

# CONFERENCE ON DIGITAL EXPERIMENTATION

Hosted by the MIT Initiative on the Digital Economy

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## Friday, October 14th

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

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

Session Chair: *Erik Brynjolfsson (MIT)*

**Estimation and Evaluation of Optimal Policies.** *Susan Athey (Stanford University)*

**Escaping from Government and Corporate Surveillance. Evidence from the MIT Digital Currency Experiment.** *Catherine Tucker (MIT)*

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

**10:30am** Parallel Sessions (6th Floor)

**A: Education (DR 3+4)**

**B: Methods I (DR 5)**

Session Chair: Catherine Tucker

Session Chair: Susan Athey

**Big Bad Data: The Case of For-Profit College Advertising.** *Avinash Gannamaneni (MIT), Avi Goldfarb (University of Toronto), and Catherine Tucker (MIT).*

**Multi-armed Contextual Bandits with Forests.** *Susan Athey (Stanford University), Wenfei Du (Stanford University), and Guido Imbens (Stanford University).*

**Remedying Education with Personalized Learning: Evidence from Randomized Field Experiment in India.** *Anuj Kumar (University of Florida) and Amit Mehra (University of Texas Dallas).*

**Efficient Discovery of Heterogeneous Treatment Effects in Randomized Experiments via Anomalous Pattern Detection.** *Edward McFowland III (University of Minnesota), Sriram Somanchi (University of Notre Dame), and Daniel B. Neill (Carnegie Mellon University).*

**Private vs. Public Ranking in Online Communities: A Randomized Field Experiment on MOOCs.** *Xitong Li (HEC Paris) and Jiayin Zhang (Tsinghua University).*

**Concise Summarization of Heterogeneous Treatment Effect Using Total Variation Regularized Regression.** *Alex Deng (Microsoft), Pengchuan Zhang (California Institute of Technology), Shouyuan Chen (Microsoft), Jiannan Lu (Microsoft), and Dong Woo Kim (Microsoft).*

**Curiosity Killed the Cat, but Makes Crowdsourcing Better.** *Edith Law (University of Waterloo), Ming Yin (Harvard University), Joslin Goh (University of Waterloo), Kevin Chen (University of Waterloo), Michael Terry (University of Waterloo), and Krzysztof Z. Gajos (Harvard University).*

**Two Stage: A Simple Framework for Finding CATEs.** *George Berry (Facebook and Cornell University), Ana Franco (Facebook and Stanford University), Alexander Peysakhovich (Facebook), and Sean J. Taylor (Facebook).*

**Planning Prompts Increase Course Completion in MOOCs.** *Michael Yeomans (Harvard University) and Justin Reich (MIT).*

**Combining Observational and Experimental Data to Find Heterogeneous Treatment Effects.** *Alexander Peysakhovich (Facebook) and Akos Lada (Facebook).*

**11:45am** Lunch (7th Floor)



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## Friday, October 14th

12:45pm Plenary Session 2 (7th Floor)

Session Chair: *Sinan Aral (MIT)*

**When Randomized Experiments are Plentiful.** *Dean Eckles (MIT)*

**Insights from Behavioral Economics for Consumer Finance Markets.** *Antoinette Schoar (MIT)*

2:00pm Coffee Break (6th Floor)

2:30pm Parallel Sessions (6th Floor)

C: eCommerce (DR 3+4)

D: Marketing I (DR 5)

Session Chair: **Antoinette Schoar**

Session Chair: **Dean Eckles**

**Measuring the Value of Recommendation Links on Product Demand.** *Anuj Kumar (University of Florida)* and *Kartik Hosanagar (University of Pennsylvania)*.

**Omnichannel Marketing: Digital Field Experiments.** *Xueming Luo (Temple University)*, *Yuchi Zhang (Santa Clara University)*, and *Fue Zeng (Wuhan University)*.

**Improving Online Retail Margins by Increasing Search Frictions.** *Donald Ngwe (Harvard University)* and *Thales Teixeira (Harvard University)*.

**Bridging the Gap: Connecting Large-scale Data from Digital Experimentation to the Physical World.** *Reka Daniel-Weiner (Dstillery)*, *Claudia Perlich (Dstillery)*, and *Ori Stitelman (Dstillery)*.

**Ecommerce Platforms and International Trade: A Randomized Field Experiment on eBay.** *Xiang Hui (MIT)*.

**The Effect of Product Placement on Shopping Behavior at the Point of Purchase: Evidence from Randomized Experiment Using Video Tracking in a Physical Book Store.** *Qiwei Han (Carnegie Mellon University and Instituto Superior Tecnico)*, *Pedro Ferreira (Carnegie Mellon University)*, and *Joao Paulo Costeira (Instituto Superior Tecnico)*.

**The Effect of TV Content on Piracy: Evidence From a Household Level Randomized Experiment.** *Miguel Godinho de Matos (Catolica-Lisbon)*, *Pedro Ferreira (Carnegie Mellon University)*, and *Michael D. Smith (Carnegie Mellon University)*.

**The Online Display Ad Effectiveness Funnel & Carryover: A Meta-study of Predicted Ghost Ad Experiments.** *Garrett Johnson (University of Rochester)*, *Randall A. Lewis (Netflix)*, and *Elmar I. Nubbemeyer (Google)*.

**Freemium Pricing: A Stylized Framework and Evidence from a Large-scale Field Experiment.** *Julian Runge (Humboldt University)*, *Joerg Claussen (Ludwig-Maximilians-University)*, and *Stefan Wagner (European School of Management and Technology)*.

**Saving "For Your Baby": Framing and Priming in Print-at-Home Coupons.** *Jura Liaukonyte (Cornell University)*, *Matthew McGranaghan (Cornell University)*, and *Kenneth Wilbur (UC San Diego)*.

3:45pm Coffee Break (7th Floor)

4:15pm Fireside Panel: The Tyranny of Algorithms? (7th Floor)

5:45pm Reception (7th Floor)



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## Saturday, October 15th

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

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

Session Chair: *Sandy Pentland (MIT)*

**Machine Learning, Causal Inference, and Estimating Heterogeneous Treatment Effects.** *Jas Sekhon (UC Berkeley)*

**Machine Learning Choices.** *Johan Ugander (Stanford University)*

10:30am Coffee Break (6th Floor)

10:45am Parallel Sessions (6th Floor)

**E: Social Networks (DR 3+4)**

**F: Methods II (DR 5)**

Session Chair: **Johan Ugander**

Session Chair: **Jas Sekhon**

**Referral Policies for Optimal Growth: a Randomized Experiment.** *Rodrigo Belo (Erasmus University)* and *Ting Li (Erasmus University)*.

**Split-door Criterion: Automatic Search for Natural Experiments.** *Amit Sharma (Microsoft)*, *Jake M. Hofman (Microsoft)*, and *Duncan J. Watts (Microsoft)*.

**The Impact of Referral Coupons on Customer Behavior and Firm Revenues: Evidence from Field Experiments.** *Raghuram Iyengar (University of Pennsylvania)* and *Young-Hoon Park (Cornell University)*.

**Bayesian Optimization for Large-scale Online Field Experiments.** *Eytan Bakshy (Facebook)*, *Konstantin Kashin (Facebook)*, and *Benjamin Letham (Facebook)*.

**Altruism Pays! Towards Optimal Call-to-Action for Online Referral: A Randomized Field Experiment.** *JaeHwuen Jung (University of Minnesota)*, *Ravi Bapna (University of Minnesota)*, *Joseph M. Golden (Collage.com)*, and *Tianshu Sun (University of Southern California)*.

**Representativity and Networked Interference in Rural Field Experiments: A Large-scale RCT in Rural Mexico.** *Alejandro Noriega (MIT)* and *Alex Pentland (MIT)*.

**What's a Hot-Vote Worth in Online Dating? Evidence from a Randomized Field Experiment.** *Ravi Bapna (University of Minnesota)*, *Jui Ramaprasad (McGill University)*, and *Akhmed Umyarov (University of Minnesota)*.

**Limiting Bias from Test-control Interference in Online Marketplace Experiments.** *Dave Holtz (MIT)*.

**Social Influence in Experience vs. Search Goods.** *Shan Huang (MIT)*, *Sinan Aral (MIT)*, *Yu Hu (MIT)*, and *Erik Brynjolfsson (MIT)*.

**Rebar: Predicting Outcomes to Reinforce Online Experiments.** *Adam C. Sales (University of Texas)*, *Neil T. Heffernan (Worcester Polytechnic Institute)*, and *Ben B. Hansen (University of Michigan)*.

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



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Saturday, October 15th

1:30pm Parallel Sessions (6th Floor)

G: Engagement & UGC (DR 3+4)

H: Observational Methods & Natural Experiments (DR 5)

Session Chair: Ron Kohavi

Session Chair: Edo Airoidi

**Stimulating User-generated Content via Performance Feedback: A Randomized Mobile Field Experiment.** *Yili (Kevin) Hong (Arizona State University), Bin Gu (Arizona State University), Gordon Burtch (University of Minnesota), Ni Huang (Temple University), and Chen Liang (Arizona State University).*

**The Cost of Solidarity: A Quasi Experiment on the Effect of Joining a Strike on Community Participation in the 2015 reddit Blackout.** *J. Nathan Matias (MIT).*

**The Dark Side of User Participation - The Effect of Calls to Action on Trust and Information Revelation.** *Naama Ilany-Tzur (Tel Aviv University), Lior Zalmanson (NYU), and Gal Oestreicher-Singer (Tel Aviv University).*

**Necessary and Probably Sufficient Test for Instrumental Variables.** *Amit Sharma (Microsoft).*

**Fostering Public Good Contributions with Symbolic Awards: A Large-scale Field Experiment at Wikipedia.** *Jana Gallus (UCLA).*

**Controlling for Latent Homophily in Social Networks through Inferring Latent Locations.** *Cosma Rohilla Shalizi (Carnegie Mellon University and the Santa Fe Institute) and Edward McFowland III (University of Minnesota).*

**More Than the Sum of Their Parts: Testing Multiple Modes of Contact in a Twitter Field Experiment.** *Kevin Collins (Analyst Institute), Alexander Coppock (Yale University), and Andrew Guess (NYU).*

**The Welfare Impact of Consumer Reviews: A Case Study of the Hotel Industry.** *Gregory Lewis (Microsoft and NBER) and Georgios Zervas (Boston University).*

**Modeling User Engagement in Mobile Content Consumption with Tapstream Data and Field Experiment.** *Yingjie Zhang (Carnegie Mellon University), Beibei Li (Carnegie Mellon University), Xueming Luo (Temple University), and Xiaoyi Wang (Zhejiang University).*

**Social Media and Political Donations: Evidence from Twitter.** *Maria Petrova (Universitat Pompeu Fabra), Ananya Sen (Toulouse School of Economics), and Pinar Yildirim (University of Pennsylvania).*

2:45pm Coffee Break (6th Floor)



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Saturday, October 15th

3:15pm Parallel Sessions (6th Floor)

I: Innovation, Employment & Mobile Phones (DR 3+4)

J: Marketing II (DR 5)

Session Chair: Johan Ugander

Session Chair: Dean Eckles

**Mobile Targeting by Time of Day: Field Experiments.** *Xueming Luo (Temple University), Bradley Baker (Temple University), Zheng Fang (Sichuan University), Chee Wei Phang (Fudan University), and Kristina Wittkowski (Aalto University).*

**The Benefit of Targeting for Measuring Returns on Advertising.** *Ron Berman (University of Pennsylvania) and Zach Winston (University of Pennsylvania).*

**The Market Structures for Innovation.** *Stefano Balietti (Northeastern University and Harvard University) and Christopher Riedl (Northeastern University and Harvard University).*

**Targeted Promotions and Cross-category Spillover Effects.** *Nathan Fong (Temple University), Yuchi Zhang (Santa Clara University), Xueming Luo (Temple University), and Xiaoyi Wang (Zhejiang University).*

**Startups, Networks and Inter-firm Learning: A Field Experiment.** *Aaron Chatterji (Duke University), Solene Delecourt (Stanford University), Sharique Hasan (Stanford University), and Rembrand Koning (Harvard University).*

**Measuring Consumer Sensitivity to Audio Advertising: A Field Experiment on Pandora Internet Radio.** *Nickolai Riabov (Brown University) and David Reiley (UC Berkeley and Pandora Media).*

**Mobile Generosity: On the Use of Mobile Devices and Monetary Subsidies in Charitable Giving.** *Dongwon Lee (University of Maryland), Anandasivam Gopal (University of Maryland), Dokyun Lee (Carnegie Mellon University), and Jay Chung (Slidejoy Inc.).*

**Binge Yourself Out The Impact of Binge Watching on TV Viewership and on the Subscription of TV Products: Evidence from a Field Randomized Experiment.** *Miguel Godinho de Matos (Catolica-Lisbon) and Pedro Ferreira (Carnegie Mellon University).*

**Flight to Unknown Quality?: Removing Productivity Information Leads to Employer Bargain Hunting.** *Moshe Barach (Georgetown University) and John Horton (NYU).*

4:30pm Coffee Break (7th Floor)

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

Session Chair: *Erik Brynjolfsson (MIT)*

**Optimal Design of Experiments on Social Networks.** *Edo Airoidi (Harvard University)*

**Trustworthy Results: Pitfalls in Online Controlled Experiments.** *Ron Kohavi (Microsoft)*



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Saturday, October 15th

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

**A/B Testing in a Changing World.** *David Walsh (Stanford University and Optimizely Inc.) and Leo Pekelis (Stanford University and Optimizely Inc.).*

**Causal Effects of Professional Networking on Labor Mobility.** *Panos Toulis (University of Chicago), Alexander Volfovsky (Duke University), and Edoardo Airoldi (Harvard University).*

**Proposing a New Approach to Uplift Modeling: The Balanced Reflective Uplift Modeling.** *Atef Shaar (Universite Paris-Saclay), Hajer Kefi (National University of Singapore and Paris School of Business), Talel Abdesslem (Universite Paris-Saclay and National University of Singapore), and Olivier Segard (Paris School of Business).*

**Interacting User Generated Content Technologies: How Q&As Affect Ratings & Reviews.** *Shrabastee Banerjee (Boston University), Chrysanthos Dellarocas (Boston University), and Georgios Zervas (Boston University).*

**The Collaboration and Communication Networks within the Crowd.** *Mary L. Gray (Microsoft), Siddharth Suri (Microsoft), Ming Yin (Harvard University), Jennifer Wortman Vaughan (Microsoft), Syed Shoaib Ali (Independent), and Deepti Kulkarni (Peepaldesign).*

**Spatial Uncertainty, Satisficing Behavior, and Optimal Decision Making in Complex Search Landscapes.** *Brennan Klein (Northeastern University) and Christoph Riedl (Northeastern University and Harvard University).*

**The ASSISTments TestBed and the Assessment of Learning Infrastructure: The Evolution of Educational Research at Scale.** *Korinn S. Ostrow (Worcester Polytechnic Institute) and Neil T. Heffernan (Worcester Polytechnic Institute).*

**Using Big and Small Data to Personalize the News Feed for Over 1 Billion People.** *Alexander Peysakhovich (Facebook), Lars Backstrom (Facebook), Lauren Scissors (Facebook), Lu Wang (Facebook), Ta Viroth Chiraphadhanakul (Facebook), Michael Bailey (Facebook), and James Li (Facebook).*

**The Power of Culture: Cultural Variables are the Best Country-level Predictors of How Individuals Interact on Social Media.** *Akos Lada (Facebook) and Alexander Peysakhovich (Facebook).*

**Talent, Circumstances, or Luck? A Experimental Approach to the Study of Beliefs about Inequality and Fairness Perception.** *Mauricio Bucca (Cornell University) and Mario Molina (Cornell University).*

**Airbrb: Predicting Loyalty.** *Kaciny Calixte (SUNY Old Westbury), Jacqueline Curran (Manhattan College), Louise Y. S. Lai (NYU), and Erica Ram (Adelphi University).*

**Retargeting Upper and Lower Purchase Funnel.** *Takeshi Moriguchi (Waseda University), Guiyang Xiong (University of Massachusetts Boston), and Xueming Luo (Temple University).*

**Fare Share: Flow and Efficiency in NYC's Taxi System.** *Abraham Neuwirth (Touro College), Fatima Chebchoub (NYC College of Technology), Jai Punjwani (Adelphi University), and Marieme Toure (NYC College of Technology).*

**Moral Machine: Global Survey of Autonomous Vehicle Ethics using the Trolley Problem Paradigm.** *Edmond Awad (MIT), Sohan Dsouza (MIT), Pai-Ju Chang (MIT), Jean-Francois Bonnefon (Toulouse School of Economics), Azim Shariff (UC Irvine), and Iyad Rahwan (MIT).*

**ASSISTments Dataset for a Data Mining Competition to Improve Personalized Learning.** *Thanaporn Patikorn (Worcester Polytechnic Institute), Douglas Selent (Worcester Polytechnic Institute), Neil Heffernan (Worcester Polytechnic Institute), Biao Yin (Worcester Polytechnic Institute), and Anthony Botelho (Worcester Polytechnic Institute).*

**Detecting Anomalous Patterns of Care using Health Insurance Claims.** *Sriram Somanchi (University of Notre Dame), Edward McFowland III (University of Minnesota), and Daniel B. Neill (Carnegie Mellon University).*

**Changing Circumstances and the Disruption of Habits in a News Readership.** *Christos Nicolaidis (MIT), Dean Eckles (MIT), and Sinan Aral (MIT).*



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