# CONFERENCE ON DIGITAL EXPERIMENTATION

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Hosted by the MIT Initiative on the Digital Economy

## Friday, October 27th

**8:00am** Registration, Breakfast, Opening Remarks (7th Floor)

**9:00am** Plenary Session 1 (7th Floor)

Session Chair: Erik Brynjolfsson (MIT)
**Experimenting from the Inside-Out: The SBO Project**. Alessandro Acquisti (CMU)
**Neuroscience Approaches to Understanding How Ideas and Behaviors Spread**. Emily Falk (UPenn)
**Getting More from Summary Statistics in Online Experiments: A New Class of Sample Average Treatment Effects**. Jas Sekhon (UC Berkeley)

**10:15am** Coffee Break (6th Floor)

**10:45am** Parallel Sessions (6th Floor)

| A: E-Commerce (DR 3+4) | B: Methods I (DR 5) |
|---|---|
| Session Chair: Emily Falk | Session Chair: Alessandro Acquisti |
| **Binge Watching and the Subscription of Video on Demand: Evidence from a Randomized Field Experiment**. *Miguel Godinho de Matos (Catolica Lisbon)* and Pedro Ferreira (CMU). | **Fair Experimentation**. *Yang Liu (Harvard)*, Goran Radanovic (Harvard), Christos Dimitrakakis (Chalmers University of Technology), Debmalya Mandal (Harvard) and David C. Parkes (Harvard). |
| **Social Media Integration and E-Commerce Platform Performance: A Randomized Field Experiment**. *Ni (Nina) Huang (ASU)*, Tianshu Sun (USC), Peiyu Chen (ASU) and Joseph M. Golden (Collage.com). | **Deep Neural Networks for Interpretable Instrumental Variable-Based Estimation of Heterogeneous Causal Effects**. Dean Eckles (MIT), *Alex Peysakhovich (Facebook)* and Keyon Vafa (Columbia). |
| **The Popover Paradox: Field Experiments at Collage.com**. *Ayelet Israeli (Harvard)*, Garrett Johnson (Northwestern) and Joe Golden (Collage.com). | **Optimal Decision Making Using Heterogeneous Treatment Effects: A Prescriptive Analytics Approach**. *Edward McFowland III (University of Minnesota)*, Sandeep Gangarapu (University of Minnesota) and Ravi Bapna (University of Minnesota). |
| **Free Shipping 3.0: Leveraging Scarcity and Popularity Information**. *Ting Li (Erasmus University)*, Dimitrios Tsekouras (Erasmus University) and Zhi (Aaron) Cheng (Temple). | **Instrumentation of Ranking Mechanisms**. Andrea Ciancone (Booking.com), Jason Hartline (Northwestern), Aleck Johnsen (Northwestern), Shirish Kasa (Booking.com), Denis Nekipelov (University of Virginia), Steve Oliemans (TNT), Roberto Pagano (Booking.com), Eric Soetrisno (Booking.com), Leonardo Soto (Booking.com), Marcell Szathmari (Booking.com) and *Onno Zoeter (Booking.com)*. |
| **What's Best to Test? A Meta-Analysis of E-Commerce A/B Testing Practices**. *Alex P. Miller (UPenn)* and Kartik Hosanagar (UPenn). | **Constrained Bayesian Optimization with Noisy Experiments**. Benjamin Letham (Facebook), Brian Karrer (Facebook) and *Eytan Bakshy (Facebook)*. |

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Select conference abstracts are available at:
http://bit.ly/2yKgTHw

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## Friday, October 27th

**12:00pm**      **Lunch (7th Floor)**

**1:15pm**       **Plenary Session 2 (7th Floor)**

Session Chair: Sinan Aral (MIT)
**Service Quality in the Gig Economy: Empirical Evidence from Uber.** Susan Athey (Stanford)
**The Outsourced Mind: Using Behavioral Science for Better Patient UX.** Renée Richardson Gosline (MIT)
**Metric Pitfalls in Online Controlled Experiments.** Ron Kohavi (Microsoft)

**2:30pm**       **Coffee Break (6th Floor)**

**3:00pm**       **Parallel Sessions (6th Floor)**

| C: Natural Experiments (DR 3+4) | D: Governance & Communities (DR 5) |
|---|---|
| Session Chair: Jas Sekhon | Session Chair: Susan Athey |
| **Content Growth in Wikipedia: A Large-Scale Natural Experiment**. *Kai Zhu (Boston University)*, Lev Muchnik (Hebrew University of Jerusalem) and Dylan Walker (Boston University). | **Crowdsourcing Government Accountability: Experimental Evidence from Pakistan**. *Arman Rezaee (UC Davis)*, Ali Hasanain (Lahore University of Management Sciences) and Yasir Khan (UC Berkeley). |
| **Social Influence, Habits, and Disrupted Performance Environments**. *Christos Nicolaides (MIT and University of Cyprus)*, Dean Eckles (MIT) and Sinan Aral (MIT). | **The Impact and Value of Flexibility in On-Demand Work**. *Ming Yin (Microsoft Research)*, Siddharth Suri (Microsoft Research) and Mary L. Gray (Microsoft Research). |
| **Information Shocks and Internet Silos: Evidence from Creationist Friendly Curriculum**. *Ananya Sen (MIT)* and Catherine Tucker (MIT). | **Mood, High Stakes and Dropouts in an Online Innovation Tournament**. *Stefano Balietti (Northeastern)* and Christoph Riedl (Northeastern). |
| **The Digital Sin City: An Empirical Study of Craigslist's Impact on Prostitution Trends**. *Jason Chan (University of Minnesota)*, Probal Mojumder (University of Minnesota) and Anindya Ghose (NYU). | **Moral Psychology at Scale: Lessons from 35 Million Decisions About Autonomous Vehicles**. *Edmond Awad (MIT)*, Sohan Dsouza (MIT), Richard Kim (MIT), Jonathan Schulz (Harvard), Joe Henrich (Harvard), Azim Shariff (UC Irvine), Jean-Francois Bonnefon (Toulouse School of Economics) and Iyad Rahwan (MIT). |
| **Impact of Ratings on an Online Marketplace**. *Arslan Aziz (CMU)*, Hui Li (CMU) and Rahul Telang (CMU). | **The Effects of Reputation Systems on Markets: An Online Field Experiment**. *David Holtz (MIT)*, P. Alex Dow (Facebook), Brian Karrer (Facebook) and Sinan Aral (MIT). |

**4:15pm**       **Coffee Break (7th Floor)**

**4:45pm**       **Optional: "Birds of a Feather" Breakouts (6th and 7th Floors)**

**6:00pm**       **Reception (7th Floor)**

**7:00pm**       **Fireside Panel: The Truth About Fake News (7th Floor)**

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## Saturday, October 28th

**8:30am** Registration, Breakfast, Opening Remarks (7th Floor)

**9:30am** Plenary Session 3 (7th Floor)

Session Chair: Sandy Pentland (MIT)
**Matrix Completion Methods for Causal Panel Data Models.** Guido Imbens (Stanford)
**Digital Experimentation for Multi-Channel Companies.** Jim Manzi (Applied Predictive Technologies)
**Three Principles of Data Science: Predictability, Stability, and Computability.** Bin Yu (UC Berkeley)

**10:30am** Coffee Break (6th Floor)

**10:45am** Parallel Sessions (6th Floor)

| E: Network Structure (DR 3+4) | F: Methods II (DR 5) |
|---|---|
| Session Chair: Jim Manzi | Session Chair: Bin Yu |
| **An Experimental Study of Structural Diversity in Networks**. *Jessica Su (Stanford)*, Krishna Kamath (Twitter), Aneesh Sharma (Twitter), Johan Ugander (Stanford) and Sharad Goel (Stanford). | **Bayesian A/B Testing.** *David Walsh (Stanford and Microsoft)*. |
| **Testing Higher-Order Network Structures in an Online Experiment**. *Jason Radford (Northeastern)*, Amotz Barnoy (City University of New York), Alexey Nikolaev (City University of New York), Saad Mneimneh (City University of New York), David Lazer (Northeastern) and Ram Ramanathan (BBN Technologies). | **Shortening Online Experiments With Simple and Broadly Applicable Sequential Tests.** Erjie Ang (Facebook), *Dominic Coey (Facebook)* and Onder Polat (Facebook). |
| **The Strength of Weak Ties: Causal Evidence Using People-You-May-Know Randomizations**. *Guillaume Saint-Jacques (MIT)*, Sinan Aral (MIT), Erik Brynjolfsson (MIT), Ya Xu (LinkedIn) and Edo Airoldi (Harvard). | **Optimal Design for Online Social Experimentation.** *Stefano Balietti (Northeastern and Harvard)*, Brennan Klein (Northeastern) and Christoph Riedl (Northeastern and Harvard). |
| **Network Experiments with Dyads**. Alex Chin (Facebook and Stanford), Konstantin Kashin (Facebook) and *Eytan Bakshy (Facebook)*. | **High-Dimensional Social Treatments with Personalized Constraints.** Sean J. Taylor (Facebook) and *Tianshu Sun (USC)*. |
| **Detecting Network Effects: Randomizing Over Randomized Experiments.** *Martin Saveski (MIT)*, Jean Pouget-Abadie (Harvard), Guillaume Saint-Jacques (MIT), Weitao Duan (LinkedIn), Souvik Ghosh (LinkedIn), Ya Xu (LinkedIn) and Edo Airoldi (Harvard). | **Shrinkage Estimators for Causal Effects in Online Experiments.** Eytan Bakshy (Facebook), *Drew Dimmery (Facebook)* and Jasjeet Sekhon (UC Berkeley). |

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## Saturday, October 28th

**12:00pm**     Lunch and Poster Slam (7th Floor)

**1:30pm**     Parallel Sessions (6th Floor)

| G: Health, Education & Gender (DR 3+4) | H: Ratings, Reputation & Marketplaces (DR 5) |
|---|---|
| Session Chair: Ron Kohavi | Session Chair: Guido Imbens |
| **Understanding Gender Gaps in Networking: Evidence from a Randomized Field Experiment.** *Sofia Bapna (University of Minnesota)* and Russell J. Funk (University of Minnesota). | **Community-Led Platform Governance Experiments.** *J. Nathan Matias (MIT).* |
| **Empowering Patients Using Smart Mobile Health Platforms: Evidence From A Randomized Field Experiment.** Anindya Ghose (NYU), Xitong Guo (HIT) and *Beibei Li (CMU).* | **Effect of Sponsored Listings on Online Marketplaces: The Role of Information Asymmetry.** *Siddhartha Sharma (CMU)* and Vibhanshu Abhishek (CMU). |
| **Online Interruptions and Individuals' Performance: A Randomized Field Experiment.** *Veronica Marotta (CMU)* and Alessandro Acquisti (CMU). | **Certification, Reputation and Entry: An Empirical Analysis.** *Xiang Hui (MIT)*, Maryam Saeedi (CMU), Giancarlo Spagnolo (SITE, Tor Vergata, Eief, CEPR) and Steve Tadelis (UC Berkeley). |
| **Mobile Distraction in Class: An Empirical Investigation on Smartphone Use Policies.** *Zhe Deng (Temple)*, Aaron Cheng (Temple), Pedro Ferreira (CMU) and Paul A. Pavlou (Temple). | **The Impact of Verification in Online Matching Markets: Evidence from a Randomized Field Experiment.** *Lanfei Shi (University of Maryland)* and Siva Viswanathan (University of Maryland). |
| **Combating Procrastination on MOOCs Via Targeted Calls to Action: Evidence from a Randomized Field Experiment.** *Nina (Ni) Huang (ASU)*, Jiayin Zhang (Tsinghua University), Gordon Burtch (University of Minnesota), Xitong Li (HEC Paris) and Peiyu Chen (ASU). | **Crafting Personalized Incentives: A Randomized Field Experiment in an Online Dating Platform.** Dirk de Raaff (Erasmus University), *Rodrigo Belo (Erasmus University)* and Ting Li (Erasmus University). |

**2:45pm**     Coffee Break (6th Floor)

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## Saturday, October 28th

**3:15pm**      **Parallel Sessions (6th Floor)**

| I: Wisdom of Crowds & Collective Intelligence (DR 3+4) | J: Advertising (DR 5) |
|---|---|
| Session Chair: Claudia Perlich | Session Chair: Tavneet Suri |
| **The Effect of Social Influence on Collective Intelligence.** *Camelia Simoiu (Stanford)*, Chiraag Sumanth (Stanford), Alok Mysore (UC San Diego) and Sharad Goel (Stanford). | **Measuring the Effects of Audio Advertising: Results from a Field Experiment on Pandora.** David Reiley (Pandora) and *Zhen Zhu (Pandora)*. |
| **Bayesian Models of Learning in the Repeated Secretary Problem.** Daniel G. Goldstein (Microsoft Research), R. Preston McAfee (Microsoft), Siddharth Suri (Microsoft Research) and *James R. Wright (Microsoft Research)*. | **Social Influence in Social Advertising: Public and Private Responses.** *Shan Huang (MIT)*. |
| **Dynamic Influence Networks and the Adaptive Wisdom of Crowds.** *Alejandro Noriega (MIT)*, Abdullah Almaatouq (MIT), Peter Krafft (MIT), Abdulrahman Alotaibi (MIT), Mehdi Moussaid (Max Planck Institute for Human Development) and Alex (Sandy) Pentland (MIT). | **Pay For What You Get - Incentive Misalignments in Programmatic Advertising: Evidence from a Randomized Field Experiment.** *Thomas W. Frick (Erasmus University)* and Rahul Telang (CMU). |
| **Wikipedia Matters.** Marit Hinnosaar (Collegio Carlo Alberto and CEPR), Toomas Hinnosaar (Collegio Carlo Alberto), *Michael Kummer (Georgia Tech)* and Olga Slivko (Centre for European Economic Research). | **Dynamic Personalized Targeting with Hidden User Engagement Stages: Mobile Tapstream Data and Field Experiment.** *Yingjie Zhang (CMU)*, Beibei Li (CMU), Xueming Luo (Temple) and Xiaoyi Wang (Zhejiang University). |
| **The Impact of Social vs. Non-Social Referral Sources on Online News Consumption.** Sagit Bar-Gill (MIT), Yael Inbar (Tel Aviv University) and *Shachar Reichman (Tel Aviv University)*. | **Competitive Poaching in Search Advertising: A Randomized Field Experiment.** Siddharth Bhattacharya (Temple), *Jing Gong (Temple)* and Sunil Wattal (Temple). |

**4:30pm**      **Coffee Break (7th Floor)**

**5:00pm**      **Plenary Session 4 (7th Floor)**

         Session Chair: Sinan Aral (MIT)
         **Creating Effective Creatives - Hardships & Opportunities**. Claudia Perlich (Dstillery)
         **The Effects of Expanding Digital Access in Kenya**. Tavneet Suri (MIT)

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## Saturday, October 28th

**6:15pm          Poster Session and Reception (7th Floor)**

**How Much is the Value of a Genomic Test Information? Evidence from Post-Stent Care Decisions**. *Kellas R. Cameron (Boston University)*, Nachiketa Sahoo (Boston University), Nitin Joglekar (Boston University) and Jugnu Jain (Sapien Biosciences).

**Student Trajectories and School Choice in the New York City Public School System**. *Anandini Chawla (NYU), David Futran (Queens College), Rosemarie Liriano (Lehman College), Keri Mallari (Lehman College)*, Francois Mertil (City Tech), Ilana Radinsky (Yeshiva University), Rivka Schuster (Touro College) and Thoa Ta (St. John's University).

**Effects of Drug War Violence on Risk Perception, Policy Preferences, and Pro-Social Behavior: Evidence from an Online Experiment in Mexico**. *Fernando Plascencia (Cornell)*.

**STEM and Teens: An Algorithm Bias on a Social Media**. *Grazia Cecere (Telecom Ecole de Management)*, Fabrice Le Guel (Université Paris Sud), Mattieu Manant (Université Paris Sud) and Clara Jean (Université Paris Sud).

**Improving Learning Habits Via Digital Interventions: A Field Experiment of Social Norms**. *Gang Wang (University of Delaware)*, Zhuoxin Li (Boston College) and Harry Jiannan Wang (University of Delaware).

**Social Media Sharing and Online News Consumption**. Sinan Aral (MIT) and *Michael Zhao (MIT)*.

**MOOClets: A Framework for Dynamic Experimentation and Personalization**. *Joseph Jay Williams (Harvard)*, Anna N. Rafferty (Carleton College), Samuel Maldonado (San Jose State University), Andrew Ang (Harvard), Dustin Tingley (Harvard) and Juho Kim (KAIST).

**The Sharing Economy and Housing Affordability: Evidence from Airbnb**. *Kyle Barron (MIT)*, Edward Kung (UCLA) and Davide Proserpio (USC).

**Communicating Warmth in Distributive Negotiations is Ineffective and Under Appreciated**. Martha Jeong (Harvard), Julia Minson (Harvard), *Michael Yeomans (Harvard)* and Francesca Gino (Harvard).

**The Impact of APIs on Firm Performance**. *Seth G. Benzell (MIT)*, Guillermo Lagarda (Boston University) Marshall Van Alstyne (Boston University).

**Detecting Lies: Comparing the Performance of Humans and Computers Alone and Together**. *Sebastian Deri (Nokia Bell Labs and Cornell)*, Eva Sharma (Nokia Bell Labs and Georgia Tech), Jeremie Rappaz (Nokia Bell Labs and EPFL), Miriam Redi (Cornell), Luca Aiello (Cornell) and Daniele Quercia (Cornell).

**Marrying Causal Inference and Machine-Learning: Encouraging Meaningful Interactions**. *Akos Lada (Facebook)*, Hsiao-Ping Tseng (Facebook) and Wei Wang (Facebook).

**Modeling Dynamic Trajectory Performance of App Notification Ads: Field Experimentation on Mobile App Platform**. *Siliang Tong (Temple)*, Xueming Luo (Temple) and Xiaoyi Wang (Zhejiang University).

**Generating Explanations Using Crowdsourcing and Bandits for Dynamic Experiments**. *Joseph Jay Williams (Harvard)*.

**Retargeting as a Double-Edged Sword: Field Experimentation and Machine Learning**. Xueming Luo (Temple), Takeshi Moriguchi (Waseda University) and *Jing Li (Hong Kong Polytechnic University)*.

**A Cost-Efficient Platform for Large Scale Randomized Control Trials in Online Advertising**. Jason Shaw (Integral Ad Science), Katia Eliseeva (Integral Ad Science), Ana Calabrese (Integral Ad Science), Maksim Zakharov (Grid Dynamics), Mattia Fumagalli (Integral Ad Science), Mandeep Badwal (Integral Ad Science) and *Kiril Tsemekhman (Integral Ad Science)*.

**The Adverse Effect of "Likes" and Friends' "Likes" on Facebook Ads**. Ashish Agarwal (UT Austin), *Shun-Yang Lee (UConn)* and Andrew Whinston (UT Austin).

**Measuring Home Quality with Images: Aesthetic Spillovers and Depreciation from Foreclosures**. Edward L. Glaeser (Harvard) and *Nikhil Naik (Harvard and MIT)*.

**Analyzing the Impact of Virtual Crowdedness on User Contribution with Citizen Data in Mobile Location Analytics Platforms: Prosocial Behavior or Bystander Effect?** Tae Hun Kim (Michigan State), Chenhui Guo (Michigan State), *Anjana Susarla (Michigan State)* and Vallabh Sambamurthy (Michigan State).

**Nowcasting the Local Economy: Using Yelp Data to Measure Economic Activity at Scale**. Edward L. Glaeser (Harvard), *Hyunjin Kim (Harvard)* and Michael Luca (Harvard).

**nodeGame 4.0: Online Real-Time Synchronous Experiments**. *Stefano Balietti (Northeastern)*.

**Democratizing Online Controlled Experiments at Booking.com**. *Raphael Lopez Kaufman (Booking.com)*, Jegar Pitchforth (Booking.com) and Lukas Vermeer (Booking.com).

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