

## Damon M. Centola

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### Education

Ph.D. Sociology, Cornell University, 2006  
Thesis: *Simple Models of Collective Behavior*  
MA Sociology, Cornell University, 2004  
BA Philosophy/Logic, Marlboro College, 1997, *summa cum laude*

### Appointments

2013- Associate Professor, Annenberg School for Communication, University of Pennsylvania  
Director, Network Dynamics Group  
Faculty, School of Engineering  
Faculty, Warren Center for Network and Data Sciences  
Faculty, Master of Behavioral and Decision Sciences Program  
2008-13 Assistant Professor, Sloan School of Management, M.I.T.  
2006-08 Robert Wood Johnson Scholar in Health Policy, Harvard University  
2001-02 Visiting Scholar, The Brookings Institution

### Research

Computational Social Science, Social Epidemiology, Social Networks, Web-Based Experiments,  
Online Health Policy, Collective Action, Agent Based Modeling

### Awards and Honors

2017 James Coleman Award for Outstanding Article, Rationality and Society Section of the  
American Sociological Association  
2016 Wharton Mack Institute Fellow  
2014-15 Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford University  
2014-15 Fellow, Lenore Annenberg and Wallis Annenberg Endowment for Communication  
2014 US Patent #8713143, "A Method of Creating Social Networks to Facilitate Behavior Change"  
2012 Runner Up, National Leader in American Healthcare Under 40, Robert Wood Johnson  
Foundation  
2012 Kavli Frontiers of Science, National Academy of Sciences  
2011 Leo Goodman Early Career Award, Sociological Methodology Section of the American Sociological  
Association  
2011 Fellow, Institute for Research in the Social Sciences, Stanford University  
2011 Award for Outstanding Article, Mathematical Sociology Section of the American Sociological  
Association  
2010 Fellow, Center for the Study of Society and Organizations, Princeton University  
2010 M.I.T. Prize for Research in Computers and Communications

- 2009 Award for Outstanding Article, Mathematical Sociology Section of the American Sociological Association
- 2006 Award for Outstanding Article, Mathematical Sociology Section of the American Sociological Association
- 2004 Columbia University Visiting Scholar Fellowship
- 2004 NSF EITM Summer Fellow
- 2004 Cornell University Russell Sage Fellowship
- 2002 NSF IGERT Fellowship, Interdisciplinary Training in Nonlinear Systems
- 2000 Santa Fe Institute Summer Fellow

## Grants

- 2017-18 PI, NIH Grant for "Using Social Networks to Improve Scientific Communication about Tobacco Use" (\$50,000, direct)
- 2016-18 PI, Robert Wood Johnson Pioneer Grant for "Improving Medical Decision Making through the Wisdom of Crowds" (\$390,041)
- 2016-19 Co-PI, Swedish Foundation Grant for "Career Development Workshops to Promote Analytical Sociology" (with Peter Hedstrom, Elizabeth Bruch, and Emily Erikson) (\$109,350 direct)
- 2016-17 PI, Penn Center for Online Learning Course Development Award for "Network Dynamics and Social Behavior" (with Joshua Becker and Natalie Herbert) (\$17,000 direct)
- 2014-17 Co-PI (with Urmimala Sarkar, UCSF), NIH R01 Grant for "Influencing Cervical Cancer Prevention and Detection through Social Media," (\$1,885,685)
- 2014-16 Co-PI (with Christine Dehlendorf, UCSF), Hewlett Foundation Grant for "Effects of Peer Influence on Long-Acting Reversible Contraceptive Use" (\$423,500 direct)
- 2013-14 PI, Annenberg National Health Communication Study Seed Grant for "How Online Networks Impact Health Outcomes" (\$35,000, direct), with Jingwen Zhang, Devon Brackbill, and Sijia Yang.
- 2009-12 PI, James S. McDonnell Foundation Complex Systems Grant for "Experimental Investigations into the Effects of Network Structure on Social Contagions" (\$259,000 direct).
- 2004-05 Co-Investigator (with Michael Macy), NSF Human and Social Dynamics Grant for "Network Topology and the Dynamics of Collective Action" (\$90,946).

## Books

- Centola, Damon. Forthcoming 2018. "How Behavior Spreads: The Science of Complex Contagions" Under advance contract with Princeton University Press.

## Peer-Reviewed Articles

- Becker, Joshua, Devon Brackbill, and Damon Centola. 2017. *Proceedings of the National Academy of Sciences*. "Reply to Bruggeman: Learning is robust to noise in decentralized networks." 114:E9184.
- Becker, Joshua, Devon Brackbill, and Damon Centola. 2017. *Proceedings of the Natural Academy of Sciences*. "Network Dynamics of Social Influence in the Wisdom of Crowds." 114 (26): E5070-E5076
- Zhang, Jingwen et al. 2016. *Preventive Medicine Reports*. "Support or Competition? How Online Social Networks Increase Physical Activity: A Randomized Controlled Trial." (4): 453-458. [TIME](#), [CBS News](#), [US News & World Report](#), [The Wall Street Journal](#)
- Centola, Damon. 2015. *American Journal of Sociology*. "The Social Origins of Networks and Diffusion." 120 (5): 1295-1338.

- 2017 James Coleman Award for Outstanding Article, Rationality and Society Section of the American Sociological Association  
[Science Newsline](#)
- Centola, Damon and Andrea Baronchelli. 2015. *Proceedings of the National Academy of Sciences*. "The Spontaneous Emergence of Conventions: An Experimental Study of Cultural Evolution." 112 (7): 1989-1994.
- 2015 Selected as one of "Stellar Seven" by the section on Communication, Information, and Media Sociology, American Sociological Association  
[Washington Post](#), [Chicago Tribune](#), [NPR Newsworks](#), [Huffington Post](#), [Phys.org](#), [Daily Mail](#)
- Zhang, Jingwen et al. 2015. *Data In Brief*. "Identifying the effects of social media on health behavior: Data from a large-scale online experiment." (5): 453-457.
- Zhang, Jingwen et al. 2015. *Preventive Medicine Reports*. "Efficacy and causal mechanism of an online social media intervention to increase physical activity: Results of a randomized controlled trial." (2): 651-657.  
[NPR Newsworks](#), [University Herald](#), [Tech Times](#), [The Economic Times](#)
- Centola, Damon and Arnout van de Rijt. 2014. *Social Science and Medicine*. "Choosing Your Network: Social Preferences in an Online Health Community." 125: 19-31.
- Teyhen, D., et al. 2014. *Mil. Med.* "Incentives to Create and Sustain Healthy Behaviors: Technology Solutions and Research Needs." (179) 12:1419.
- Teyhen, D., et al. 2014. *JOSPT*. "Key Enablers to Facilitate Healthy Behavior Change." (44) 378-387.
- Centola, Damon. 2013. *Circulation*. "Social Media and the Science of Health Behavior." (127) 2135-2144.
- Centola, Damon. 2013. *Rationality and Society*. "Homophily, Networks, and Critical Mass: Solving the Start-up Problem in Large Group Collective Action." (25) 3-40.
- Centola, Damon. 2013. *Journal of Statistical Physics*. "A Simple Model of Stability in Critical Mass Dynamics." 151 (1) 238-253
- Centola, Damon. 2011. *Science*. "An Experimental Study of Homophily in the Adoption of Health Behavior." 334:1269-72.  
[CNN](#), [La Repubblica](#)
- Centola, Damon. 2010. *Science*. "The Spread of Behavior in an Online Social Network Experiment." 329:1194-7.
- 2011 Award for Outstanding Article in Mathematical Sociology, American Sociological Association
  - 2011 Award for Outstanding Contribution to Sociological Methodology, American Sociological Association  
[New York Times](#), [Wired](#)
- Centola, Damon. 2008. *Journal of Mathematical Sociology*. "Failure in Complex Networks." 33(1): 64-68.
- Centola, Damon and Michael Macy. 2007. *American Journal of Sociology*. "Complex Contagions and the Weakness of Long Ties." 113: 702-34.
- 2009 Award for Best Publication in Mathematical Sociology, American Sociological Association
  - Reprinted 2012 in *Small Worlds Research*, by Sebastian Schnetzler. New York: Russell Sage Press.
- Centola, Damon, Juan Carlos Gonzalez-Avella, Victor Eguiluz, and Maxi San Miguel. 2007. *Journal of Conflict Resolution*. "Homophily, Cultural Drift, and the Co-Evolution of Cultural Groups." 51: 905-929.  
[PC World](#)
- Centola, Damon, Victor Eguiluz, & Michael Macy. 2007. *Physica A*. "Cascade Dynamics of Complex Propagation." 374: 449-456.
- Centola, Damon, Robb Willer, and Michael Macy. 2005. *American Journal of Sociology*. "The Emperor's Dilemma: A Computational Model of Self-Enforcing Norms." 110(4):1009-40.
- 2006 Award for Best Publication in Mathematical Sociology, American Sociological Association
  - Reprinted 2012 in *Small Worlds Research*, by Sebastian Schnetzler. New York: Russell Sage Press.

## Book Chapters

- Zhang, Jingwen and Damon Centola. Forthcoming. "How Social Networks Shape Social Comparison," in *Social Comparison, Judgment & Behavior*, edited by Jerry Suls. New York: Oxford University Press.
- Douglas Guilbeault, Joshua Becker and Damon Centola. Forthcoming. "Complex Contagions: A Decade in Review," in *Spreading Dynamics in Social Systems*, edited by Yong Yeol Ahn and Sune Lehmann. New York: Springer Nature.
- Centola, Damon and M. Macy. 2005. "Social Life in Silico: The Science of Artificial Societies," in *The Handbook of Group Processes*, edited by Susan Whelan. New York: Russell Sage Press.

## Op-Ed and Commentary

- Centola, Damon. 2015. "Controlling Public Opinion: What the Debate over 'The Dress' Reveals." *The Conversation*. April 07 Issue.

## Patents and Technologies

- 2014 "Establishing A Social Network" (Inventor, US Patent# 8713143)  
 2002 "Net Logo" Agent Based Modeling Environment (Developer, Release 1.0)

## Courses

- Computational Social Science: Sociology in the 21<sup>st</sup> Century
- Agent Based Modeling
- Designing Internet Experiments
- Computational Methods: Models and Data
- Artificial Societies
- Networks: Theory, Data, and Policy
- Social Networks and Complex Systems
- System Dynamics (MBA)
- Collective Action and Collective Behavior
- Social Media and Social Dynamics
- New Methods for Studying Population Health
- Web-Based Social Research
- Social Epidemiology

## Invited Talks and Keynote Addresses

- UCSF, PRISM Conference, December 2017
- NYU, Center for Data Science, December 2017
- University of Chicago, Computational Social Science Workshop, November 2017
- Penn-CMU, Roybal Center on Behavioral Economics and Health Annual Meeting, October 2017
- (Keynote) cSCAN, Glasgow, Scotland, October 2017
- Santa Fe Institute, New York, July 2017
- Analytical Sociology Workshop, Stockholm, Sweden, June 2017
- UC Davis, Re-computing Social Sciences Workshop, May 2017
- (Keynote) Society for Adolescent Health and Medicine, New Orleans, March 2017
- UCLA, California Center for Population Research, February 2017
- Harvard, GSE, February 2017
- Drexel, Department of Psychology, January 2017
- Penn, Behavioral Economics and Health Symposium, December 2016
- UCSF, Center for Vulnerable Populations, December 2016

(Keynote) American Heart Association Annual Innovation Forum, Chicago, November 2016  
(Keynote) Social Informatics 2016, Seattle, November 2016  
Penn-CMU, Roybal Center on Behavioral Economics Annual Meeting, October 2016  
Penn, Psychology and Evolutionary Biology, October 2016  
Princeton, Department of Sociology, October 2016  
Yale, YINS Workshop, September 2016  
Stanford, Department of Psychology, July 2016  
(Keynote) Norms, Actions and Games Conference, Toulouse, June 2016  
WZB Berlin Science Center, Berlin, June 2016  
Sorbonne, Paris, June 2016  
Institute for Advanced Study, Sweden, June 2016  
Cornell, Department of Communications, April 2016  
Duke, Department of Sociology, April 2016  
(Keynote) Center for Mathematical Sciences Annual Symposium, Auckland, NZ, February 2016  
(Keynote) AAI & World Wide Web and Population Health (W3PHI), February 2016  
Northwestern, Kellogg, January 2016  
Microsoft Research, Redmond, WA, January 2016  
Penn, Language and Cultural Evolution Workshop, December 2015  
Penn, Health Communication Speaker Series, December 2015  
Penn, Perelman School of Medicine, December 2015  
Penn, Elihu Katz Symposium, November 2015  
Penn, Warren Center for Network and Data Sciences, October 2015  
Colby, Sociology Seminar, October 2015  
Rutgers, Center for Cognitive Science, September 2015  
ICA Panel on Computational Social Science, Puerto Rico, May 2015  
Northwestern, Institute on Complex Systems, May 2015  
USC, Gould School of Law, April 2015  
Stanford, Psychology Department, April 2015  
Stanford, Media X, March 2015  
Stanford, Center for Advanced Study in the Behavioral Sciences, February 2015  
Northeastern, Network Science Seminar, February 2015  
(Keynote) Center for Mathematical Sciences Annual Symposium, Auckland, NZ, December 2014  
Columbia, Department of Sociology, Columbia University, November 2014  
NIH, National Cancer Institute, Shady Grove, MD, November 2014  
Berkeley, Department of Sociology, October 2014  
(Keynote) Johns Hopkins, Bloomberg School of Public Health Symposium, October 2014  
Cornell, Computational Social Science Seminar, September 2014  
Stanford, Symposium on Computational Social Science, August 2014  
Penn, Wharton School, August 2014  
Microsoft, New York City, June 2014  
McDonnell Foundation, Complex Systems Scholars Symposium, May 2014  
Penn, Department of Sociology, April 2014  
Stony Brook, Institute for Advanced Computational Science, April 2014  
UCLA, Institute for Pure and Applied Mathematics, January 2014  
Berkeley, Simons Center for the Theory of Computing, November 2013  
Harvard, U.S.-China Health Summit, October 2013  
Penn, Behavioral Ethics Seminar, Philosophy Department, October 2013  
Penn, Decision Process Seminar, Wharton School, October 2013  
(Keynote) R.I.T. Big Data Conference, October 2013  
Princeton, NIH RAPIDD Workshop, Epidemiology and Networks, October 2013  
ASA, Web-Based Social Science Forum, August 2013  
Apple, Cupertino, CA, June 2013  
UCSF, Center for Vulnerable Populations, UCSF, May 2013

Scott & White Healthcare, Austin, TX, May 2013  
Harvard, Causal Inference Conference, May 2013  
U.S. Surgeon General's Office, Program for Health Innovation, April 2013  
M.I.T., Future ICT Conference, February 2013  
M.I.T., Plenary Speaker, Future of Health and Wellness, February 2013  
Yale, School of Public Health, January 2013  
National Academy of Sciences, Kavli Frontiers of Science Symposium, December 2012  
Penn, Annenberg School of Communications, December 2012  
Northeastern, Complex Systems Seminar Series, October 2012  
Duke Medical School, October 2012  
Johns Hopkins Medical School, October 2012  
Yale, Sociology Department, September 2012  
Boston U., Health Policy Institute, September 2012  
Boston U., School of Management, May 2012  
M.I.T., Learning Information Decision Sciences Seminar, May 2012  
Santa Fe Institute, Science Board Symposium, May 2012  
Stanford, Demography and Population Biology, August 2011  
Stanford, Research on Algorithms and Incentives in Networks Seminar, June 2011  
Columbia, ISERP Seminar, May 2011  
Stanford, Economic Networks Seminar, May 2011  
Stanford, IRISS Board of Trustees, May 2011  
M.I.T., Europe Conference, Vienna, Austria, March 2011  
U. of Chicago, Graduate School of Business, March 2011  
Princeton, Department of Sociology, November 2010  
M.I.T., Industrial Liaison Program, October 2010  
ISI Foundation, Complex Systems Lab, Torino, Italy, June 2010  
ESCP Europe Business School, May 2010  
U. of Maryland, Center for Scientific Computation & Mathematical Modeling, April 2010  
(Keynote) Warwick Medical School, Health Sciences Research Institute, March 2010  
Warwick Center for Complex Systems, March 2010  
Harvard Business School, February 2010  
Northeastern, Department of Physics, February 2010  
John Snow, Inc., December 2009  
NYU Stern, September 2009  
Microsoft Research, July 2009  
Institute for Cross-Disciplinary Physics and Complex Systems, July 2009  
M.I.T., Media Lab, June 2009  
M.I.T., Engineering Systems Design Group, May 2009  
Stanford, Department of Sociology, April 2009  
Princeton, Woodrow Wilson School, April 2009  
Berkeley, Department of Sociology, April 2009  
Harvard, Kennedy School of Government, April 2009  
M.I.T., Organization Studies Group, April 2009  
Harvard, Berkman Center / Harvard Law School, April 2009  
M.I.T., Sloan School of Management, February 2009  
M.I.T., Industrial Liaison Program, December 2008  
Princeton, Economic Sociology Workshop, November 2008  
Stanford, Networks Seminar, October 2008  
M.I.T., Laboratory for Information and Decision Sciences, October 2008  
Harvard, Graduate School of Education, May 2008  
Harvard, Graduate School of Education, February 2008  
Stanford, Graduate School of Business, January 2008  
M.I.T., Sloan School of Management, January 2008

Northwestern, Department of Sociology, December 2007  
 NYU, Department of Sociology, December 2007  
 U. of Wisconsin, Department of Sociology, Madison, December 2007  
 Harvard, Workshop on Applied Statistics, October 2007  
 Harvard, Culture and Social Analysis Workshop, October 2007  
 Mediterranean Institute for Advanced Studies, August 2007  
 M.I.T., Economic Sociology Seminar, September 2006  
 Santa Fe Institute, July 2006  
 Princeton, Complex Systems Workshop, May 2006  
 Columbia, Collective Dynamics Group, September 2005  
 European Science Foundation International Meeting on Physics of Risk, November 2004

## Selected Conference and Working Group Presentations

- "Collective Intelligence in Medical Decision Making", IGNITE Talk, RWJF Pioneer Gathering, NYC, October 2016
- "Hacking the System of Networked Social Influence," Wharton School, University of Pennsylvania, December 2015
- "Spontaneous Social Conventions," Analytical Sociology Conference, Cambridge, MA, June 2015.
- "Emergent Social Networks," ASA Mathematical Sociology Regular Session, Denver, August 2012.
- "Dynamics of Emergent Social Structure," INAS, Columbia University, June 2012.
- "New Experiments on Social Behavior," Economic Sociology Working Group, M.I.T. November 2009.
- "Free Riding and The Stability of Collective Action" ASA Invited Session on Future Directions in Mathematical Sociology, San Francisco August 2009.
- "Dynamics of Diffusion on Social Networks," ASA Invited Session on Networks, San Francisco August 2009.
- "Diffusion and Network Dynamics," BCNet Workshop: Trends and Perspective in Complex Networks, Barcelona, Spain December 2008.
- "New Theory and Experiments on the Diffusion of Behavior," DIMACS Working Group on Social and Biological Contagion, Rutgers, NJ November 2008.
- "Diffusion of Health Behavior: A Social Network Experiment," Robert Wood Johnson Annual Meeting, Aspen, May 2008.
- "New Theory and Experiments in Diffusion Studies," American Sociological Association Annual Meeting, New York City, August 2007.
- "An Experimental Study of Social Diffusion," Robert Wood Johnson Annual Meeting, Aspen, May 2007
- "New Approaches to Diffusion on Social Networks," Robert Wood Johnson Seminar Series, Harvard School of Public Health, March 2007
- "Empirical Implications of Mathematical Models in Sociology," Research Group on Social Epidemiology, Harvard School of Public Health, November 2006.
- "Free Riding and the Strength of Weak Incentives," Inter-Ivy Sociology Conference, Cornell University, March 2006.
- "Complex Contagions and the Weakness of Long Ties," First International Workshop on Games, Networks, and Cascades, New York City, October 2005.
- "Social Networks and Collective Action," Cornell University Sociology Conference, Ithaca, NY, October 2004.
- "Purposive, Solidary, and Instrumental Incentives in the Mobilization of American Social Groups" (w/Matt Grossman), Empirical Implications of Theoretical Models (EITM), NSF Workshop, Duke University, July 2004.
- "The Stability of Cultural Diversity on Dynamic Networks," First International Winter School on Physics of Socio-Economic Systems, University of Konstanz, February 2004

## Graduate Student Advising

Chair	Soojong Kim	Annenberg	Current	
Member	David Larochelle	Annenberg	Current	
Member	Natalie Herbert	Annenberg	Current	
Member	Sijia Yang	Annenberg	Current	
Chair	Joshua Becker	Annenberg	Current	
Chair	Devon Brackbill	Annenberg	2016	Chief Data Scientist
Member	Jingwen Zhang	Annenberg	2016	Asst. Prof. UC Davis

## Departmental and University Service

### University of Pennsylvania

2017	Ph.D. Admissions Committee
2015	Tenure Review Committee
2015	Speakers Series Committee
2014	Co-Organizer (with Shawndra Hill), Warren Center Symposium
2013	Co-Organizer, Warren Center Distinguished Lecture Series
2013	University Committee on Research (Alternate)

### M.I.T.

2012-13	Member, M.I.T. Committee on Curriculum Design
2012-13	Co-Organizer (with Ozge Karanfil), System Dynamics Society Colloquium
2011-12	Member, M.I.T. Faculty Reappointment Subcommittee
2011-12	Scientific Advisory Committee, Workshop on Information and Decision in Social Networks
2008-12	Organizer, Social Dynamics Seminar, M.I.T./Harvard University
2009-12	System Dynamics and Economic Sociology Ph.D. Recruitment Committees

## Professional Service

2017-	IC2S2 Program Committee Member
2017-	Mathematic Sociology Awards Committee ASA
2017-	Co-Organizer, Analytic Sociology Annual Symposium, Stockholm, Sweden, June 2017 (with Peter Hedstrom, Emily Erikson and Elizabeth Bruch)
2015-	Section Founder, Analytical Sociology, ASA (with Emily Erikson, Peter Hedstrom, and Elizabeth Bruch)
2015-	Series Editor, Princeton University Press Series in Analytical Sociology
2014	Program Committee, International Conference on Social Informatics (DYAD)
2013-15	Elected Council Member, Mathematical Sociology Section, American Sociological Association
2012-	Editorial Board, <i>Journal of Mathematical Sociology</i>
2012	Scientific Advisory Committee, ECCS'12 Data-Driven Modeling of Contagion Processes
2012	ASA Mathematical Sociology Section Award Committee Member
2011-13	Consulting Editor, <i>American Journal of Sociology</i>
2011	Organizer, Regular Sessions on Social Networks: Session on Homophily and Tie Dynamics Session on New Theoretical and Empirical Approaches Session on Norms and Networks Session on Organizational and Economic Networks
	ASA Annual Meeting, Las Vegas, NV
2007	Organizer, Robert Wood Johnson Brown Bag Seminar Series, Harvard University
2005	Co-Organizer, International Workshop on "Games, Networks, and Cascades," New York City (with Michael Macy and Vincent Buskens)



2003 Organizer, Interdisciplinary Seminar on Network Dynamics, Cornell University

## Reviewer

*Science, Nature, PNAS, American Journal of Sociology, American Sociological Review, American Journal of Epidemiology, Computational Management and Organization Theory, Organization Science, Social Forces, Rationality & Society, Journal of the European Physical Society, JASSS, Journal of Mathematical Sociology, PLoS One, National Science Foundation, The Lancet, The National Academies Institute of Medicine*