

# JAMES ALLEN EVANS

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## PROFESSIONAL EXPERIENCE

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- 2015— [Founding Faculty Director, Computational Social Science M.A. Program](#), University of Chicago.
- 2013— [Founding Director, Knowledge Lab](#), University of Chicago.
- 2016— [Professor, Department of Sociology, Committee on Conceptual and Historical Studies of Science, and the College](#), University of Chicago.
- 2012— Associate Professor (with tenure). Department of Sociology, Committee on Conceptual and Historical Studies of Science, and the College, University of Chicago.
- 2004-12 Assistant Professor. Department of Sociology, Committee on Conceptual and Historical Studies of Science, and the College, University of Chicago.
- 2005-08 Associate Editor, *American Journal of Sociology*.
- 2000 Instructor. Department of Sociology, Stanford University
- 1995-97 Research Associate. Graduate School of Business, Harvard University
- 1992-93 Co-founder and Executive Director. Utah High School for the Performing and Fine Arts

## AFFILIATIONS

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- 2018— [External Faculty Member, Santa Fe Institute](#)
- 2017— Visiting Faculty, Computer Science, Tsinghua University & Overseas Consultant, Joint Research Center on Knowledge & Intelligence (K&I) between Tsinghua and Chinese Academy of Engineering (CAE)
- 2015— External Faculty Member, NICO—Northwestern Institute on Complex Systems, Northwestern University
- 2015— Affiliate, METRICS—Meta-Research Innovation Center at Stanford, Stanford University

## EDUCATION

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- 1999-04 Ph.D. in Sociology. Stanford University. Committee: Mark Granovetter, Walter W. Powell, Stephen R. Barley.

Dissertation: *Sharing the Harvest: The Uncertain Fruits of Public/Private Collaboration in Plant Biotechnology*.

1997-99 M.A. in Sociology. Stanford University.

M.A. Thesis: *The Culture of Markets: The transformation of values, relationships, and identities in the temporary IT labor market*

1994 B.A. in Anthropology. Honors Thesis in Economics. Brigham Young University. Valedictorian for the College of Social Sciences.

Honors Thesis: *Children of Utopia: Demography & economy among United Order members*

#### **PUBLICATIONS**

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49. Kozlowski, Austin, Matt Taddy and James Evans. Forthcoming. "The Geometry of Culture: Analyzing the Meanings of Class through Word Embeddings." *American Sociological Review*. (arxiv.org:1803.09288)
48. Danchev, Valentin, Andrey Rzhetsky & James Evans. 2019. "Centralized communities more likely generate non-replicable results." *eLife*. (arxiv.org:1801.05042)
47. Sengupta, Nandana, Nathan Srebro & James A. Evans. 2019. "Simple Surveys: Response Retrieval Inspired by Recommendation Systems." *Social Science Computer Review*.
46. Wu, Lingfei, Dashun Wang & James A. Evans. 2019. "Large Teams Develop Science and Technology, Small Teams Disrupt It." *Nature* 566: 378-382.  
2019. "When Small Teams are Better than Big Ones." *Harvard Business Review* February 21.
45. McMahan, Peter & James A. Evans. 2018. "Ambiguity and Engagement". *American Journal of Sociology* 124(3): 860-912.
44. Shi, Feng, Misha Teplitskiy, Eamon Duede, James A. Evans. 2019. "The Wisdom of Polarized Crowds." *Nature Human Behaviour*, Mar 4: 1.  
2019. "Are Politically Diverse Teams More Effective." *Harvard Business Review* July 15.
43. Asoudeh, Shahab, Tingran Gao & James Evans. 2019. "Curvature of Hypergraphs via Multi-Marginal Optimal Transport". *Proceedings of the 57<sup>th</sup> IEEE Conference on Decision and Control*.
42. Asoudeh, Shahab, Tingran Gao & James Evans. 2019. "Wasserstein Soft Label Propagation on Hypergraphs: Algorithm and Generalization Error Bounds". *Proceedings of the 33<sup>rd</sup> AAAI on Artificial Intelligence*.
41. Börner, Katy, Olga Scrivner, Mike Gallant, Shutian Ma, Xiaozhong Liu, Keith Chewning, Lingfei Wu, and James A. Evans. 2018. "Skill discrepancies between

- research, education, and jobs reveal the critical need to supply soft skills for the data economy.” *Proceedings of the National Academy of Sciences*
40. Azoulay, Pierre, Joshua Graff-Zivin, Brian Uzzi, Dashun Wang, Heidi Williams, James A. Evans, Ginger Zhe Jin, Susan Feng Lu, Benjamin F. Jones, Katy Börner, Karim R. Lakhani, Kevin J. Boudreau, Eva C. Guinan. 2018. “Toward a more scientific science: A crowded frontier”. *Science* (Cover) 361(6408): 1194-1197, doi:10.1126/science.aav2484.
  39. Teplitskiy, Misha, Daniel Acuna, Aida Elamrani-Raoult, Konrad Kording, and James A. Evans. 2018. “The Sociology of Scientific Validity: How Professional Networks Shape Judgement in Peer Review”. *Research Policy* 47(9): 1825-1841.
  38. Gerow, Aaron, Yuening Hu, Jordan Boyd-Graber, David M. Blei, James A. Evans. 2018. “Measuring Discursive Influence across Scholarship.” *Proceedings of the National Academy of Sciences*, doi: 10.1073/pnas.1719792115.
  37. Katariya, Sumeet, Lalit Jain, Nandana Sengupta, James A. Evans, Robert Nowak. 2018. “Adaptive Sampling for Coarse Ranking.” *AISTATS*.
  36. Fortunato, Santo, Carl T. Bergstrom, Katy Börner, James A. Evans, Dirk Helbing, Staša Milojević, Alexander M. Petersen, Filippo Radicchi, Roberta Sinatra, Brian Uzzi, Alessandro Vespignani, Ludo Waltman, Dashun Wang, Albert-László Barabási. 2018. “Science of science.” *Science* 359(6379): eaao0185, doi: 10.1126/science.aao0185.
  35. Shi, Feng, Yongren Shi, Fedor Dokshin, James Evans & Michael Macy. 2017. “Can We Agree on Science? Measuring the Ideological Alignment of Science with Book Co-purchase Data.” *Nature Human Behavior* 1(0079), doi: 10.1038/s41562-017-0079.
  34. Evans, James and Pedro Aceves. 2016. “Machine Translation: Mining Text for Social Theory.” *Annual Review of Sociology* 42:1-30, doi:10.1146/annurev-soc-081715-074206.
  33. Tutterow, Craig and James Evans. 2016. “Reconciling the Small Effect of Rankings on University Performance with the Transformational Cost of Conformity” in *the University Under Pressure*, editors Elizabeth Popp Berman & Catherine Paradeise; *Research in the Sociology of Organizations* 46:265-301, doi:10.1108/S0733-558X20160000046009.
  32. Rzhetsky, Andrey, Jacob Foster, Ian Foster and James Evans. 2015. “Choosing Experiments to Accelerate Discovery.” Issue cover: “Engineering of Biology and Medicine”. *Proceedings of the National Academy of Sciences* 112(47):14569–14574, doi:10.1073/pnas.1509757112
  31. Foster, Jacob, Andrey Rzhetsky, James Evans. 2015. “Tradition and Innovation in Scientists’ Research Strategies”. *American Sociological Review* October, 80:875-908, doi:10.1177/0003122415601618

2016. Awarded the Star-Nelkin paper award by the Science, Knowledge and Technology Section of the American Sociological Association.
30. Shi, Feng, Jacob Foster, & James Evans. 2015. "Weaving the Fabric of Science: Dynamic network models of science's unfolding structure." *Social Networks* 43:73-85. doi:10.1016/j.socnet.2015.02.006
  29. Yao, Lixia, James Evans, Andrey Rzhetsky. 2015. "A health research opportunity index reveals the (ir)rational allocation of research resources to health needs". *Nature Biotechnology* 33(8):807-811, doi:10.1038/nbt.3276
  28. Gerow, Aaron, Bowen Lou, Eamon Duede and James Evans. 2015. "Proposing Ties in a Dense Hypergraph of Academics." *Proceedings of the 7th International Conference on Social Informatics (SocInfo) 2015*, held in Beijing, China, December 9-12, 2015.
  27. Zhang, Jingwei, Aaron Gerow, Jaan Altsosaar, James Evans, Richard Jean So. 2015. "Fast, Flexible Models for Discovering Topic Correlation across Weakly-Related Collections". *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP) 2015*, held in Lisbon, Portugal, September 17-21, 2015.
  26. Foster, Jacob G., and James A. Evans. 2016 "Promiscuous Inventions: Modeling Cultural Evolution with Multiple Inheritance." *Beyond the Meme*. Ed. William C. Wimsatt and Alan Love. Minneapolis: University of Minnesota Press.
  25. Allesina, Stefano, Cody Weinberger, James Evans. 2015. "Ten Simple (Empirical) Rules for Writing Science." *PLOS Computational Biology*, April 30. doi:10.1371/journal.pcbi.1004205
  24. Blair, David R., Kanix Wang, Svetlozar Nestorov, James A. Evans, Andrey Rzhetsky. 2014. "Quantifying the Impact and Extent of Undocumented Biomedical Synonymy" *PLOS Computational Biology*. Sept. 25.
  23. Gerow, Aaron, James A. Evans. 2014. "The Modular Community Structure of Linguistic Predication Networks." *Proceedings of TextGraphs-9: the workshop on Graph-based Methods for Natural Language Processing*, pages 48–55, October 29, 2014, Doha, Qatar. Association for Computational Linguistics.
  22. Wang, Jialei, Nathan Srebro, James A. Evans. 2014. "Active collaborative permutation learning" *Proceedings of the 20th ACM SIGKDD international conference on Knowledge discovery and data mining (KDD '14)*, pp. 502-511. <http://dx.doi.org/10.1145/2623330.2623730>
  21. West, Jevon, Jacob Foster, Martin Rosvall, Daril Villena, James Evans, Carl Bergstrom. 2014. "Finding Cultural Holes: How Structure and Culture Diverge in Networks of Scholarly Communication" *Sociological Science*. June 9, doi:10.15195/v1.a15
  20. Macal, Charles M., Michael J. North, Nicholson Collier, Vanja M. Dukic, Duane T. Wegener, Michael Z. David, Robert S. Daum, Philip Schumm, James A. Evans,

- Jocelyn R. Wilder, Loren G. Miller, Samantha J. Eels, Diane S. Lauderdale. 2014. "Modeling the transmission of Community-Associated Methicillin-Resistant *Staphylococcus aureus*: a dynamic agent-based simulation." *Journal of Translational Medicine* 12:124. doi:10.1186/1479-5876-12-124.
19. Evans, James, Jae-Mahn Shim, John P. Ioannidis. 2014. "Attention to Local Health Burden and the Global Disparity of Health Research" *PLOS ONE*. April 1, doi: 10.1371/journal.pone.0090147.
  18. Evans, James. 2013. "Future Science." *Science* 342(6154): 44-45.
  17. Evans, James. 2013. "Communication and the Evolution of Cognition." In: Linda Caporaal, James Griesemer and William Wimsatt, eds., *Scaffolding in Evolution, Cognition and Culture*, MIT Press.
  16. Macal, Charles M., Michael J. North, Nicholson Collier, Vanja M. Dukic, Diane S. Lauderdale, Michael Z. David, Robert S. Daum, Philip Schumm, James A. Evans, Jocelyn R. Wilder, Duane T. Wegener. "Modeling the spread of community-associated MRSA." *In Simulation Conference (WSC), Proceedings of the 2012, Winter 2012 (Dec 9)*: 1-12. IEEE.
  15. Rzhetsky, Andrey and James Evans. 2011. "War of Ontology Worlds: Mathematics, Computer Code, or Esperanto?" *PLoS Computational Biology* 7(9): e1002191. doi:10.1371/journal.pcbi.1002191.
  14. Divoli, Anna, Eneida Mendonça, James Evans, Andrey Rzhetsky. 2011. "Conflicting biomedical assumptions for mathematical modeling: The case of cancer metastasis" *PLoS Computational Biology* 7(10): e1002132. DOI:10.1371/journal.pcbi.1002132.
  13. Evans, James and Jacob Foster. 2011 "Metaknowledge." *Science* 331(6018):721-725.
  12. Evans, James and Andrey Rzhetsky. 2011. "Advancing Science through Mining Libraries, Ontologies and Communities." *Journal of Biological Chemistry* 286(27):23659-23666.
  11. Yao, Lixia, Anna Divoli, Ilya Mayzus, James A. Evans, and Andrey Rzhetsky. 2010. "Benchmarking Ontologies: Bigger or Better?" *PLoS Computational Biology* 7(1): e1001055. doi:10.1371/journal.pcbi.1001055.
  10. Evans, James. 2010. "Industry Collaboration, Scientific Sharing and the Dissemination of Knowledge." *Social Studies of Science* 40(5): 757-791.
  9. Evans, James. 2010. "Industry Induces Academic Science to Know Less About More." *American Journal of Sociology* 116(2): 389-452.
  8. Evans, James and Andrey Rzhetsky. 2010. "Machine Science." *Science* 329(5990): 399.
2010. "Response to 'Machine Science: The Human Side', 'Machine Science: Truly Machine-Aided Science', and 'Machine Science: What's Missing?'" *Science* 330(6002): 317-319.

7. Evans, James. 2010. "Nonprofit Research Institutes: From Companies Without Products To Universities Without Students." Pp. 151-82 in Lis Clemens and Doug Guthrie, eds., *Politics and Partnerships: The Role of Voluntary Associations in America's Political Past and Present*. University of Chicago Press.  
2011. Awarded Outstanding Book in Nonprofit & Voluntary Action Research by the Association for Research on Nonprofit Organizations and Voluntary Action.
6. Yao, Lixia, James A. Evans and Andrey Rzhetsky. 2009. "Novel Opportunities for computational biology and sociology in drug discovery." *Trends in Biotechnology* 26(12): 557-562.
5. Evans, James and Jacob Reimer. 2009. "Open Access and Global Participation in Science," *Science* 323: 1025. [Requested to be reprinted in *Biodiversity*.]  
2009. "Response to 'Open Access: Increased Citations Not Guaranteed,' 'Open Access: The Self-Selection Effect,' and 'Open Access: The Sooner the Better,'" *Science* 325: 266-267.
4. Evans, James. 2008. "Electronic Publication and the Narrowing of Science and Scholarship," *Science* 321: 395-399.  
2008. "Response to 'Literature Citations in the Internet Era,' 'Narrower Focus May Be More Efficient,' 'To Each Citation, a Purpose,' and 'A Cycle of Tradition and Innovation,'" *Science* 323: 37-38.  
2010. Awarded the best paper award by the Communication and Information Technologies Section of the American Sociological Association.
3. Evans, James. 2006. "Start-ups in Science: Entrepreneurs, New Ventures, and Novelty Outside Business" in Martin Ruef and Michael Lounsbury, eds., *Research in the Sociology of Organizations* 2006.
2. Evans, James, Stephen R. Barley and Gideon Kunda. 2004. "Beach Time, Bridge Time, and Billable Hours: The Temporal Structure of Technical Contracting," *Administrative Science Quarterly* 49: 1-38.
1. Kunda, Gideon, Stephen R. Barley and James Evans. 2002. "Why Do Contractors Contract? The Experience of Highly Skilled Technical Professionals in a Contingent Labor Market," *Industrial and Labor Relations Review* 55: 234-261.

**WORKING PAPERS (\*CURRENTLY UNDER REVIEW)**

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- Evans, James and Jacob Foster. "Algorithmic Abduction: Robots for Alien Reading."\*
- Yin, Yian, Yang Wang, James Evans, Dashun Wang. 2019. "Quantifying dynamics of failure across science, startups, and security."\* [arxiv.org/abs/1903.07562](https://arxiv.org/abs/1903.07562)
- Teplitkiy, Misha, Julianne St. Onge & James Evans. 2015. "How Firm is Sociological Knowledge? Reanalysis of GSS findings with alternative models and out-of-sample data, 1972-2012."

- Chu, Johan and James Evans. 2018. "Too Many Papers: Slowed Canonical Progress in Large Field of Science." socarxiv.org:10.17605/OSF.IO/JK63C
- Labutov, Igor, Hod Lipson & James Evans. 2015. "Machine Teaching."
- Acuna, Daniel E, Misha Teplitskiy, James Evans & Konrad Kording. 2015. "Should journals allow authors to suggest reviewers?"\*
- Foster, Jacob, Feng Shi and James Evans. 2017. "Measuring Novelty by Simulating Discovery."\*
- Sengupta, Nandana, Madeleine Udell, Nathan Srebro and James Evans. 2018. "Matrix Factorization for Missing Value Imputation."\*
- Wu, Lingfei, Linzhuo Li, and James Evans. 2018. "Collaboration and Cultural Contraction: Hyperbolic Embeddings of Social and Semantic Networks in 21st Century Physics." arxiv.org:1807.10216

#### REPORTS

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- Frodeman, Robert, J. Britt Holbrook, et al. 2012 "[The Promise and Perils of Transformative Research](#)." Summary report of workshop 'Transformative Research: Ethical and Societal Implications' held in Arlington, VA March 8 & 9. Exclusively contributed "Stable Scientific Strategies and the Unexamined Frontier of Knowledge."
- Lane, Julia et al. 2011 "[Changing the Conduct of Science in the Information Age](#)." Summary Report of workshop, organized by the Office of International Science and Engineering of the National Science Foundation held in Arlington, VA November 12, 2010. Exclusively contributed "Identification and the Complex System of Research."

#### REVIEWS

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- Evans, James. 2015. Review of *Epinets: The Epistemic Structure and Dynamics of Social Networks* by Mihnea C. Moldoveanu and Joel A. C. Baum. Stanford, Calif.: Stanford University Press, 2014. *American Journal of Sociology* 121(1):322-324. DOI:10.1086/681103

#### PRESENTATIONS

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- 2019 "Optimizing the Organization of Science", Keynote @ *Portfolio Analysis Symposium*, National Institutes of Health (April 3, 2019).
- 2019 "Social Limits to Understanding and the Cultural Evolution of Disconnection", Keynote @ *Retuning cognition with a pair of rocks: Culture, evolution, technology*, University of Pittsburgh Department of Philosophy (March 29, 2019).

- 2019 “Centralized Communities & Nonreplicable Results”, Invited Talk, Tel Aviv University Department of Statistics (March 4, 2019), *Research2Reacher* Conference, London / British Medical Association (February 26, 2019).
- 2019 “Embeddings for the Science of Science and Society”, Invited talk @ Tsinghua Computer Science Department (November 6, 2018); University of Venice, School of Management (February 27, 2019).
- 2019 “Large Teams Develop; Small Teams Disrupt Science & Technology”, Invited talk @ the Oxford Internet Institute (February 25, 2019); Invited talk @ SciFoo Camp at Facebook (Facebook 1, 2019).
- 2019 “Blockchain and the Science of Science”, Symposium on “Blockchain & Science” at the American Association for the Advancement of Science in Washington, D.C. (February 14, 2019).
- 2019 “Cultural & Social Fields: The Intrinsic Geometry of Culture & Society”, Keynote @ Berkeley Haas Culture Conference, UC Berkeley (January 16, 2019).
- 2019 “The Science of Science”, Invited talk @ the Chan-Zuckerberg Initiative, Redwood City, California (January 15, 2019).
- 2018 “Characterizing Skill in the Indian Informal Sector”, Invited talk @ a Conference on *the Social and Economic Development of Slums*, University of Chicago Delhi Center (December 6, 2018)
- 2018 “Science of Science and Innovation”, Invited talk @ a workshop to explore pathways of collaboration at Ricardo Hausman’s Center for International Development, Kennedy School of Public Policy, Harvard University (November 19, 2018), and Invited talk, Beijing Normal University School of Systems Science (November 6, 2018).
- 2018 “Social Computing”, Keynote @ 2nd Conference of *On-line Social Behavior* @ Tsinghua University (November 3, 2018); AI & Society Salon, co-sponsored by Tencent Inc. and the Swarna Club (November 7, 2018), and Invited talk Alibaba, Hangzhou, China (November 9, 2018).
- 2018 “Social Limits to Understanding”, Keynote @ Computational Social Science Conference, University of Arizona (October 26, 2018); Invited talk, Facebook, Menlo Park (August 22, 2018).
- 2018 “Computational Social Science: What it means and why it matters”, Invited talk @ Computational Social Science Steering Committee, University of Arizona (October 25, 2018).
- 2018 “Social Machine Inference for Novel Discovery (MIND)”, Invited talk @ DARPA conference for the Ground Truth program (September 14, 2018).



- 2018 “The Complex Social Structure of Long and Short-term Thinking”, Invited talk @ Workshop on *Judgment Under a Diversity of Timescales*, Santa Fe Institute at Principal Financial Group, Des Moines, Iowa.
- 2018 “The geometry of meaning: embedding and systematically interpreting text, tags and social networks”, Invited talk @ Computational Social Science Summer School, Volkswagen Institute, located at USC’s Information Sciences Institute in Marina Del Rey (August 1, 2018).
- 2018 “Complex Social Systems”, Invited talk @ Complexity Science for National Security, a Santa Fe Institute Applied Complexity Studio (July 9, 2018)
- 2018 “A Pseudo-science of Data”, Keynote @ Taos Data Science Summit about Data Science Summits (July 6, 2018).
- 2018 “How Society Thinks (Together)”, Keynote @ Computational Social Science Conference, IIIT, Delhi, India (June 20, 2018)
- 2018 “Algorithmic Abduction: Robots for Alien Reading”, Invited talk @ the Consortium of Humanities Centers and Institutes, University of Virginia (June 15, 2018)
- 2018 “What is Scientific Knowing in a Computational Era”, Invited talk @ Future Compute, a celebration of the Computation Institute at the University of Chicago (May 16, 2018)
- 2018 “Solving Society Challenges with Artificial Intelligence”, Presentation and Panelist @ Mind Bytes, a conference sponsored by the Research Center for Computing, University of Chicago (May 8, 2018)
- 2018 “Until the Singularity, ensembles rule...but which ones?” Organizing talk at the conference *Beyond Code & Craft* at the Franke Center for the Humanities, University of Chicago (April 27, 2018)
- 2018 “Social Disconnection Increases Collective Imagination”, Invited talk @ Stevanovich Institute on the Formation of Knowledge, University of Chicago (April 23, 2018)
- 2018 “Tiny Teams Disrupt, Fragmented Fields Persist, and Abnormal Audiences Drive Advance in Biomedical Science”, Keynote @ Conference on *Contexts of Technological Change in Medicine: Centers & Margins*, McGill University & Jewish General Hospital of Montreal (April 19, 2018)
- 2018 “Modeling Judgment & Influence” @ Santa Fe Institute in association with the workshop *From Judgment to Impact* (April 3, 2018)
- 2018 “Collective Reasoning in Patents, Technology & Science through Surprise” @ Santa Fe Institute in association with the workshop (March 13, 2018)
- 2018 “The Wisdom of Politically Polarized Crowds”, Conference talk @ International Conference for Computational Social Science, Northwestern University (July 14, 2018), Keynote @ The International Conference on

- Complex Networks or CompleNet, Northeastern University (March 7, 2018), Invited talk @ University of Pennsylvania, Annenberg School of Communication (February 27, 2018), Invited talk @ University of Chicago, Computational Social Science workshop (January 25, 2018).
- 2018 “Big Science Communities and Nonreplicable Results”, Invited talk @ LeBow College of Business, Drexel University (February 26)
- 2017 “Human Computing: Crowd-Sourcing & Beyond” @ China Computer Federation Conference, Advanced Disciplines Lectures on “Computation and Social Networks”, Beijing (December 22, 2017)
- 2017 “Social Limits to Understanding & Fluid Representations of Social and Semantic Networks” @ Tsinghua Department of Computer Science (December 21, 2017)
- 2017 “Computational STS” @ Tsinghua Institute for Science, Culture & Society (December 18, 2017)
- 2017 “(Soft) Social Limits to Understanding” @ Santa Fe Institute in association with the workshop *The Limits of Understanding* (November 29-30, 2017)
- 2017 “Algorithmic Abduction: Robots for Alien Reading” @ Max Planck Institute for the History and Philosophy of Science workshop on *The Intelligence of Algorithms* (October 20, 2017)
- 2017 “The Geometry of Meaning: Word Embeddings for Social and Cultural Insight” @ Northwestern Quantitative Methods Workshop (October 9, 2017); University of Chicago, Digital Humanities Forum (October 6, 2017)
- 2017 “How Society Thinks” @ Amazon.com in association with a mini-conference I co-organized (with Neal Patel), *Radical Social Sciences and Humanities Foo* (October 11, 2017).
- 2017 “Crossing Disciplinary Boundaries” Opening remarks @ University of Chicago Social Science Division *Cross Disciplinary Boundaries* graduate student Conference (September 22, 2017)
- 2017 “Discovering the Extent of Estimable Prediction (DEEP)” @ Technology Watch / Horizon Scanning Meeting, Arlington, VA (September 19, 2017)
- 2017 “The Geometry of Society & Culture” @ American Sociological Association, Montreal, Quebec (August 14, 2017)
- 2017 “Knowledge & Networks” @ Tsinghua University, Sociology and Computer Science Department Joint Colloquium (June 5, 2017)
- 2017 “Large Teams Develop Science and Technology; Small Teams Disrupt It” @ Organizations & Markets Workshop, UChicago (April 18, 2017); American Sociological Association, Montreal, Quebec (August 12, 2017)

- 2017 “To Provoke & Surprise” @ Keynote at Stanford Literary Lab annual conference: *Micromegas: The very small, the very large, and the object of Digital Humanities* (April 14, 2017)
- 2017 “Collaboration & Competition in Science” @ Harvard Business School Workshop on the Production Function of Science (April 11, 2017)
- 2017 “High-throughput Replication & Reliability” @ University of Chicago, Computational Social Science Workshop (Jan. 19, 2017)
- 2016-17 “How Science & Technology Think (and How to Think Better)” @ UC Berkeley, Haas School of Business, Management of Organizations Group (Feb. 11, 2017); University of Michigan, Management & Organizations Group (Oct. 5, 2016)
- 2016 “Modeling Discovery in Science & Technology” @ University of Chicago Statistics Department Colloquium (Nov. 28, 2017)
- 2016 “Social Context of Innovation” panelist @ Centre for International Governance Innovation (CIGI) & McGill University Law School’s Conference *Innovation in Context*. Videos: <https://www.cigionline.org/video-series/innovation-context> (Nov. 18, 2016)
- 2016 “Designing Discovery: Hypergraph Models of Innovation for Science & Technology” @ AAAI Symposium on *Accelerating Science: A Grand Challenge for AI* (Nov. 17, 2016)
- 2016 “Millions of online book co-purchases reveal partisan differences in the consumption of science” @ Chicago-Tsinghua Conference on Network Analysis of Online Behavior (June 10, 2016).
- 2016-17 “How Science Thinks (and How to Think Better)” @ Peking University, Center for Social Research (June 6, 2017); Models of Science, Technology and Innovation Conference, National Academy of Sciences (May 18, 2016); MIT Technology, Innovation, Entrepreneurship, and Strategic Management (TIES) seminar (April 4, 2016).
- 2016 “User-Generated Images as Massively Distributed Sensors” @ Vision Group, Toyota Technological Institute, Chicago (May 4, 2016)
- 2016 “Prospective Sense-Making: Scaffolding Collective Imagination” @ Santa Fe Institute group on evolution in biology and history (April 30, 2016)
- 2016 “Reading the Community: Weighting and Searching Over Experimental Claims” @ DARPA Big Mechanism Conference (March 21, 2016)
- 2016 “Language, Communication & Knowledge” @ Santa Fe Institute Working Group on the Evolution of Language (January 18, 2016)
- 2016 “Communication & Knowledge: Collective Thinking, Discovery and Engagement” @ Kellogg Management & Organizations (MORS) workshop,

- Northwestern University (October 7, 2015); University of Linköping, Sweden (February 18, 2016).
- 2016 “How Science Thinks” @ IIT Delhi, Computer Science Department (Sept. 14, 2016); Tsinghua Computer Science Department seminar (June 13, 2016); Max Planck Institute for the History of Knowledge, Berlin (February 11, 2016).
- 2015 “From Big Data to Big Questions: Accelerating Science with the Provenance of Knowledge” @ University of Washington Data Science Distinguished Speaker Series (December 9, 2015).
- 2015 “A (Computational) Social Science of Thinking and Knowing at the University of Chicago” @ Roots of Inquiry & Growth of Ideas: A Faculty Panel on Discovery in the Social Sciences, moderated by David Nirenberg (other panelists included James Heckman, Susan Goldin-Meadow, and Tara Zahra) to inaugurate the exhibit “125 Years of Big Ideas in the Social Sciences” (November 12, 2015).
- 2015 “Love, Terror, Confusion...and Information” @ Remmy Bumpo Theater; a Lecture in preface to Caryl Churchill’s play, “Love and Information” as part of their *Between the Lines* series (October 11, 2015).
- 2015 “Novelty in Collective Search & Discovery” @ Santa Fe Institute Workshop on “Innovation as Search on a Space of Possibilities: Constructed or Discovered? Metaphorical Device or Analytical Construct?” (October 10, 2015).
- 2015 “How Firm is Sociological Knowledge? Reanalysis of GSS findings with alternative models and out-of-sample data, 1972-2012” @ Quantifying Science Satellite of the Conference on Complex Systems, Phoenix, Arizona (October 2, 2015).
- 2015 “Can We Agree on Science? Measuring the Ideological Alignment of Science with Book Co-purchase Data” @ Computational Social Science Summit, Northwestern Institute for Complex Organization and Kellogg (May 17, 2015); Microsoft Research, Boston (August 12, 2015); Computational Social Science Conference, Cornell University (September 12, 2015); Computational Social Science satellite of the Conference on Complex Systems (Keynote), Phoenix, Arizona (October 2, 2015); Computational Social Science workshop, University of Chicago (October 8, 2015).
- 2015 “Faceting U.S. Science Funding” with Dashun Wang @ National Science Foundation, Arlington, Virginia (July 10, 2015).
- 2015 “Discovering the Extent of Estimable Prediction (DEEP) @ Basic Research Innovation and Collaboration Center (BRICC) and AFOSR, Arlington, Virginia (July 8, 2015).
- 2015 “Inside the Discovery Cloud: Deep Text Mining for Cancer & Disease” with Ishanu Chattopadhyay @ Computation Institute (May, 2015).

- 2014-15 “How Science Thinks” @ Booth School of Business, Decision Sciences Workshop (May, 15); Brigham Young University (March, 15); Santa Fe Institute (April, 15); Air Force Office of Scientific Research (AFOSR) Research Analytics Seminar (Sept. 10, 14); American Sociological Association (Aug. 18, 14); Keynote for Associated Publishers of Europe, Berlin (Jan. 27, 14).
- 2012-15 “Ambiguity and Intellectual Engagement” talk @ Cornell Sociology (Feb. 27, 2015); Columbia Sociology (Oct. 8, 2014); Stanford Conference on Computational Social Science (Aug. 15, 2014); the Booth School of Business, Organizations and Markets workshop (May 11, 2014); History and Philosophy of Science workshop, University of Chicago’s (May, 2013); Princeton’s Center for the Study of Social Organization (Dec., 2012); Chicago Colloquium on Digital Humanities and Computer Science (Nov., 2012); the American Sociological Association meeting in Denver (Aug, 2012).
- 2014 “How Cities Think” talk @ workshop on “Urban Science and Big Data” at the Radcliffe Center for Advanced Studies, Harvard University, Cambridge, MA (Dec. 15).
- 2014 “Thinking Big with Big Data” keynote @ the launch of Tencent Holding Company’s (We-Chat, QQ) Internet & Society Institute, Beijing, China (July 25).
- 2014 “How much Serendipity is there Science” talk and panelist @ “Science and Serendipity: Happenstance and Other Factors Underlying Accidental Discoveries” Joint Speaker Event for University of Chicago Faculty and Argonne and Fermilab Scientists, Researchers and Engineers (May 21).
- 2014 “Text as Data (About Thinking, Knowing, Feeling)” @ University of Chicago Technology Day Conference (April 16).
- 2014 “Discourse as Neural Network” @ Alexander von Humboldt Institute for Internet and Society (Jan. 28).
- 2014 “Expression and the reception of ideas” Editorial Studies, Free University of Berlin (Jan. 27).
- 2014 “How Science (as a System) Thinks” Computation Institute Speaker Series: Inside The Discovery Cloud—Culture and Society (Jan. 15); Northwestern Institute for Complex Systems—NICO (Feb. 26); Stanford’s Work, Technology and Organization (WTO) seminar (Apr. 13).
- 2012-14 “Choosing the Next Experiment: Tradition, Innovation and Efficiency in the Selection of Scientific Ideas” @ American Sociological Association (Aug. 18, 2014); IBM Services Research Symposium (Oct. 22, 2013); Rational Choice workshop, University of Chicago (Apr. 2013); Keynote, Innovation & Digital Scholarship Lecture Series, Oxford Internet Institute (Mar., 2013); Berkeley

- Innovation Seminar, UC Berkeley (Jan. 2013); Center for the Study of Social Organization, Princeton University (Dec, 2012).
- 2013 “Knowledge Lab” Computation Institute & CRI Student Engagement Lightening Talk (Nov. 1).
- 2013 “Why Big Data needs Science Studies more than Science Studies needs Big Data” @ the Society for the Social Studies of Science (4S), annual meeting, San Diego (Oct. 11).
- 2013 “Choosing the Next Experiment: Collective Cognition and the Selection of Scientific Ideas” @ John von Neumann Public Lecture in Complexity and Computation, Wisconsin Institutes for Discovery (Oct. 9).
- 2012 “Choosing the Next Experiment: Measuring Tradition, Novelty and Global (In)efficiency in Scientific Investigations” (poster) @ the National Academy of Sciences sponsored “SciSIP Principal Investigator’s Conference” in Washington, D.C. (Sep).
- 2012 “Tradition, Innovation and Efficiency in Scientists’ Research Strategies” @ “Intellectual and Institutional Innovation in Science” conference, organized by Thomas Heinz and Robert Münch of the University of Bamberg, and the German Federal Ministry of Education and Research; Bundesministerium für Bildung und Forschung (BMBF), Program: New Governance of Science in Berlin (Sep).
- 2012 “Why the social sciences (often) don’t use big data” @ the Department of Energy sponsored Institute for Computing in Science (ICiS) workshop, “Big Data and Long Tails: Addressing the Cyber-Infrastructure Challenges for Research on a Budget” in Park City (Aug).
- 2012 Speaker/panelist for AAUP (American Association of University Presses) panel on “Policy Wars: University Presses in the Crossfire,” organized by Alison Mudditt, director of the University of California Press (Jun).
- 2012 “Choosing the Next Experiment: Gains and losses for science and society” @ NetSci Conference, Science of Science and Innovation Satellite Conference, Northwestern University (Jun).
- 2012 “University opportunities for innovation and the knowledge economy” @ Lamplighters, a conference for senior university administrators. Also co-organizing speaker/panelist for related “Innovation panel” at the same conference (Jun).
- 2012 “Stable Scientific Strategies and the Unexamined Frontier of Knowledge” @ National Science Foundation workshop on The Promise and Perils of Transformative Research, organized by Robert Frodeman and J. Britt Holbrook (Mar).
- 2011 “Novelty, Metaknowledge and Models of Discovery” @ the Indiana University speaker series on Networks and Complex Systems (Nov).

- 2011 “Stability and Conformity in Scientists’ Research Strategies” @ the Innovations, Organizations and Society Conference joint between University of Chicago-Northwestern (Oct).
- 2011 “The Social Life of Ideas” @ SciFoo Camp, Google (Aug).
- 2011 “Local Attention to Disease and the Global Disparity of Health Knowledge” @ the American Sociological Association in Las Vegas, Nevada (Aug).
- 2011 “The Complex Network of Skill and Ideas” @ workshop on *Measuring the Impacts of Federal Investments in Research*, sponsored by the Board on Science, Technology, and Public Policy of the National Research Council and the Committee on Science, Engineering, and Public Policy of the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine (Apr).
- 2011 “Creative Confidence in Building a Portfolio of Projects” @ the Social Evidence and Theory Workshop, University of Chicago (Apr).
- 2011 “The Effect of Technology on Scholarship” @ the Disciplines and Technologies workshop at the Franke Institute (Apr).
- 2010 “Science’s Taste for Open Access” @ American Sociological Association (Aug).
- 2010 “Using the population of knowledge claims to identify (and mine) the limits of knowledge” @ the inaugural Department of Energy Institute for Computing in Science (ICiS) workshop, “Integrating, Representing, and Reasoning over Human Knowledge: A Computational Grand Challenge for the 21st Century”, SnowBird, Utah (Aug).
- 2010 “The Google Effect on Science and Scholarship” @ the Department of Physics Colloquium, University of Chicago.
- 2009 “The Google Effect on Knowledge & Culture: By Broadening Individual Reach the Internet Narrows Global Understanding” @ American Sociological Association (Aug ‘09), Innovations, Organizations and Society Conference joint between University of Chicago-Northwestern (Oct ‘09), Society for the Social Study of Science (Oct ‘09), Theory and Evidence workshop at the University of Chicago (Nov ‘09), Loyola Sociology Department (Mar ‘10), Columbia Sociology Department (Apr ‘10).
- 2009 “Describing NSF Research Centers: A metaphysical approach” @ Centers, Universities, and the Scientific Innovation Ecology: An NSF Workshop (Apr ‘09).
- 2008-09 “Institutions and Science: the Influence of Internet and Industry” @ the Society of Science Society Presidents, Washington, D.C. (Dec ‘08), University of Michigan Strategy Seminar (Mar ‘09), University of Chicago Harper Lecture, Chicago (Oct ‘09).

- 2008 “ePublication and Attention in Science and Scholarship” @ the Workshop on Economic Perspectives on Scholarly Communication in a Digital Age, University of Michigan (Sep. ‘08).
- 2007-08 “Industry Collaboration and Secrecy in Academic Science” @ the Emergence of Organization Conference at the University of Chicago (Nov ’07), Harvard University Organizational Behavior seminar (Dec ’07), Organizations & Markets workshop at the University of Chicago (Jan ’08), Brigham Young University Sociology Seminar (Mar ’08), and the American Sociological Association (Aug ’08).
- 2006-07 “Industry Collaboration and Theory in Academic Science” @ the Organizational Behavior Workshops in the business schools at Columbia University (Apr ‘07) and University of Illinois at Urbana-Champaign (Apr ‘06), Northwestern Institute on Complex Systems (Mar ‘07), and the Science, Technology, Society and the State Workshop at the University of Chicago (Jan ‘06).
- 2006 “Knowledge-Bases and the Sociology of Science” @ the Computation Institute at the University of Chicago (Nov).
- 2005 “Industry Collaboration and the Ethos of Academic Science: Novelty and Persistence in *Arabidopsis thaliana* research, 1974-2002” @ the Harvard-MIT Economic Sociology Workshop (Sep); the Entrepreneurship Group at Harvard Business School (Sep); the International Conference for *Arabidopsis* Research meeting at the University of Wisconsin (Jun); the Organizations and Markets Workshop at the University of Chicago Business School (Apr); and the History, Philosophy and Sociology of Science Workshop at the University of Chicago (Apr).
- 2005 “Nonprofit Research Institutes: From companies without products to universities without students” @ the SSRC Capstone Conference on Philanthropy and the Nonprofit Sector in Florence (Mar).
- 2004 “Public / Private Collaboration in *Arabidopsis thaliana* research, 1974-2002” @ the Carnegie Institute of Washington’s Division of Plant Biology, Stanford, California (Jun).
- 2003 “Sharing the Harvest? The Uncertain Fruits of Public / Private Collaboration in Plant Biotechnology” @ Cornell University’s School of Industrial and Labor Relations (Nov), the University of Chicago’s department of sociology (Nov), Georgia Institute of Technology’s School of History, Technology and Society (Oct), and the University of Iowa department of sociology (Oct).
- 2002 “Harvesting Basic Bioscience: Firm Strategy Within the Organizational Ecology of Plant Biology and Biotechnology” @ the Academy of Management session on Technology and Information Management (Aug).



- 2002 “The Temporal Dynamics of Work: The Perception of Time among High Skilled Contingent Workers” @ the Academy of Management section on Organization and Management Theory (Aug).
- 2002 “Structures of Science and Trajectories of Technology: Organizations, Scientists and Intellectual Property Shaping the Frontiers of Plant Biology and Biotechnology” (poster) @ American Sociological Association (Aug).
- 2002 “Sharing the Harvest: The Uncertain Harvest of Private/Public Collaboration in Plant Biotechnology” @ SSRC Conference for the Corporation as a Social Institution and the SSRC Dissertation Workshop for the Program on Philanthropy and the Nonprofit Sector (Nov).
- 2001 “The Market Community: The Migration of Relationships and Transformation of Community in the Temporary IT Labor Market” @ SCANCOR seminar, Stanford University (Oct).
- 2001 “By Motivation or Situation? Career Choices, Information Flows, and the Formation of Collective Identity in Venture Capital” @ the Sociology of Culture workshop at Stanford University (Mar) and in 2002 at the American Sociological Association session on Organizations and Occupations (Aug).
- 2000 “Intimate Valuation and the Experience of Contract Labor Markets” @ the Institutions, Culture, Conflict, and Change Conference, Kellogg School of Management, Northwestern University (Nov).
- 2000 “The Nature and Experience of Market-Spanning Networks in The Accelerated Contract Labor Market” @ the American Sociological Association section on Economic Sociology (Aug).
- 2000 “Duality in Action: A Longitudinal Study of Relationships and Attitudes” (with Kathleen Valley and Tracy Thompson) @ the Academy of Management session on Organizational Behavior (Aug).

#### **HONORS, FELLOWSHIPS AND AWARDS**

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- 2016 Star-Nelkin award (best paper published in the prior two years) from the American Sociological Association’s section on Science, Technology and Knowledge (SKAT) for “Tradition and Innovation in Scientists Research Strategies.”
- 2015 Facebook’s Academic Program (\$25,000 gift)
- 2014 IBM Data Fellow (\$70,000 gift)
- 2012-18 Senior Fellow, Computation Institute, University of Chicago.
- 2010 Best Paper award (best paper published in the prior two years) from the American Sociological Association’s section on Communication and Information Technology (CITASA) for “Electronic Publication and the Narrowing of Science and Scholarship.”

- 2008 Citation from the Council of Science Society Presidents for “Improving our Understanding of the Role of the Internet in Scientific Communications.”
- 2006-12 Fellow, Computation Institute, University of Chicago.
- 2002-04 Social Science Research Council (SSRC) Fellow, Program on the Corporation as a Social Institution.
- 2002-05 SSRC Fellow, Program on Philanthropy and the Nonprofit Sector.
- 2002-03 MacArthur Scholar and Fellow at the Stanford Center for International Security and Cooperation.
- 1998-02 Jacob K. Javits Fellow (4-year Department of Education Fellowship).
- 1997-98 Stanford Graduate Fellow in the Department of Sociology.
- 1994 Valedictorian, Brigham Young University: College of Social Sciences (and Anthropology Department); University Honors; Deans List.
- 1994— Golden Key and Phi Kappa Phi Honor Societies.

**GRANTS**

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- 2019-22 Co-Principal Investigator (with Dashun Wang, Brian Uzzi, Laszlo Barabasi, Ben Jones and Santo Fortunato), titled “Science of Science”, Air Force Office of Scientific Research #FA9550-19-1-0354 under the Minerva program (\$5,300,000).
- 2018-21 Principal Investigator (with Dashun Wang) titled “Teams: Innovation Engines for Science”, National Science Foundation # 1829366, Science of Science and Innovation Policy (\$550,000).
- 2018-21 Co-Principal Investigator (with Daniel Acuna and Konrad Kording) titled “Optimizing Peer Review”, National Science Foundation, Science of Science and Innovation Policy (\$550,000).
- 2018-21 Principle Investigator on DARPA Grant # HR00111820006, titled “Social MIND: Social Machine Intelligence for Novel Discovery” in the program “Ground Truth” (\$2,000,000).
- 2017-20 Principal Investigator (with Gary Lupyan) on Sloan Foundation Grant “The Impact of Programming Languages and Data Science Frameworks on Thinking, Software, and Science” (\$750,000)
- 2016 Principal Investigator for “International Symposium on the Science of Science”, March 22-23, 2016; National Science Foundation #1623809 (\$35,000).
- 2015-19 Co-Principal Investigator (with Adrian Johns and James Chandler) on Mellon Foundation Grant “Algorithms, Models and Formalisms” (\$797,000).

- 2015-19 Co-Principle Investigator (with Alberto Cambrosio, PI) “Oncology’s metaknowledge networks: an investigation of the collective dynamics of bio-clinical innovation”; Canadian Institutes of Health Research (CIHR) (\$640,000).
- 2015-19 Co-Principle Investigator (with Boaz Keysar, PI) “The Impact of Foreign Languages on Problem Solving: An Interdisciplinary Study of Language and Society”; IBSS (Interdisciplinary Behavioral and Social Sciences Research) grant from NSF (\$900,000).
- 2015-17 Principal Investigator (with Dashun Wang) “Discovering the Extent of Estimable Prediction (DEEP) in Science and Technology”; Air Force Office of Scientific Research (FA9550-15-1-0162) (\$767,811).
- 2014-17 Co-Investigator (with Jason Owen-Smith, Julia Lane and Bruce Weinberg) “The Institute for Research on Innovation & Science (IRIS)” from the Sloan (\$1,200,000) and Kauffman (\$1,497,751) foundations.
- 2014-17 Senior Personnel on NIH BEST (Broadening Experience in Scientific Training), “myCHOICE (CHicago Options-In-Careers Empowerment)”
- 2014-16 Principal Investigator (with Julia Lane and Jordan Boyd-Graber) on NSF NCSES- (National Center for Science and Engineering Statistics) grant #1422902, “Collaborative Research: Scaling Insight into Science: Assessing the value and effectiveness of machine assisted classification within a statistical system” (\$500,000).
- 2014-17 Co-Investigator on DARPA grant #14145043, “Big Machine Science” in the Big Mechanism program (\$4,500,000).
- 2013-16 Principal Investigator on John Templeton Foundation “Metaknowledge Network” (\$5,300,000).
- 2013-16 Principal Investigator on NSF SciSIP (Science of Science and Innovation Policy) grant #1158803, “Tracing Influence & Predicting Impact in Science” (\$498,118).
- 2012-14 Co-Principal investigator (with Adrian Johns and James Chandler) on Mellon Foundation Grant “Disciplines and Technologies” (\$227,000).
- 2011 Organizer (with Ian Foster, Andrey Rzhetsky, Hod Lipson) of the Department of Energy’s ICiS workshop: “Accelerating Discovery: Human Computer Symbiosis 50 Years On”, Park City, Utah (\$100,000).
- 2010-12 Principal Investigator on NSF supplement to #0915730 (see below) for “StarMetrics: Evaluating Scientists and Science” (\$80,000).
- 2010 Organizer (with Ian Foster and Andrey Rzhetsky) of the Department of Energy’s inaugural Institute for Computing in Science (ICiS) workshop: “Integrating, Representing, and Reasoning over Human Knowledge: A

- Computational Grand Challenge for the 21st Century”, SnowBird, Utah (\$100,000).
- 2009-12 Principal Investigator on NSF SciSIP (Science of Science and Innovation Policy) grant #0915730, “Assessing and Predicting Scientific Progress through Computational Language Understanding” (\$398,000).
- 2009-10 Program Leader on NIH supplementary award to #031672 (Andrey Rzhetsky, PI) “Computer system for functional annotation of genomic data” (\$134,998)
- 2009-11 Principal Investigator (with Andrey Rzhetsky and Ian Foster) on NIH EUREKA (Exceptional, Unconventional Research Enabling Knowledge Acceleration) grant #010132, “Large-Scale Discovery of Scientific Hypotheses; Computation Over Expert Opinions” (\$1,215,744).
- 2009-14 Co-Investigator (Diane Lauderdale, PI) on NIH Models for Infectious Disease Agent Study (MIDAS) Center #087729, “Modeling MRSA in the community” for the modeling of MRSA outbreaks and associated interventions in the community (\$2,400,000).
- 2008-11 Senior Personnel (Michael Papka, PI) on NSF Cyberinfrastructure grant #0821678, “Petascale Active Data Store” (\$1,500,000).
- 2008-09 Research Opportunity Seed grant. Vice President’s Office for Research, The University of Chicago. (\$10,000).
- 2008-09 Principal Investigator on Health and health policy research for disadvantaged populations seed grant, Center for Health Administration, The University of Chicago, entitled “Unequal Knowledge: Disparities between Burden of Disease and Bio-Medical Understanding.” (\$20,000).
- 2005-07 Research Opportunity Seed grant. Vice President’s Office for Research, The University of Chicago. (\$9,680).
- 2005-06 Instructional Improvement Grant. Center for Teaching and Learning, The University of Chicago. (\$1,000).
- 2003-06 Co-Principal Investigator to NSF grant #0242971, “Sharing the Harvest: The Uncertain Fruits of Private/Public Collaboration in Plant Biotechnology” (\$169,000), March 1, 2003 through February 28, 2006. (Walter Powell, Principal Investigator.)
- 2001 Stanford Graduate Research Opportunities Grant. (\$5,000).

## **RESEARCH POSITIONS**

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- 2005— Research Associate. Ogburn-Stauffer Center for the Study of Social Organization, National Opinion Research Center (NORC).
- 2003-04 Researcher with Walter Powell, Stanford University. Worked on dissertation research and comparisons of plant biotechnology with human biotechnology.

- 1998-01 Research Assistant to Stephen Barley, Stanford University. Conducted interviews of technical contractors and participant observation in relevant work and community settings; coded and analyzed interviews and field notes.
- 1998-99 Research Assistant to Mark Granovetter, Stanford University. Developed relational database from archival data to explore social networks and career mobility in the early electricity industry.
- 1995-97 Research Associate to Kathleen McGinn, Harvard Business School. Performed social psychology experiments and analyzed experimental data, social networks, and interviews.
- 1995-97 Research Associate to George Wu, Harvard Business School. Gathered archival real estate data and analyzed it to examine seller behavior; Analyzed data on the structure of joint ventures.
- 1995-96 Research Associate to V.G. Narayanan, Harvard Business School. Wrote course notes on human motivation in markets and firms; Wrote case studies on accounting at Intel.
- 1994 Research Assistant, Dwight Israelsen, Economics Department, Brigham Young University. Gathered and analyzed archival data on frontier economy and demography.

#### TEACHING EXPERIENCE

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- 2017 Instructor for “Augmented Intelligence” for MBA students at the Booth School of Business.
- 2010-17 Instructor for “Science, Culture & Society III,” the history of science in society from the founding of the Royal Society to the present.
- 2016 Co-instructor for “Cultural and Biological Evolution: Convergences, Contrasts, Controversies” with William Wimsatt.
- 2005-16 Instructor for “Content Analysis” for graduate students at the University of Chicago.
- 2012-15 Instructor for “Internet and Society,” technical, policy, cultural and social issues associated with the rise of the Internet.
- 2013 Co-instructor for “Do Ideas Evolve?” with Jacob Foster, sponsored by the Mellon Foundation’s Center for Disciplinary Innovation at the Franke Institute of Humanities.
- 2009 Instructor for short-course on “Social and Semantic Networks” at the University of Trento Summer School on *Networks and Innovation*.
- 2007-11 Instructor for “Social Structure and Change,” an introduction to the empirical content of sociology for undergraduate sociology majors.

- 2005-11 Instructor for “The Sociology of Science” and “Introduction to Science Studies” for graduates and undergraduates at the University of Chicago.
- 2004-08 Instructor for “Self, Culture and Society,” core undergraduate course on classics of political economy at the University of Chicago.
- 2000,05 Instructor for “Work, Organization, and Society” at Stanford University and the University of Chicago.
- 1999 Teaching Assistant to Mark Granovetter, “Economic Sociology,” Stanford University. Taught section and graded.
- 1999 Teaching Assistant to W. Richard Scott, “Organizations and Public Policy,” Stanford University. Taught section, gave invited lecture, and graded.
- 1996-97 Teaching Assistant to Kathleen Valley, “Negotiations,” Harvard Business School. Graded and administered experiments.
- 1993-94 Teaching Assistant to F. Kent Nielsen, “History and Philosophy of Science” and “Philosophy 101,” Brigham Young University. Gave invited lectures and graded.
- 1992-93 Co-founder, Executive Director and Faculty Member, Utah High School for the Performing and Fine Arts, Orem, Utah. Created academic program and curricula; taught classes in social sciences, established school’s financial policies.

## **MENTORING**

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### Post-doctoral:

Jacob Gates Foster (2014) UCLA; Aaron Gerow (2016) University of London, Goldsmiths; Feng Shi (2016) UNC Chapel Hill; Nandana Sengupta (2017) Azim Premji University; Valentin Danchev (2018) Stanford University; Lingfei Wu; Alexander Belikov, Molly Lewis, Shahab Asoudeh.

### Doctoral:

Pedro Aceves\* (2018) Boconi School of Business; James Murphy (2018); Chris Graziul (2016) University of Chicago; Misha Teplitskiy\* (2016) Harvard University; Peter McMahan\* (2016) McGill University; Craig Tutterow\* (2016) LinkedIn; Monica Lee (2015) Facebook; Jae-Mahn Shim (2013) City University of Seoul; Zack Kertcher (2009) Notre Dame University; Frank Smith (2006) University of Melbourne. \*Chair

### Masters:

Reid McIlroy (2018); Rodrigo Valdez (2018); Julian McLellan (2018); Patrick van Kessel (2012); Kira Wilpone-Jordan (2012); Rachel Pierson (2012); Nolan Philips (2010); Allyson Grennille (2008); Kathryn McLellin (2007); Yven Lillian Destin (2007); Emily Mannix Wanderer (2006).

### Undergraduates:

Jasmine Mithani (2017, Gender Studies); Susanna Tuan (2016); Nataly Rios (2016); Bryce Peppers (2016); Sam Taylor (2016); Sophia Rosenfeld (2016); Simone Aldredge (2015, Law & Letters); Gaelle Sharma (2014, HiPSS); Daniel Benner (2014, HiPSS); Anna Stapleton (2014); Bradford Rogers (2014); Emma Cervantes (2014); Hans Glick (2014); Edgar Quintana (2014); Isaac Dalke (2013); Mahmoud Bahrani (2012); Sally Lanar (2011); Ariel Weiser (2010); Basil Katz (2006, History).

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#### PROFESSIONAL SERVICE

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- 2016 International Symposium on Science of Science (co-organizer), Library of Congress, Washington DC, USA. March 2016. (<http://icss.ist.psu.edu/>)
- 2016 Models of Science, Technology and Innovation, National Academy of Sciences (scientific advisor), Washington, DC, USA. May 2016 (<http://modsti.cns.iu.edu>)
- 2015 Quantifying Science (co-organizer with Dashun Wang), (CCS'15 satellite) Tempe, AZ, USA. October 2015 (<http://dashunwang.com/workshop/qs-ccs15/>)

Reviewer: *Science*, *Nature*, *Proceedings of the National Academy of Sciences*, *American Journal of Sociology*, *American Sociological Review*, *Social Studies of Science*, *Bulletin of Science & Technology Studies*, *PLOS ONE*.

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#### COMMUNITY SERVICE

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- 2017— Media Arts & Design Committee, University of Chicago
- 2017— Board of Computing Activities and Services (BCAS), University of Chicago
- 2016— Advisory Board, Neubauer Collegium for Culture & Society, University of Chicago
- 2014— myCHOICE (CHicago Options-In-Careers Empowerment) Steering Committee, Biological Sciences Division, University of Chicago
- 2016— “What’s Next?” Committee, Sociology Department, University of Chicago
- 2016— Member, Search Committee, Data Science Initiative, Biological Sciences Division
- 2016— Member, Search Committee, Booth School of Business, Organizations & Markets Group
- 2016-17 Member, Future of the Computation Institute (FCI) Committee, University of Chicago
- 2016— Member, Crerar (Reconstruction) Working Group, University of Chicago
- 2015— Director of Computational Social Science Program, University of Chicago, Division of Social Sciences
- 2015— Member, Board of Computing Activities and Services (BCAS), University of Chicago

- 2015— Member, Media Arts & Design Committee, University of Chicago
- 2013-15 Member (and initial grant co-author), Big Ideas Generator (BIG) Faculty Advisory Committee
- 2013-16 Director of Undergraduate Studies, University of Chicago Department of Sociology
- 2012-13 Webpage Committee member, University of Chicago Department of Sociology
- 2012 Chair, committee for NetSci Satellite Symposium on Networks: the Science of Science and Innovation
- 2011-13 Research Computing Faculty Oversight Committee, University of Chicago
- 2011 Chair selection committee, Committee on Conceptual and Historical Studies of Science (chair)
- 2010 Faculty Search Committee, University of Chicago Department of Sociology
- 2010-12 Bamboo Faculty Advisory Board, Bamboo Project at the University of Chicago (funded by the Mellon Foundation).
- 2010-12 Webpage Committee Chair, University of Chicago Department of Sociology
- 2010 Acting undergraduate program chair, Department of Sociology, University of Chicago.
- 2007— Assisting Chicago Biomedical Consortium (CBC) evaluate its \$300 million dollar initiative supporting collaborative biomedical research between the University of Chicago, Northwestern, and University of Chicago in Illinois.
- 2007 Richard Saller Dissertation Prize Selection Committee, University of Chicago Division of Social Sciences.
- 2006— Faculty Advisory Committee to UChicagoTech, University of Chicago's Office of Technology & Intellectual Property.
- 2006-08 College Council, University of Chicago.
- 2006-08 Webpage Committee, University of Chicago Department of Sociology.
- 2005-08 Associate Editor, *American Journal of Sociology*.
- 2006,11 Chair Selection Committee, University of Chicago Department of Sociology.
- 2005 Harper and Mellon Fellow Selection Committee, University of Chicago Division of Social Sciences.
- 2005 Small Grants Selection Committee, University of Chicago Division of Social Sciences.
- 2004-05 Faculty Search Committee Member, University of Chicago Department of Sociology.
- 2002-03 Faculty Search Committee Member, Stanford Department of Sociology.



- 2001-02 Department Seminar Committee Co-Chair, Stanford Department of Sociology.
- 2000-01 Co-President of the Associated Sociology Graduate Students (ASGS) at Stanford University (department student organization).
- 1999-00 Graduate Admissions Committee Member, Stanford Department of Sociology.

**PROFESSIONAL MEMBERSHIPS**

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- 2006— Member, American Association for the Advancement of Science (AAA)
- 2006— Member, Society for the Social Study of Science (4S)
- 1997— Member, American Sociological Association: Science, Knowledge and Technology; Mathematical Sociology; Communication & Information Technology; Economic Sociology; Organizations, Occupations and Work Section memberships.
- 1996-04 Member, Academy of Management Association: Organization and Management Theory and Organizational Behavior Section memberships.

**RESEARCH AND TEACHING INTERESTS**

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Augmented, artificial and collective intelligence; innovation; science of science; complex systems; sociology of knowledge; computational social science; empirical epistemology; science and technology policy; data science; science, technology and society; history and philosophy of science; sociology of health/medicine; organizations; economic sociology; sociology of work; inequality; qualitative and quantitative methods—fieldwork, social & semantic embeddings and networks, content analysis, databases, natural language processing, machine learning.

**PERSONAL INFORMATION**

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Age 49, married (Jeannie Elizabeth Young Evans).  
Hobbies: 4, ages 22, 20, 16 and 11.