

ESA North America Conference (2014) – Contributed paper "Online Ad Auctions: An Experiment"

Economics Dept. Talk (2014) – University of California Santa Cruz

Economics Dept. Talk (2014) – ESI, Chapman University – Invited to speak about my work on online ad auctions

Bay Area Behavioral and Experimental Economics Workshop (2015) – Contributed paper "Online Ad Auctions: An Experiment"

Academic Appointments

Research Associate August 2015 to present
Economic Science Institute (ESI)
- Experimental economics research on market mechanisms
- Topics include: combinatorial auctions, online advertising auctions, market design

Research Assistant March 2014 to June 2015
Under Dr. Daniel Friedman, University of California Santa Cruz
- Google funded research project on "Online Ad Auctions: An Experiment"
- Design and run treatments in LEEPS Lab comparing the two most common auction formats used to sell online ad space

Research Assistant March 2014 to June 2014
Under Dr. Daniel Friedman, University of California Santa Cruz
- NSF funded research project on "Economic Analysis of Recommender Systems"
- Project to shed broader light on the economic benefits and costs that recommender systems bring to the market

Research Assistant January 2014 to March 2014
Under Dr. Nirvikar Singh, University of California Santa Cruz
- Project commissioned by Indian Government to study Indian-American entrepreneurs

Research Assistant June 2011 to September 2011
Under Dr. Daniel Friedman, University of California Santa Cruz
- Monte-Carlo type work done looking at Rock-Paper-Scissor games in continuous and discrete time.
- Advanced stochastic differential equation modeling done in R.

Research Assistant June 2011 to September 2011
Under Dr. Nirvikar Singh, University of California Santa Cruz
- Advanced econometric models used to evaluate the public health care system in India.

Undergraduate Researcher May 2008 to December 2008
Under Dr. Christopher Dumas, University of North Carolina Wilmington
- Collected survey data on fisheries along the North Carolina coast.
- Create and organize data in database.

Education

University of California Santa Cruz, Santa Cruz, CA

PhD, Economics, June 2015
- Thesis Topic: *Online Ad Auctions*
- Dissertation: *Experiments in Online Ad Auctions*
- Adviser: Distinguished Professor Daniel Friedman
- Area of Study: Experimental and Behavioral Economics

M.A., Economics, June 2011

- Thesis Topic: *Applied Regression Discontinuity*
- Adviser: Professor Carlos Dobkin
- Area of Study: Applied Microeconomics

University of North Carolina Wilmington, Wilmington, NC

B.A., Economics and Mathematics, December 2008

- With Honors in Economics

Teaching Experience

University of California Santa Cruz, Santa Cruz, CA

Teaching Assistant **January 2010 to Present**
(sample graded material and student evaluations available upon request)

- Grader for ECON 170: Environmental Economics
  - Winter 2010
- Grader for ECON 171: Natural Resource Economics
  - Spring 2010
- Teaching Assistant for ECON 113: Introduction to Econometrics
  - Spring 2010, Fall 2010
  - Responsible for two 1-hour lecture & office hours. Students are introduced to the statistical package R and learn to run basic regressions and statistics.
  - Authored material at `https://sites.google.com/site/ucscecon113/`.
- Teaching Assistant for ECON 125: US Economic History
  - Winter 2011
  - Responsible for two 1-hour lectures and office hours.
- Teaching Assistant for ECON 204B: Advanced Microeconomic Theory II (Game Theory)
  - Winter 2011
  - Responsible for lectures in the second of three first year Ph.D. Microeconomics courses.
- Teaching Assistant for ECON 139A: E-Commerce
  - Spring 2011
  - Responsible for lecture and office hours
- Teaching Assistant for MATH 3: PreCalculus
  - Fall 2011 & Winter 2012
  - Responsible for lecture and office hours.
- Teaching Assistant for ECON 1: Intro to Microeconomics
  - Summer 2014
  - Responsible for lecture and office hours.

Professional Experience

Facebook, Inc., Menlo Park, CA

Intern for Monetization Analytics **September 2012 to March 2013**

- Worked with the Monetization Analytics team to analyze data captured from the Facebook ads platform. I performed several types of analysis including regression discontinuity design, logit models, and fixed effects models to determine correlations and causations in the data.

Keefe, Bruyette & Woods, New York, NY

Undergraduate Intern for Fixed Income **July 2007 to August 2007**

- Worked in Fixed Income Division.

Professional Memberships

American Economic Association (AEA), Student Member, 2010–present

Economic Scientist Association (ESA), Student Member, 2011–present

National Association for Business Economics (NABE), Student Member, 2006–2008
- Treasurer for UNCW Chapter, 2006–2007
- President for UNCW Chapter, 2007–2008

Software Skills

Computer Programming:
- Basic knowledge: Perl, Java, Python
- Intermediate knowledge: MATLAB, Maple, MS Access, Mathematica, UNIX Command Line, SQL
- Advanced knowledge: SAS, LaTeX, Hive
- Expert knowledge: R

Operating Systems:
- Microsoft Windows family, Apple OS X, Linux and some other UNIX variants

Expertise

Economics:
- Experimental & Behavioral Economics, Applied Microeconomics & Econometrics, Recommender Systems, Microeconomic Theory, Macroeconomic Theory

Mathematics:
- Game Theory, Applied Mathematics, Real and Complex Analysis, Combinatorics

References:

Dr. Daniel Friedman (e-mail: dan@ucsc.edu; phone: +1-831-459-4981)
- Distinguished Professor, Economics,
  University of California Santa Cruz
  - ◇ 417 Engineering 2, 1156 High Street, Santa Cruz, CA 95064
  - ⋆ *Dr. Friedman was my PhD advisor, the primary investigator on my Google funded ad auction research project, and a co-PI on the NSF funded (CCF-1101741) recommender system project in which I am involved.*

Dr. Carlos Dobkin (e-mail: cdobkin@ucsc.edu; phone: +1-831-459-2079)
- Professor, Economics,
  University of California Santa Cruz
  - ◇ 441 Engineering 2, 1156 High Street, Santa Cruz, CA 95064
  - ⋆ *Dr. Dobkin was my Masters advisor and continues to be a valuable resource for my research career.*

Dr. Nirvikar Singh (e-mail: boxjenk@ucsc.edu; phone: +1-831-459-4039)
- Professor, Economics,
  University of California Santa Cruz
  - ◇ 421 Engineering 2, 1156 High Street, Santa Cruz, CA 95064
  - ⋆ *Dr. Singh has been a valuable resource for my research career.*