

# Dean Eckles

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*Research Interests:* Social networks, peer effects, causal inference, applied statistics, marketing, field experiments, persuasion, computer-mediated communication, human–computer interaction

## Education

### **Stanford University**

2008 – 2012 PhD    Communication  
2010 – 2011 MS    Statistics  
2006 – 2007 MS    Symbolic Systems  
2002 – 2006 BA    Philosophy, with Honors  
2002 – 2006 BS    Symbolic Systems

## Employment

### **Massachusetts Institute of Technology**

2024 – *William F. Pounds (Associate) Professor of Management*  
2022 – *Associate Professor (with Tenure) of Marketing, Sloan School of Management*  
2023 – *Associate Director & Core Faculty, Institute for Data, Systems & Society, Schwarzman College of Computing*  
2017 – 2023 *Affiliated Faculty, Institute for Data, Systems & Society, Schwarzman College of Computing*  
2020 – 2023 *Mitsubishi Career Development (Associate) Professor*  
2019 – 2022 *Associate Professor (without Tenure) of Marketing, Sloan School of Management*  
2017 – 2020 *KDD Career Development (Assistant/Associate) Professor in Communications and Technology*  
2015 – 2019 *Assistant Professor of Marketing, Sloan School of Management*

### **Facebook**

2012 – 2015 *Scientist*  
2010 – 2012 *Intern, Consultant & Researcher-in-Residence*

### **Nokia**

2007 – 2009 *Research Scientist*

## Working papers and papers under review

† Authors in alphabetical author or designated equal contribution. \* Student, intern, and mentored postdoc coauthors.

Tendencies toward triadic closure: Field-experimental evidence.

Mosleh, M., Eckles, D., & Rand, D.

Working paper.

Reducing misinformation sharing at scale using digital accuracy prompt ads.

Lin, H., † Garro, H., † Wernerfelt, N., Shore, J., Hughes, A., Deisenroth, D., Barr, N., Berinsky, A., Eckles, D., Pennycook, G. & Rand, D.G.

Working paper.

Native advertising and the credibility of news publishers.

Revel, M.,\* Tohidi, A.,\* Eckles, D., Berinsky, A., & Jadbabaie, A.  
Working paper.

Scalable bundle recommendations: A large scale field experiment.

Kumar, M.,\* Eckles, D., & Aral, S.  
Revisions under review at *Management Science*.

Promoting physical activity through prosocial incentives on mobile platforms.

Yuan, Y.,\* Nicolaidis, C., Pentland, A., & Eckles, D.  
Working paper.

Algorithmic pricing and consumer sensitivity to price variability.

Aparicio, D.,† Eckles, D.,† & Kumar, M.†\*  
Working paper.

Promoting engagement with social fact-checks online.

Mosleh, M., Martel, C.,\* Eckles, D., & Rand, D.  
Working paper.

Habits in consumer purchases: Evidence from store closures.

Tohidi, A.,\* Eckles, D., & Jadbabaie, A.  
Working paper.

The network structure of unequal diffusion.

Jahani, E.,\* Eckles, D., Pentland, A.  
Working paper.

### **Refereed journal articles**

Noise-induced randomization in regression discontinuity designs.

Eckles, D.,† Ignatiadis, N.,† Wager, S.,† & Wu, H.†  
Forthcoming at *Biometrika*.

Long ties accelerate noisy threshold-based contagions.

Eckles, D.,† Mossel, E.,† Rahimian, M. A.,†\* & Sen, S.† (2024)  
*Nature Human Behaviour*.

Targeting for long-term outcomes.

Yang, J.,\* Eckles, D., Dhillon, P., & Aral, S. (2024)  
*Management Science*.

Long ties, disruptive life events and economic prosperity.

Jahani, E.,\* Fraiberger, S. P., Bailey, M., & Eckles, D. (2023)  
*Proceedings of the National Academy of Sciences*.  
(Previously titled “Origins and consequences of long ties in social networks”.)

Providing normative information increases intentions to accept a COVID-19 vaccine.

Moehring, A.,\* Collis, A.,† Garimella, K.,†\* Rahimian, M.A.,†\* Aral, S., & Eckles, D. (2023)  
*Nature Communications*.  
(Previously titled “Surfacing norms to increase vaccine acceptance”.)

Seeding with costly network information.

Eckles, D.,<sup>†</sup> Esfandiari, H.,<sup>†</sup> Mossel, E.,<sup>†</sup> & Rahimian, M. A.<sup>†\*</sup> (2022)  
*Operations Research*.

Global survey on COVID-19 beliefs, behaviors, and norms.

Collis, A.,<sup>†\*</sup> Garimella, K.,<sup>†\*</sup> Moehring, A.,<sup>†\*</sup> Rahimian, M.A.,<sup>†\*</sup> Babalola, S., Gobat, N., Shattuck, D., Stolow, J., Eckles, D., & Aral, S. (2022)  
*Nature Human Behaviour*.

Evaluating stochastic seeding strategies in networks.

Chin, A.,<sup>†\*</sup> Eckles, D.,<sup>†</sup> & Ugander, J.<sup>†</sup> (2021)  
*Management Science*.

Shared partisanship dramatically increases social tie formation in a Twitter field experiment.

Mosleh, M., Martel, C.,<sup>\*</sup> Eckles, D., & Rand, D. G. (2021)  
*Proceedings of the National Academy of Sciences*, 118(7).

Shifting attention to accuracy can reduce misinformation online.

Pennycook, G.,<sup>†</sup> Epstein, Z.,<sup>†\*</sup> Mosleh, M.,<sup>†</sup> Arechar, A. A., Eckles, D., & Rand, D. G. (2021)  
*Nature*.  
(Previously titled "Understanding and reducing the spread of misinformation online".)

Bias and high-dimensional adjustment in observational studies of peer effects.

Eckles, D., & Bakshy, E. (2021)  
*Journal of the American Statistical Association*, 116(534).

Enhancing and accelerating social science via automation: Challenges and opportunities.

Yarkoni, T., Eckles, D., Heathers, J., Levenstein, M., Smaldino, P., & Lane, J.I. (2021)  
*Harvard Data Science Review*.

Interdependence and the cost of uncoordinated responses to COVID-19.

Holtz, D.,<sup>†\*</sup> Zhao, M.,<sup>†\*</sup> Benzell, S.G., Cao, C.Y.,<sup>\*</sup> Rahimian, M.A.,<sup>\*</sup> Yang, J.,<sup>\*</sup> Allen, J.,<sup>\*</sup> Collis, A., Moehring, A.,<sup>\*</sup> Sowrirajan, T.,<sup>\*</sup> Ghosh, D., Zhang, Y.,<sup>\*</sup> Dhillon, P.S., Nicolaides, C., Eckles, D., & Aral, S. (2020)  
*Proceedings of the National Academy of Sciences*, 117(33).

Images and misinformation in political group messaging: Evidence from WhatsApp in India.

Garimella, K.,<sup>\*</sup> & Eckles, D. (2020)  
*Harvard Kennedy School Misinformation Review*.

Exact p-values for network interference.

Athey, S.,<sup>†</sup> Eckles, D.,<sup>†</sup> & Imbens, G. W.<sup>†</sup> (2018)  
*Journal of the American Statistical Association*, 113(521).

Design and analysis of experiments in networks: Reducing bias from interference.

Eckles, D.,<sup>†</sup> Karrer, B.,<sup>†</sup> & Ugander, J.<sup>†</sup> (2017)  
*Journal of Causal Inference*, 12(1).

Social influence and political mobilization: Further evidence from a randomized experiment in the 2012 U.S. Presidential Election.

Jones, J. J., Bond, R. M., Bakshy, E., Eckles, D., & Fowler, J. H. (2017)  
*PLoS ONE* 12(4).

Estimating peer effects in networks with peer encouragement designs.

Eckles, D., Kizilcec, R.F.,\* & Bakshy, E. (2016)  
*Proceedings of the National Academy of Sciences*, 113(27).

Bootstrapping data arrays of arbitrary order.

Owen, A. B., & Eckles, D. (2012)  
*Annals of Applied Statistics*, 6(3).

Heterogeneity in the effects of online persuasion.

Kaptein, M., & Eckles, D. (2012)  
*Journal of Interactive Marketing*, 26(3).

Requirements for mobile photoware.

Ames, M.,† Eckles, D.,† Naaman, M.,† Spasojevic, M.,† & Van House, N.† (2010)  
*Personal and Ubiquitous Computing*, 14(2).

### **Articles in refereed computer science conference proceedings**

(Conference proceedings are primary, archival publication venues in computer science and related areas.)

Effects of algorithmic trend promotion: Evidence from coordinated campaigns in Twitter's Trending Topics.

Schlessinger, J., Garimella, K., Jakesch, M., & Eckles, D. (2023)  
In: *ICWSM 2023: Proceedings of the International Conference on Web and Social Media*. AAAI.

Influence of repetition through limited recall.

Sassine, J.,\* Rahimian, M.A.,\* & Eckles, D. (2022)  
In: *ICWSM 2022: Proceedings of the International Conference on Web and Social Media*. AAAI.

Trend alert: How a cross-platform organization manipulated Twitter trends in the Indian general election.

Jakesch, M.,\* Garimella, K.,\* Eckles, D., & Naaman, M. (2021)  
In: *CSCW 2021: Proceedings of the ACM on Human-Computer Interaction (Computer-Support Cooperative Work and Social Computing)*. ACM.

Perverse consequences of debunking in a Twitter field experiment: Being corrected for posting false news increases subsequent sharing of low quality, partisan, and toxic content.

Mosleh, M., Martel, C.,\* Eckles, D., & Rand, D. G. (2021)  
In: *CHI 2021: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM.

Learning causal effects from many randomized experiments using regularized instrumental variables.

Peysakhovich, A., & Eckles, D. (2018)  
In: *WWW 2018: Proceedings of the International Conference on the World Wide Web*. IW3C2 / ACM.

Social influence and reciprocity in online gift giving.

Kizilcec, R. F.,\* Bakshy, E., Eckles, D., & Burke, M. (2018)  
In: *CHI 2018: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM.

Designing and deploying online field experiments.

Bakshy, E., Eckles, D., & Bernstein, M. (2014)  
In: *WWW 2014: Proceedings of the International Conference on the World Wide Web*. ACM.

Rumor cascades.

Friggeri, A., Adamic, L., Eckles, D., & Cheng, J. (2014)

In: *ICWSM 2014: Proceedings of the International Conference on Weblogs and Social Media*. AAAI.

Uncertainty in online experiments with dependent data: An evaluation of bootstrap methods.

Bakshy, E., & Eckles, D. (2013)

In: *KDD 2013: Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*. ACM.

Social influence in social advertising: Evidence from field experiments.

Bakshy, E.<sup>†</sup>, Eckles, D.<sup>†</sup>, Yan, R., & Rosenn, I. (2012)

In: *EC 2012: Proceedings of the ACM Conference on Electronic Commerce*. ACM.

Selecting effective means to any end: Futures and ethics of persuasion profiling.

Kaptein, M. & Eckles, D. (2010)

In: *Proceedings of Persuasive Technology 2010*, Lecture Notes in Computer Science. Springer.

Social responses in mobile messaging: Influence strategies, self-disclosure, and source orientation.

Eckles, D., Wightman, D., Carlson, C., Thamrongtattararit, A., Bastea-Forte, M., & Fogg, B. J. (2009)

In: *CHI 2009: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM.

Over-exposed? Privacy patterns and considerations in online and mobile photo sharing.

Ahern, S.,<sup>†</sup> Eckles, D.,<sup>†</sup> Good, N. S.,<sup>†</sup> King, S.,<sup>†</sup> Naaman, M.,<sup>†</sup> & Nair, R.<sup>†</sup> (2007)

In: *CHI 2007: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM.

The behavior chain for online participation: How successful Web services structure persuasion.

Fogg, B. J. & Eckles, D. (2007)

In: *Proceedings of Persuasive Technology 2007*, Lecture Notes in Computer Science. Springer.

### **Select work in progress**

Social influence and habits: Evidence from a field experiment in exercise.

Eckles, D.,<sup>†</sup> & Nicolaidis, C.<sup>†</sup>

Privacy-induced experimentation and private causal inference.

Yao, L.,\* Svanberg, M.,\* Holohan, N., Greenewald, K., Arbour, A., & Eckles, D.

### **Edited books and chapters**

Spillover effects in experimental data.

Aronow, P. M.,<sup>†</sup> Eckles, D.,<sup>†</sup> Samii, C.,<sup>†</sup> Zonszein, S.<sup>†</sup> (2021)

In: *Cambridge Handbook of Advances in Experimental Political Science*, Druckman, J. N., & Green, D. P., ed. Cambridge University Press.

Randomized experiments to detect and estimate social influence.

Taylor, S.J., & Eckles, D. (2018)

In: *Spreading Dynamics in Social Systems*, Lehmann, S., & Ahn, Y. Y., ed. Springer Nature.

Informing the design of mobile health messaging services with user research.  
Eckles, D. (2009)  
In: *Texting 4 Health*, B. J. Fogg & R. Adler, ed. Stanford Captology Media.

*Mobile Persuasion: 20 Perspectives on the Future of Behavior Change*  
Fogg, B. J. & Eckles, D., ed. (2007)  
Stanford Captology Media.

### **Other articles in journals**

On loss functions and bias–variance trade-offs in causal estimation and decisions.  
(Comment on Fernandez–Loria & Provost.)  
Eckles, D.  
*INFORMS Journal on Data Science*.

Protecting elections from social media manipulation.  
Aral, S.,<sup>†</sup> & Eckles, D.<sup>†</sup> (2019)  
*Science*, 365(6456).

Discussion of “Optimal treatment allocations in space and time for on-line control of an emerging infectious disease”.  
(Comment on Laber et al.)  
Eckles, D.,<sup>†</sup> Kaptein, M.<sup>†</sup> (2018)  
*Journal of the Royal Statistical Society: Series C (Applied Statistics)*, 67(4), 743-789.

Field studies of psychologically targeted ads face threats to internal validity.  
(Comment on Matz et al.)  
Eckles, D.,<sup>†</sup> Gordon, B. R.,<sup>†</sup> Johnson, G. A.<sup>†</sup> (2018)  
*Proceedings of the National Academy of Sciences*, 115(23).

### **Other reports**

Algorithmic transparency and assessing effects of algorithmic ranking.  
Eckles, D. (2021)  
Written testimony for the US Senate Subcommittee on Communications, Media, and Broadband hearing on “Disrupting Dangerous Algorithms: Addressing the Harms of Persuasive Technology”.

Thompson sampling with the online bootstrap.  
Eckles, D.,<sup>†</sup> & Kaptein, M.<sup>†</sup> (2014)

### **Theses**

*Identifying Peer Effects in Online Communication Technologies*.  
Doctoral dissertation, Stanford University (2012).  
Granted the Nathan Maccoby Outstanding Dissertation Award.

*Mobile Persuasive Technology and Influencing Self-Disclosure Behavior*.  
Master’s thesis, Stanford University (2007).

*Radical Interpretability and Parasitism: Justifying the Principle of Charity.*  
Honors thesis, Stanford University (2006).

### **Magazine and newspaper articles**

Why public health messaging should emphasize vaccine acceptance, not hesitancy.  
Aral, S.,<sup>†</sup> & Eckles, D.<sup>†</sup> (2021, February)  
*Los Angeles Times*.

Envisioning persuasion profiles: Challenges for public policy and ethical practice.  
Kaptein, M., Eckles, D., & Davis, J. (2011)  
*interactions*, 18.

### **Selected refereed extended abstracts and workshop papers**

Social influence, habits, and disrupted performance environments.  
Eckles, D., Nicolaides, C., Aral, S. (2017)  
In: *Advances in Consumer Research abstracts*. Association for Consumer Research.

Mobile user experience research: Challenges, methods & tools.  
Nakhimovsky, Y., Eckles, D., & Riegelsberger, J. (2009)  
In: *CHI '09 extended abstracts on Human factors in computing systems*. ACM.

Auditory priming for upcoming events.  
Sohn, T., Takayama, L., Eckles, D., & Ballagas, R. (2009)  
In: *CHI '09 extended abstracts on Human factors in computing systems*. ACM.

Photos for information: A field study of cameraphone computer vision interactions in tourism.  
Cuellar, G.,\* Eckles, D., & Spasojevic, M. (2008)  
In: *CHI '08 extended abstracts on Human factors in computing systems*. ACM.

Zonetag: Designing context-aware mobile media capture to increase participation.  
Ahern, S.,<sup>†</sup> Davis, M.,<sup>†</sup> Eckles, D.,<sup>†</sup> King, S.,<sup>†</sup> Naaman, M.,<sup>†</sup> Nair, R.,<sup>†</sup> Spasojevic, M.,<sup>†</sup> & Yang, J. H. I.<sup>†</sup>  
(2006)  
In: *Adjunct Proceedings of Ubicomp, Workshop on Pervasive Image Capture and Sharing*.

### **Software releases**

PlanOut  
Open-source software framework for designing and deploying online randomized experiments. In Python and PHP.  
with Eytan Bakshy and Michael Bernstein.  
<https://github.com/facebookarchive/planout>

icsw: Inverse compliance score weighting  
Tools to estimate average treatment effects with an instrumental variable by re-weighting observations using a model of compliance. In R.  
with Peter M. Aronow and Kyle Peyton  
<https://cran.r-project.org/web/packages/icsw/>

Multiway bootstrap

Statistical inference using data with multiway dependencies. In R.  
[https://github.com/deaneckles/multiway\\_bootstrap](https://github.com/deaneckles/multiway_bootstrap)

## **Patents**

Systems and methods for content presentation.

Tas, M.S., Kant, V., Marra, G.M., Eckles, D., & Dudin, Y.O.  
Facebook. Granted U.S. patent 10789258.

Network-aware product rollout in online social networks.

Marlow, C. A., Eckles, D., Karrer, B., Ugander, J., Backstrom, L. S., & Kleinberg, J.  
Facebook. Granted U.S. patent 9934514.

Determining user personality characteristics from social networking system communications and characteristics.

Nowak, M., & Eckles, D.  
Facebook. Granted U.S. patent US 8825764.

Method, apparatus and computer program product for providing gaze information.

Eckles, D.  
Nokia. Published U.S. patent application US 20100054526.

System and method for providing highly readable text on small mobile devices.

Fogg, B. J., Cuellar, G. S., & Eckles, D.  
Stanford University. Granted U.S. patent US 8458152.

## **Selected coverage in the press & books**

A group of moms on Facebook built an island of good-faith vaccine debate in a sea of misinformation.

Elizabeth Dwoskin, Will Oremus and Gerrit De Vynck.  
*Washington Post*. August 2021.

What magic teaches us about misinformation.

Tim Harford.  
*Financial Times*. May 2021.

Confronting disinformation spreaders on Twitter only makes it worse, MIT scientists say.

Matthew Gault.  
*Vice*. May 2021.

Researchers have figured out a way to stop people from sharing misinformation.

John Biggs.  
*Gizmodo*. March 2021.

'Hassle factor' and distrust shadow wide U.S. vaccine hesitancy.

Emma Court and Olivia Rockeman.  
*Bloomberg*. March 2021.



Better than nothing: A look at content moderation in 2020.

Gilad Edelman.

*Wired*. December 2020.

If states don't coordinate lockdown procedures immediately, our future is grim.

Sinan Aral.

*Los Angeles Times*. August 2020.

The Silicon Valley insider who says turn off your phone.

Ben Hoyle.

*The Times*. January 2020.

How will Russian manipulation affect the 2020 election? We still have no idea.

Patt Morrison.

*Los Angeles Times*. September 2019.

Are social media misinformation campaigns affecting elections? MIT researchers say there's a way to find out.

Martin Finucane.

*The Boston Globe*. August 2019.

There's a way to know if Russia threw the election to Trump.

Christian Caryl.

*The Washington Post*. January 2019.

Facebook explored unpicking personalities to target ads.

Rory Cellan-Jones.

*BBC News*. April 2018.

The scant science behind Cambridge Analytica's controversial marketing techniques.

Elizabeth Gibney.

*Nature*. March 2018.

Cambridge Analytica's 'mindf\*\*\* tool' could be totally useless.

Stephen Armstrong.

*Wired*. March, 2018.

It's time for a serious talk about the science of tech "addiction".

Robbie Gonzales.

*Wired*. February 2018.

*Chaos Monkeys: Obscene Fortune and Random Failure in Silicon Valley*.

Antonio Garcia Martinez (2016)

HarperCollins. Part III. New York Times Bestseller.

*Persuasion Profiling: How the Internet Knows What Makes You Tick*.

Maurits Kaptein (2015).

From the Dutch: *Digitale verleiding: Hoe beïnvloedingsprofielen de online marketing op z'n kop zetten*.

Business Contact.

How to respond when rumours start to spread on Facebook.

Helen Reynolds.

The Guardian. May 2014.

Facebook wants to know why you're sharing this bogus Obamacare story.

Dino Grandoni.

*Huffington Post*, May, 2014.

Invisible decider: The subtle persuader in your pocket.

Helen Knight.

*New Scientist*, (2680), April 2012.

*The Filter Bubble: What the Internet Is Hiding from You.*

Eli Pariser (2011).

Penguin Press. Chapters 4 & 5. New York Times Bestseller.

Welcome to the brave new world of persuasion profiling.

Eli Pariser.

*Wired*, May 2011.

Anti-social networks? We're just as cliquy online.

Laura Sydell.

*NPR All Things Considered*, February 2011.

Appland: How smartphones are transforming our lives.

Richard Fisher.

*New Scientist*, (2722), August 2009.

Text streaming service lets users read material as fast as they can.

Michael Bazeley.

*San Jose Mercury News*, May 2005. Syndicated in Knight Rider papers.

Reading phone text one word at a time.

Ina Fried and Michael Kanellos.

*CNET News*, July 2005.

### **Corrections to published work**

Corrigendum to: At what sample size do correlations stabilize?

Schönbrodt, F. D., & Perugini, M. (2013).

*Journal of Research in Personality*, 47(5), 609-612.

### **External funding and funded awards**

- |            |   |
|------------|---|
| 2022       | PI (with Manish Raghavan)<br><i>Synthetic Data and Randomness in Business and Societal Decision-Making</i> . Grant from IBM Research (\$210,000).                 |
| 2021, 2022 | PI (with David Rand)<br><i>Scalable Networked Interventions Against Misinformation</i> . Grant from US Air Force, subcontract via Lincoln Laboratory (\$200,000). |
| 2021       | PI  |

*Measuring the Impact of Social Influence on Belief in Misinformation*. Grant from Facebook (\$75,000).

2020 PI  
*Labor Market Activity and Online Social Networks*. Grant from the World Bank Group (\$100,000).

2020 PI  
*Privacy-Induced Experimentation*. Grant from IBM Research (\$150,000).

2020 PI (with Sinan Aral)  
*COVID-19 Global Beliefs, Behaviors, and Norms Survey*. Grant from Facebook (\$174,866).

2019 Awardee  
Amazon Research Award (\$80,000).

2019 PI (with Sinan Aral)  
*Digital Strategy at The Boston Globe*. Grant from Boston Globe Media (\$300,000).

### **Other awards and honors**

2020 Best Paper Award, INFORMS eBusiness Section.  
(For “Targeting for long-term outcomes”)

2019 Young Scholar, Marketing Science Institute.

### **Teaching**

#### **MIT**

2016 – Course creator & sole instructor  
*Marketing & Product Analytics*  
Elective for Master’s students in using analysis of quantitative data to inform, make, and automate marketing decisions. Features hands-on data analysis, Kaggle contests, and a group project building dashboards. (Previously titled *Marketing Analytics*).

2022 Course creator & sole instructor  
*Topics in Research Design & Causal Inference*  
Doctoral seminar with an emphasis on design-based perspectives and neglected topics in causal inference.

2016 – Course creator & sole instructor  
*Experimental Design & Analysis*  
Doctoral seminar in the design of experiments (especially field experiments in the social sciences), randomization inference, and counterfactual policy evaluation and learning.

#### **Udacity**

2013 – 2014 Course creator & instructor  
*Exploratory Data Analysis Using R* (with Moira Burke, Chris Saden & Solomon Messing)  
Designed curriculum for course on exploratory data analysis, including data visualization, basic statistical concepts, and high-dimensional exploration. Partially based on experience teaching Facebook’s internal DataCamp. <https://www.udacity.com/course/ud651>

#### **Stanford University**

- 2011 Course creator & sole instructor  
*Persuasion, Contagion & Compliance-Gaining in Online Media*  
Conceived and taught new course combining psychological and network levels of analysis to understand and engineer the spread of attitudes and behaviors through social media. Twice-weekly lectures. Creating assignments and exams. Advising term papers.
- 2009, 2011 Teaching assistant  
*Phenomenological Foundations of Cognition, Language & Computation*
- 2006 Teaching assistant  
*Persuading People Online and via Mobile Phones*

## **Professional service**

### Editorial service

- 2021 – Associate Editor, *Management Science*, Marketing department
- 2020 – Associate Editor, *Management Science*, Data Science (formerly Big Data Analytics) department
- 2020 – Ad hoc Associate Editor, *Management Science*, Behavioral Economics & Decision Analysis, Revenue Management & Market Analytics, Health Care Management, and Entrepreneurship & Innovation departments
- 2015, 2022 Invited Non-Member Editor, *Proceedings of the National Academy of Sciences*

### Reviewing at journals

- 2015 – *Proceedings of the National Academy of Sciences*
- 2018 – *Science*
- 2021 – *Nature*
- 2016 – *Marketing Science*
- 2017 – *Journal of the Royal Statistical Society*
- 2017 – *Journal of the American Statistical Association*
- 2019 – *Econometrica*
- 2020 – *American Economic Review*
- 2020 – *Journal of Econometrics*
- 2019 – *Quantitative Marketing and Economics*
- 2012 – *Management Science*
- 2020 – *Nature Communications*
- 2022 – *Journal of Marketing*
- 2017 – *Science Advances*
- 2020 *Journal of Urban Economics*
- 2015 – 2019 *Review of Economics and Statistics*
- 2017 – 2018 *Annals of Statistics*
- 2017 – 2018 *Journal of Marketing Research*
- 2016 – 2018 *Information Systems Research*
- 2017 *Review of Economic Studies*
- 2017 *American Economic Journal: Applied Economics*
- 2017 *Personality and Social Psychology Bulletin*
- 2017 *Journal of the Association for Consumer Research*
- 2017 *Sociological Methodology*

2015 *Epidemiologic Methods*  
2012 *Annals of Applied Statistics*

### Conference organizing and reviewing

2018 – Co-organizer, Conference on Digital Experimentation (CODE@MIT)  
2021 Program Committee, Quantitative Marketing and Economics (QME) Conference  
2020 Program Committee, International Conference on Computational Social Science (IC2S2)  
2019 Senior Program Committee, ACM Conference on Economics and Computation (EC)  
2013, 2017 Program Committee, ACM Conference on Economics and Computation (formerly Electronic Commerce in 2013) (EC)  
2007 – 2010 Program Committee, International Conference on Persuasive Technology

### Other organizing and service

2020 – 2022 Founding co-organizer, Virtual Quant Marketing Seminar (VQMS)  
2018 Participant, DARPA Technical Exchange on Complex Social Systems  
2018 Participant, NSF workshop on “Statistics at a Crossroads: Challenges and Opportunities in the Data Science Era”  
2016 Reviewer, National Science Foundation

### Part-time Consulting

2024 – *Voter Participation Center*  
2021 – 2022 *Twitter*  
2015 – 2017 *Facebook*  
2015 – 2016 *GoFundMe*

### Selected invited talks

#### *Learning from randomized interventions in social media.*

2024.07.17 Design and Analysis of Networked Experiments workshop, King’s College London.  
2024.04.26 Center for Information Networks and Democracy workshop, University of Pennsylvania.  
2024.04.19 Marketing seminar, McDonough School of Business, Georgetown University.  
2024.04.05 Marketing seminar, University of Colorado, Boulder.

#### *Long ties and tendencies toward triadic closure.*

2024.03.15 Marketing seminar, Cornell University.  
2024.02.14 Opportunity Insights seminar, Harvard University.

#### *Long ties: Formation, social contagion, and economic outcomes.*

2023.05.08 Science of the Predicted Human series, Copenhagen Center for Social Data Science.  
2023.04.05 Marketing seminar, Tilburg University.  
2023.03.14 Econometrics seminar, Center for Monetary and Financial Studies (CEMFI).

2022.11.09 Digital Social Networks workshop, Fondation des Treilles.  
2022.07.12 Center for Humans and Machines, Max Planck Institute for Human Development.  
2022.04.04 Social, Behavioral and Experimental Economics seminar, Department of Economics / Ross School of Business / School of Information, University of Michigan.  
2022.03.16 Marketing seminar, Stanford University Graduate School of Business.  
2022.01.26 Marketing seminar, Kellogg School of Management, Northwestern University.  
2021.09.21 Operations, Information, and Decisions seminar, Wharton School of Business, University of Pennsylvania.

*Algorithmic pricing and consumer sensitivity to price variability.*

2023.12.01 Conference on Artificial Intelligence, Machine Learning, and Business Analytics, Temple University.  
2022.10.03 Virtual Quantitative Marketing Seminar.

2021.12.09 Testimony in hearing on *Disrupting Dangerous Algorithms: Addressing the Harms of Persuasive Technology*.  
Subcommittee on Communications, Media, and Broadband, US Senate.

*Noise-induced randomization in regression discontinuity designs.*

2021.11.09 Econometrics seminar, Department of Economics, University College London.  
2021.10.11 Econometrics seminar, Department of Economics, University of Maryland.  
2021.02.26 Center for Applied Mathematics Colloquium, Cornell University.  
2020.06.08 Online Causal Inference Seminar, Stanford / ETH Zurich / UC Berkeley / Columbia / Florence / University of Washington / Yale.

*Seeding with limited or costly network information.*

2021.09.16 Data Science and Computational Social Science seminar, School of Information, University of Michigan.  
2021.03.23 Decision, Risk, and Operations seminar, Columbia Business School.  
2020.02.28 Marketing seminar, Carnegie Mellon University Tepper School of Business.  
2020.02.21 Computational Social Science Institute seminar, University of Massachusetts, Amherst.  
2020.02.28 Marketing seminar, Carnegie Mellon University Tepper School of Business  
2019.11.08 Data Science Institute seminar, Columbia University.  
2019.10.01 Program on Online and Matching-Based Market Design. Simons Institute for the Theory of Computing, University of California, Berkeley.

2021.09.09 *Peer effects in the COVID-19 pandemic.*  
Operations and Technology Management seminar, Questrom School of Business, Boston University.

2021.04.02 *Scalable bundling via dense product embeddings.*  
Information & Decision Sciences seminar, Carlson School of Management, University of Minnesota.

2020.01.04 Discussion of *Welfare effects of social media.*  
American Economic Association Annual Meeting.

2019.11.07 *Targeting interventions.*  
Marketing Science Institute conference on “What Are Customer Data? New Data for Better Decisions”, Chicago.

2019.08.01 *Discussion of papers on causal inference with interference.*  
Talks invited by the Biometrics Section, Joint Statistical Meetings 2019, Denver.

- 2019.07.31 *Observational studies of peer effects.*  
Talks invited by the Biometrics Section, Joint Statistical Meetings 2019, Denver.
- 2019.07.18 *Comments on "Peer effects in product adoption".*  
NBER Summer Institutes: IT & Digitization
- 2019.05.26 *Statistical machine learning and causal inference.*  
Lecture in Summer Workshop on Machine Learning, Carnegie Mellon University Tepper School of Business
- Stochastic seeding strategies in networks.*
- 2019.05.19 Social@IDC conference, Interdisciplinary Center, Herzliya.  
2019.04.26 Marketing seminar, USC Marshall School of Business.  
2019.04.24 Graph Exploitation Symposium (GraphEx 2019), Endicott, Massachusetts.  
2019.04.19 EconCS seminar, Harvard University.  
2019.03.18 Duke Network Analysis Center seminar, Duke University.  
2019.02.28 Marketing seminar, NYU Stern School of Business.  
2018.11.30 Marketing seminar, Rotman School of Management, University of Toronto.  
2018.11.8 Political Methodology seminar, Yale University.  
2018.11.6 Statistics seminar, University of California, Los Angeles.  
2018.09.27 Biostatistics seminar, School of Public Health, University of North Carolina.
- 2019.02.6 *Network structure and the spread of behavior.*  
NYC Media Seminar, joint between Columbia Business School and Hunter College.
- 2018.08.25 *Comments on Incrementality bidding & attribution.*  
Invited discussant at Quantitative Marketing and Economics conference. University of Chicago Booth School of Business.
- 2018.06.12 *Automating robust randomization inference*  
Network Causal Inference and Design of Experiments symposium, NetSci 2018. Paris.
- Randomization inference in networks*
- 2018.06.11 Statistical Inference for Network Models symposium, NetSci 2018. Paris.  
2018.03.07 Center for Business Education and Research, NYU Shanghai.  
2018.01.30 Research on Algorithms and Incentives in Networks (RAIN) seminar, Stanford University.  
2017.12.01 Human Dynamics Group seminar, MIT Media Lab
- 2018.05.24 *Peer effects in online networks*  
New York City Data Science Seminar, joint between NYU, Cornell Tech, Columbia, Facebook AI Research & Microsoft Research.
- Bias and high-dimensional adjustment in observational studies of peer effects*
- 2018.04.20 Marketing seminar, Cox School of Business, Southern Methodist University.  
2018.04.17 Marketing seminar, Rady School of Management, UCSD.
- 2018.04.06 *Experimenting with networked products*  
Using Corporate Data to Improve Outcomes conference, Becker–Friedman Institute, University of Chicago.

2018.03.10 *Estimating peer effects with peer encouragement designs*  
Computational Social Science seminar, University of Pennsylvania.

2018.02.28 *Network effects in broadcast–interpersonal media: Evidence from field experiments on Facebook.*  
Operations, Information & Technology seminar, Stanford University Graduate School of Business.

2017.01.13 Global Center for Big Data and Mobile Analytics, Fox School of Business, Temple University.

2016.12.8 Marketing seminar, Wharton School of the University of Pennsylvania.

2016.12.2 Network Science Institute, Northeastern University.

2016.10.12 Marketing seminar, Questrom School of Business, Boston University.

*Habits, social influence, and changing contexts*

2018.02.12 Joint Marketing seminar, Rotterdam School of Management & Erasmus School of Economics.

2018.02.07 Marketing seminar, Tilburg University

2018.01.30 Marketing seminar, University of Chicago Booth School of Business.

2017.11.02 *Statistical and causal inference in networks*  
Center for Data Science seminar, New York University

*Learning about peer effects from many experiments: Regularized instrumental variable methods for massive meta-analysis.*

2017.09.07 Machine Learning and Friends seminar, University of Massachusetts, Amherst.

2017.02.02 Marketing seminar, Columbia University Graduate School of Business.

2017.01.27 Marketing seminar, Johnson Graduate School of Business, Cornell University.

*Estimating peer effects with peer encouragement designs and massive meta-analysis.*

2017.03.02 Econometrics and Statistics seminar, University of Chicago Booth School of Business.

2017.02.15 Applied Statistics seminar, Institute for Quantitative Social Science, Harvard University.

2016.11.04 Berkeley/CeMMAF Conference on Networks. University of California, Berkeley.

2016.02.10 Marketing seminar. Kellogg School of Management, Northwestern University.

2016.01.27 Operations Research Center (ORC) IAP Seminar. MIT.

2015.12.09 Artificial Intelligence seminar. Radboud University.

*Learning causal models from many experiments.*

2016.12.01 Department of Statistics, Boston University.

2016.11.12 Columbia Causal Inference Conference, Columbia University.

2016.10.14 *When randomized experiments are plentiful.*  
Conference on Digital Experimentation (CODE@MIT), MIT.

2016.08.03 *Comments on machine learning in econometrics.*  
Talks invited by *Journal of Business and Economic Statistics*, Joint Statistical Meetings 2016, Chicago.

2016.08.01 *Randomized experiments in large networks.*  
Invited talks, Joint Statistical Meetings 2016, Chicago.

2015.12.07 *Causality, randomized experiments, and statistical inference in social networks.*  
Tutorial at Workshop on Algorithms and Models for the Web-graph (WAW) 2015. Eindhoven, Netherlands.



- 2015.10.06 *Learning and experimenting with behavior in networks* .  
Advancing Wellbeing Seminar Series. MIT Media Lab.
- 2015.09.30 *Learning, experimenting, and decision-making with networked products*.  
Initiative on the Digital Economy. MIT Sloan School of Management.
- Identifying effects in networks with peer encouragement designs*.  
2015.07.24 Department of Statistics. University of California, Berkeley.  
2015.03.27 Arthur M. Sackler Colloquium on Drawing Causal Inference from Big Data. National Academy of Sciences.
- 2015.06.1 *Rumor cascades*.  
Collective Intelligence 2015. Santa Clara, California.
- Learning, experimenting, and decision-making with networked products*.  
2015.03.09 Cornell Tech, New York City.  
2015.03.04 Department of Industrial Engineering and Operations Research. University of California, Berkeley.
- 2015.01.23 *Peer effects in online networks: Causal inference with and without experiments*.  
Berkeley Institute for Data Science, University of California, Berkeley.
- 2014.12.01 *Peer effects and interventions in online networks: Learning with and without experiments*.  
Department of Biostatistics. Bloomberg School of Public Health, Johns Hopkins University.
- 2014.10.28 *Peer effects in online networks: Mechanism experiments, observational studies, and global treatments*.  
Technology Management Seminar. Tel Aviv University School of Business.
- 2014.10.08 *Peer effects in online networks: With and without experiments*.  
Marketing Seminar. Stanford Graduate School of Business.
- Peer effects and global treatments: Design and analysis of experiments in networks*.  
2014.02.03 Symbolic Systems Forum. Stanford University.  
2013.11.11 Data, Inference, and Society Seminar. Stanford University Graduate School of Business.  
2013.11.7 Department of Statistics. UC Davis.
- Design and analysis of experiments in networks*.  
2013.10.02 Computational Statistics and Neuroscience Seminar. Department of Statistics. Columbia University.  
2013.10.01 Social Media and Political Participation seminar. New York University.
- 2013.4.22 *Estimating peer effects with mechanism experiments, observational data, and encouragement designs*.  
Statistical & Machine Learning Approaches to Network Experimentation Workshop. Heinz College.  
Carnegie Mellon University.
- Identifying peer effects with and without experiments*.  
2012.11.27 Causal Consulting Seminar. Department of Biostatistics. University of California, Berkeley.  
2012.10.27 Information Systems Seminar. Department of Information, Operations, and Management Sciences. New York University Stern School of Business.

*Identifying peer effects in online communication.*

- 2012.08.06 Workshop on Computational Advertising. Statistical and Applied Mathematical Sciences Institute (SAMSI).  
2012.05.08 Workshop on User-Centered Modeling. Institute for Mathematics and Its Applications (IMA). University of Minnesota.

2012.03.07 *Identifying peer effects in online communication behaviors.*

Research on Algorithms and Incentives in Networks (RAIN) Seminar. Stanford University.

2011.12.14 *Causal inference for peer effects in online behavior.*

Workshop on Current Challenges in Statistical Learning. Banff International Research Station (BIRS).