

# MARK NEWMAN FRS

ANATOL RAPOPORT DISTINGUISHED UNIVERSITY PROFESSOR  
DEPARTMENT OF PHYSICS AND CENTER FOR THE STUDY OF COMPLEX SYSTEMS  
UNIVERSITY OF MICHIGAN

Department of Physics  
450 Church Street  
Ann Arbor, MI 48109-1040

Phone: (734) 764-4437  
Email: mejn@umich.edu  
Web: www.umich.edu/~mejn

---

## EDUCATION

1988            B.A., physics, University of Oxford  
1991            Ph.D., physics, University of Oxford

## EMPLOYMENT

1991-1994        Postdoctoral Fellow, Department of Physics, Cornell University  
1994-1996        Research Associate, Cornell Theory Center, Cornell University  
1996-1998        Postdoctoral Fellow, Santa Fe Institute  
1998-2002        Research Professor, Santa Fe Institute  
2002-2005        Assistant Professor, Department of Physics, University of Michigan  
2005-2007        Associate Professor, Department of Physics, University of Michigan  
2007-present     Full Professor, Department of Physics, University of Michigan  
2007-present     Professor, Center for the Study of Complex Systems, University of Michigan  
2008-2015        Paul Dirac Collegiate Professor of Physics, University of Michigan  
2015-present     Anatol Rapoport Distinguished University Professor, University of Michigan

## VISITING POSITIONS

2000            Visiting Professor, Center for Applied Mathematics, Cornell University  
2002-present     External Faculty member, Santa Fe Institute  
2006            Visiting Professor, McCormick School of Engineering, Northwestern University  
2008-2009        Visiting Professor, Santa Fe Institute  
2016            Visiting Professor, Rudolf Peierls Centre for Theoretical Physics, University of Oxford  
2016            Visiting Professor, Isaac Newton Institute for Mathematical Sciences, University of Cambridge  
2022            Visiting Professor, Simons Institute for the Theory of Computation, UC Berkeley

---

## RECENT FUNDED RESEARCH

2020-2023        National Science Foundation, \$329,712: Structure and function in large-scale complex networks  
2017-2020        National Science Foundation, \$294,514: Broad-scale modeling of complex networks  
2014-2017        National Science Foundation, \$265,000: Large-scale structure in complex networks

2012–2016	Defense Advanced Research Projects Agency, \$2.9 million: Statistical inference for detecting structures and anomalies in networks
2011–2014	National Science Foundation, \$320,000: Large-scale structure in complex networks
2009–2011	James S. McDonnell Foundation, \$417,576: Statistical inference and machine learning for complex networks
2008–2011	National Science Foundation, \$150,000: The structure and dynamics of social networks and other networked systems
2004–2007	National Science Foundation, \$268,421: The structure and dynamics of social networks and other networked systems
2002–2008	James S. McDonnell Foundation, \$408,000: Networks and contagion among computers and people
2001–2004	National Science Foundation, \$144,236: The structure and dynamics of social networks and other networked systems

#### AWARDS AND HONORS

2023	Leo P. Kadanoff Prize, American Physical Society
2022	Fellow of the Royal Society
2021	Euler Award, Network Science Society
2021	Clarivate Citation Laureate
2018	Fellow of the Network Science Society
2016	Guggenheim Fellow
2016	Simons Fellow in Theoretical Physics
2014	ISI Lagrange Prize 2014
2014	Fellow of the American Association for the Advancement of Science
2014	Top 1% Highest Cited Physicists in the world, Thomson-Reuters Science Citation Index
2013	Senior Fellow, Michigan Society of Fellows
2012	Excellence in Education Award, University of Michigan
2011	Faculty Recognition Award, University of Michigan
2008	Gold Prize of the Geographic Association for <i>The Atlas of the Real World</i>
2007	Fellow of the American Physical Society
2004	Robert D. and Janet E. Neary Research Award, University of Michigan
2003	Harold C. Earley Faculty Research Award, University of Michigan
1992	NATO Postdoctoral Fellow
1991	Lindemann Trust Fellow

#### HONORARY LECTURESHIPS

2023	Henry Russel Lecturer, University of Michigan
2018	Myhill Lectures in Mathematics, University of Buffalo
2016	The Gentry Lectures, Wake Forest University
2016	Turing Lecture, Alan Turing Institute, London
2015	Sandia Distinguished Lecture, Sandia National Laboratory, Albuquerque
2013	Badger Lecture in Network Medicine, Harvard University
2013	Distinguished Lecture on Scientific Computing, Simon Fraser University
2011	Hitachi Distinguished Lecture, University of Oklahoma
2011	Ockham Lecture, Oxford University

2010 Ulam Lectures, Santa Fe Institute  
 2009 Distinguished Lecture on Network Science, Pennsylvania State University  
 2008 NICO Distinguished Lecture, Northwestern University  
 2008 NSF ADVANCE Distinguished Lecture, Kansas State University  
 2007 John Wiley Jones Distinguished Lecture in Science, Rochester Institute of Technology

#### PROFESSIONAL SOCIETIES

Fellow Royal Society of London  
 Fellow American Physical Society  
 Fellow American Association for the Advancement of Science  
 Fellow Network Science Society  
 Member Society for Industrial and Applied Mathematics

#### CURRENT AND FORMER STUDENTS AND POSTDOCS

	<b>Degree/Position</b>	<b>Date(s)</b>	<b>Current position</b>
Michelle Girvan	Ph.D.	2003	Professor, University of Maryland
Michael Gastner	Ph.D.	2005	Assistant Professor, Yale-NUS College, Singapore
Petter Holme	Postdoc	2005–2006	Professor, Aalto University
Juyong Park	Ph.D.	2006	Associate Professor, KAIST, South Korea
Elizabeth Leicht	Ph.D.	2008	Research division, Facebook Corporation
Gourab Ghoshal	Ph.D.	2009	Professor, University of Rochester
Bethany Percha	M.P.H.	2010	Assistant Prof., Mount Sinai School of Medicine
Brian Karrer	Ph.D.	2011	Research division, Facebook Corporation
Brian Ball	Ph.D.	2014	Dotomi Inc.
Travis Martin	Ph.D.	2016	Google Inc.
Xiao Zhang	Ph.D.	2017	Amazon A9 Inc.
Maria Riolo	Postdoc	2015–2018	Postdoctoral Fellow, Santa Fe Institute
George Cantwell	Ph.D.	2020	Postdoctoral Fellow, Santa Fe Institute
Jean-Gabriel Young	Postdoc	2018–2020	Assistant Professor, University of Vermont
Alec Kirkley	Ph.D.	2021	Assistant Professor, University of Hong Kong
Max Jerdee	Ph.D. candidate	2022–	
Austin Polanco	Ph.D. candidate	2023–	

#### SERVICE AND ADMINISTRATION

2023–2024 Faculty Search Committee, Michigan Physics  
 2023–2024 Faculty Search Committee, Michigan Complex Systems  
 2023–2024 Graduate Admissions Committee, Michigan Physics  
 2023 External Review Committee, American Physical Society/Physical Review E  
 2023 Prize Committee, Network Science Society  
 2021–2022 Faculty Search Committee (chair), Michigan Physics  
 2021 Promotion Evaluations Committee, Office of the Provost, University of Michigan  
 2020–2021 Graduate Admissions Committee, Michigan Physics  
 2020–2021 Curriculum Committee, Michigan Physics  
 2020 Promotion Evaluations Committee, Office of the Provost, University of Michigan  
 2019–2020 Faculty Search Committee (chair), Michigan Complex Systems

2019–2020 Curriculum Committee, Michigan Physics  
 2019 Distinguished University Professorship committee, University of Michigan  
 2019 Promotion Evaluations Committee, Office of the Provost, University of Michigan  
 2018–2019 Graduate admissions committee, Michigan Physics  
 2017–2018 Faculty search committee (chair), Michigan Complex Systems  
 2017–2018 Distinguished University Professorship committee, University of Michigan  
 2016–2017 Graduate awards committee, Michigan Physics  
 2015–2016 Faculty search committee, Michigan Complex Systems  
 2015 Promotion Evaluations Committee, Office of the Provost, University of Michigan  
 2014–2015 Faculty search committee, Michigan Complex Systems  
 2014–2015 Graduate admissions committee, Michigan Physics  
 2014 Faculty Recognition Awards committee, University of Michigan  
 2013–2014 Faculty search committee, Michigan Complex Systems  
 2013–2014 Colloquium organizer, Michigan Physics  
 2013 International Conference on Network Science (NetSci 2013), program committee  
 2013 Faculty Recognition Awards committee, University of Michigan  
 2013 European Physical Society Outstanding Referee  
 2013 Faculty Grievance Board, University of Michigan  
 2012 Faculty Recognition Awards committee, University of Michigan  
 2012–2013 Faculty search committee, Michigan Complex Systems  
 2012–2013 Faculty search committee, Michigan Physics  
 2012–2013 Third Century Initiative steering committee, University of Michigan  
 2011 Santa Fe Institute Complex Systems Summer School, co-organizer  
 2011–2014 Northwestern University NSF program on complex networks, advisory board  
 2010–2011 SIAM Mathematics Awareness Month, organizing committee  
 2010–2011 Long-range planning committee, Michigan Physics  
 2010–2011 IT committee, Michigan Physics  
 2010–present International Faculty Advisor, University of Michigan  
 2009–2014 Santa Fe Institute Science Board  
 2009–2010 Editorial committee, Michigan Physics  
 2008–present Guest editor, *Proceedings of the National Academy of Sciences*  
 2008–2009 Graduate qualifying exam committee, Michigan Physics  
 2008 American Physical Society Outstanding Referee  
 2008 NSF panel on Foundations for Complex Systems Research in the Physical Sciences  
 2007–2008 Departmental Executive Committee, Michigan Physics  
 2007–2008 Faculty search committee, Michigan Physics  
 2007–2008 Graduate qualifying exam committee, Michigan Physics  
 2007–present International Advisory Board, CABDyN Complexity Center, University of Oxford  
 2005–2006 Faculty search committee (chair), Michigan Physics  
 2005–2006 Faculty search committee (chair), Michigan Complex Systems  
 2005–2006 Graduate qualifying exam committee, Michigan Physics  
 2005–2006 Undergraduate concerns committee, Michigan Physics  
 2005–2006 Computing committee, Michigan Physics  
 2004–2005 Graduate qualifying exam committee, Michigan Physics  
 2003–2004 Graduate qualifying exam committee, Michigan Physics  
 2002–2003 Condensed matter seminar organizer, Michigan Physics  
 Regular tenure and promotion panels

**Refereeing:** American Physical Society Outstanding Referee 2008, European Physical Society Distinguished Referee 2013

Referee for *Nature*, *Nature Physics*, *Science*, *Science Advances*, *Proceedings of the National Academy*, *Physical Review Letters*, *Physical Review B*, *Physical Review E*, *Physical Review X*, *Proceedings of the Royal Society A*, *Proceedings of the Royal Society B*, *Journal of the Royal Society Interface*, *Journal of Statistical Physics*, *Journal of Statistical Mechanics*, *Physica A*, *Physica D*, *Europhysics Letters*, *European Physical Journal B*, *Journal of Physics A*, *Physics Letters A*, *International Journal of Modern Physics C*, *American Journal of Physics*, *Journal of Complex Networks*, *Advances in Complex Systems*, *Complexity*, *PLOS Computational Biology*, *PLOS One*, *Scientific Reports*, *Journal of Theoretical Biology*, *Journal of Machine Learning Research*, *SIAM Journal on Mathematics of Data Science*, *Chaos*, *Physics Reports*, *Reviews of Modern Physics*, *Social Networks*.

## TEACHING

Course	Title	Institution	Year
Physics 406	Statistical and Thermal Physics	University of Michigan	2002
Physics 406	Statistical and Thermal Physics	University of Michigan	2003
Complex Systems 535	Network Science	University of Michigan	2004
Physics 406	Statistical and Thermal Physics	University of Michigan	2004
Complex Systems 535	Network Science	University of Michigan	2005
Complex Systems 511	Theory of Complex Systems	University of Michigan	2006
Physics 406	Statistical and Thermal Physics	University of Michigan	2007
Complex Systems 511	Theory of Complex Systems	University of Michigan	2007
Physics 390	Introduction to Modern Physics	University of Michigan	2008
Complex Systems 535	Network Science	University of Michigan	2009
Physics 390	Introduction to Modern Physics	University of Michigan	2010
Complex Systems 535	Network Science	University of Michigan	2010
Physics 411	Computational Physics	University of Michigan	2011
Complex Systems 535	Network Science	University of Michigan	2011
Physics 411	Computational Physics	University of Michigan	2012
Complex Systems 535	Network Science	University of Michigan	2012
Physics 411	Computational Physics	University of Michigan	2013
Complex Systems 535	Network Science	University of Michigan	2013
Physics 411	Computational Physics	University of Michigan	2014
Complex Systems 535	Network Science	University of Michigan	2014
Physics 390	Introduction to Modern Physics	University of Michigan	2015
Complex Systems 535	Network Science	University of Michigan	2015
Physics 411	Computational Physics	University of Michigan	2017
Complex Systems 535	Network Science	University of Michigan	2017
Physics 411	Computational Physics	University of Michigan	2018
Complex Systems 535	Network Science	University of Michigan	2018
Physics 411	Computational Physics	University of Michigan	2019
Complex Systems 535	Network Science	University of Michigan	2019
Physics 288	Physics of Music	University of Michigan	2020
Complex Systems 535	Network Science	University of Michigan	2020
Physics 288	Physics of Music	University of Michigan	2021
Complex Systems 535	Network Science	University of Michigan	2021
Physics 288	Physics of Music	University of Michigan	2022

Also: Santa Fe Institute Complex Systems Summer School, Santa Fe, New Mexico, Summer 1996, 1998, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2011, 2012, and 2015 as well as occasional other schools.

#### THESIS COMMITTEES

Name	Department	Role	Graduation date
Jaeil Kim	Physics	Member	Winter 2002
Christopher Warren	Physics	Member	Summer 2003
Brett Pearson	Physics	Member	Winter 2004
Michael Gastner	Physics	Chair	Fall 2005
Han Peters	Mathematics	Cognate	Summer 2005
Sudin Bhattacharya	Mechanical Engineering	Member	Summer 2006
Juyong Park	Physics	Chair	Summer 2006
Dongxiao Zhu	Bioinformatics	Member	Summer 2006
Gunes Erkan	Computer Science	Cognate	Summer 2007
Daimian Wang	Physics	Member	Winter 2007
Elizabeth Leicht	Physics	Chair	Summer 2008
Althea Moorhead	Physics	Member	Summer 2008
Sarah Feldt	Physics	Member	Summer 2009
Gourab Ghoshal	Physics	Chair	Fall 2009
Kevin Haworth	Applied Physics	Member	Winter 2009
Jong-Hoon Kim	Epidemiology	Member	Fall 2009
Eva-Marie Proszkow	Physics	Member	Summer 2009
Casey Schneider-Mizell	Physics	Member	Summer 2010
Jane Wang	Applied Physics	Member	Fall 2010
David Adams	Physics	Member	Winter 2011
Eytan Bakshy	School of Information	Cognate	Fall 2011
Shanna Shaked	Applied Physics	Member	Winter 2011
Justin Gillespie	Naval Architecture	Cognate	Winter 2012
Brian Karrer	Physics	Chair	Winter 2012
Kevin Xu	Electrical Engineering	Cognate	Summer 2012
Li Zhang	Physics	Member	Fall 2012
Yunpeng Zhao	Statistics	Cognate	Summer 2012
Navid Dianati	Physics	Member	Winter 2013
Yen Ting Lin	Physics	Member	Summer 2013
Brian Ball	Physics	Chair	Summer 2014
Morgan Parker	Naval Architecture	Cognate	Summer 2014
Maria Riolo	Applied Mathematics	Member	Fall 2014
Adam Sypniewski	Physics	Member	Winter 2014
Daniel Wilcox	Physics	Member	Winter 2015
Pablo Damasceno	Chemical Engineering	Cognate	Summer 2015
Jieshi Fang	Civil Engineering	Cognate	Summer 2015
Travis Martin	Computer Science	Co-chair	Summer 2016
Yuan Zhang	Statistics	Cognate	Summer 2016

Andrew Elliot	Mathematics (Oxford)	External examiner	Winter 2017
Xiao Zhang	Physics	Chair	Summer 2017
Christopher Henry	Epidemiology	Cognate	Summer 2017
Meryl Spencer	Physics	Member	Summer 2018
Leyou Zhang	Physics	Member	Winter 2019
Fang-Yi Yu	Computer Science	Cognate	Spring 2019
Yike Liu	Physics	Member	Spring 2019
Ojan Khatib-Damavandi	Physics	Member	Summer 2019
Harry Richmond	Mathematics	Cognate	Summer 2020
George Cantwell	Physics	Chair	Summer 2020
Andrei Klishin	Physics	Member	Summer 2020
Alec Kirkley	Physics	Chair	Fall 2021
James Coller	Naval Architecture	Cognate	Fall 2022

## PRESS COVERAGE

New York Times, 15 August 2018; The Economist, 18 August 2018; BBC Radio 5, 10 August 2018; Los Angeles Times, 10 August 2018; The Guardian, 9 August 2018; The Times of London, 9 August 2018; The Independent, 9 August 2018; Washington Post, 8 August 2018; New Scientist, 8 August 2018; Boston Globe, 8 August 2018; Washington Post, November 1, 2016; BBC News online, October 21, 2013; Science News, November 7, 2012; Times Higher Education, June 2, 2011; and many others, including Science, Nature, The Lancet, National Public Radio, Chicago Tribune, CNN Television News, Discovery Channel, Atlantic Monthly, Vanity Fair magazine, Esquire magazine, Daily Telegraph, Der Spiegel magazine, ABC News online, Salon.com, and Die Zeit.

---

## PUBLICATIONS

Citation record (August 21, 2023):

	Total citations	Cites per year (since 2018)	h-index
Web of Science	102,187	7,525	86
Google Scholar	236,456	17,394	110

## BOOKS

1. Mark Newman, *The Science of Music*, Amazon KDP (2023).
2. Mark Newman, *Networks*, 2nd edition, Oxford University Press, Oxford (2018).
3. Mark Newman, *Computational Physics*, Createspace Independent Publishing (2012).
4. Daniel Dorling, Mark Newman, and Anna Barford, *The Atlas of the Real World*, Thames & Hudson, London (2008).
5. M. E. J. Newman, A.-L. Barabási, and D. J. Watts, *The Structure and Dynamics of Networks*. Princeton University Press, Princeton (2006).
6. M. E. J. Newman and G. T. Barkema, *Monte Carlo Methods in Statistical Physics*. Oxford University Press, Oxford (1999).

7. J. J. Binney, N. J. Dowrick, A. J. Fisher, and M. E. J. Newman, *The Theory of Critical Phenomena*. Oxford University Press, Oxford (1992).

#### PAPERS IN REFEREED JOURNALS

1. A. Polanco and M. E. J. Newman, Hierarchical core-periphery structure in networks. *Phys. Rev. E* **108**, 024311 (2023).
2. M. E. J. Newman, Efficient computation of rankings from pairwise comparisons. *Journal of Machine Learning Research* **24**, 238 (2023).
3. M. E. J. Newman, Message passing methods on complex networks. *Proc. R. Soc. London A* **479**, 20220774 (2023).
4. S. Fortunato and M. Newman, 20 years of network community detection. *Nature Physics* **18104**, 848–850 (2022).
5. A. Kirkley and M. E. J. Newman, Representative community divisions of networks. *Communications Physics* **5**, 40 (2022).
6. M. E. J. Newman, Ranking with multiple types of pairwise comparisons. *Proc. R. Soc. London A* **478**, 20220517 (2022).
7. K. G. Leyba, J. J. Daymude, J.-G. Young, M. E. J. Newman, J. Rexford, and S. Forrest, Cutting through the noise to infer autonomous system topology. In *Proceedings of the IEEE Conference on Computer Communications (INFOCOM 2022)*, pp. 1609–1618, Institute of Electrical and Electronics Engineers, New York (2022).
8. J.-G. Young, A. Kirkley, and M. E. J. Newman, Clustering of heterogeneous populations of networks. *Phys. Rev. E* **105**, 014312 (2022).
9. G. T. Cantwell, A. Kirkley, and M. E. J. Newman, The friendship paradox in real and model networks. *Journal of Complex Networks* **9**, cnab011 (2021).
10. J.-G. Young, F. S. Valdovinos, and M. E. J. Newman, Reconstruction of plant-pollinator networks from observational data. *Nature Communications* **12**, 3911 (2021).
11. A. Kirkley, G. T. Cantwell, and M. E. J. Newman, Belief propagation for networks with loops. *Science Advances* **7**, eabf1211 (2021).
12. J.-G. Young, G. T. Cantwell, and M. E. J. Newman, Bayesian inference of network structure from unreliable data. *Journal of Complex Networks* **8**, cnaa046 (2021).
13. M. E. J. Newman, G. T. Cantwell, and J.-G. Young, Improved mutual information measure for clustering, classification, and community detection. *Phys. Rev. E* **101**, 042304 (2020).
14. M. A. Riolo and M. E. J. Newman, Consistency of community structure in complex networks. *Phys. Rev. E* **101**, 052306 (2020).
15. M. Newman and C. R. Ferrario, Improved demand curve for food or drug consumption in behavioral experiments. *Psychopharmacology* **237**, 943–955 (2020).
16. G. T. Cantwell and M. E. J. Newman, Message passing on networks with loops. *Proc. Natl. Acad. Sci. USA* **116**, 23398–23403 (2019).
17. M. E. J. Newman, Spectra of networks containing short loops. *Phys. Rev. E* **100**, 012314 (2019).
18. M. E. J. Newman, X. Zhang, and R. R. Nadakuditi, Spectra of random networks with arbitrary degrees. *Phys. Rev. E* **99**, 042309 (2019).



19. G. T. Cantwell and M. E. J. Newman, Mixing patterns and individual differences in networks. *Phys. Rev. E* **99**, 042306 (2019).
20. E. E. Bruch and M. E. J. Newman, Structure of online dating markets in US cities. *Sociological Science* **6**, 219–234 (2019).
21. A. Kirkley, G. T. Cantwell, and M. E. J. Newman, Balance in signed networks. *Phys. Rev. E* **99**, 012320 (2019).
22. M. E. J. Newman, Estimating network structure from unreliable measurements. *Phys. Rev. E* **98**, 062321 (2018).
23. E. E. Bruch and M. E. J. Newman, Aspirational pursuit of mates in online dating markets. *Science Advances* **4**, eaap9815 (2018).
24. M. E. J. Newman, Network structure from rich but noisy data. *Nature Physics* **14**, 542–545 (2018).
25. X. Zhang, C. Moore, and M. E. J. Newman, Random graph models for dynamic networks. *Eur. Phys. J. B* **90**, 200 (2017).
26. M. A. Riolo, G. T. Cantwell, G. Reinert, and M. E. J. Newman, Efficient method for estimating the number of communities in a network. *Phys. Rev. E* **96**, 032310 (2017).
27. M. E. J. Newman, Equivalence between modularity optimization and maximum likelihood methods for community detection. *Phys. Rev. E* **94**, 052315 (2016).
28. M. E. J. Newman and G. Reinert, Estimating the number of communities in a network. *Phys. Rev. Lett.* **117**, 078301 (2016).
29. M. E. J. Newman and A. Clauset, Structure and inference in annotated networks. *Nature Communications* **7**, 11863 (2016).
30. T. Martin, B. Ball, and M. E. J. Newman, Structural inference for uncertain networks. *Phys. Rev. E* **93**, 012306 (2016).
31. P. Zhang, C. Moore, and M. E. J. Newman, Community detection in networks with unequal groups. *Phys. Rev. E* **93**, 012303 (2016).
32. X. Zhang and M. E. J. Newman, Multiway spectral community detection in networks. *Phys. Rev. E* **92**, 052808 (2015).
33. M. E. J. Newman and T. P. Peixoto, Generalized communities in networks. *Phys. Rev. Lett.* **115**, 088701 (2015).
34. X. Zhang, T. Martin, and M. E. J. Newman, Identification of core-periphery structure in networks. *Phys. Rev. E* **91**, 032803 (2015).
35. M. E. J. Newman and T. Martin, Equitable random graphs. *Phys. Rev. E* **90**, 052824 (2014).
36. B. Karrer, M. E. J. Newman, and L. Zdeborová, Percolation on sparse networks. *Phys. Rev. Lett.* **113**, 208702 (2014).
37. T. Martin, X. Zhang, and M. E. J. Newman, Localization and centrality in networks. *Phys. Rev. E* **90**, 052808 (2014).
38. X. Zhang, R. R. Nadakuditi, and M. E. J. Newman, Spectra of random graphs with community structure and arbitrary degrees. *Phys. Rev. E* **89**, 042816 (2014).
39. M. A. Riolo and M. E. J. Newman, First-principles multiway spectral partitioning of graphs. *Journal of Complex Networks* **2**, 121–140 (2014).
40. M. E. J. Newman, Prediction of highly cited papers. *EPL* **105**, 28002 (2014).
41. M. E. J. Newman, Spectral methods for network community detection and graph partitioning. *Phys. Rev. E* **88**, 042822 (2013).

42. M. E. J. Newman and C. R. Ferrario, Interacting epidemics and coinfection on contact networks. *PLOS One* **8**, e71321 (2013).
43. M. E. J. Newman, Community detection and graph partitioning. *Europhys. Lett.* **103**, 28003 (2013).
44. T. Martin, B. Ball, B. Karrer, and M. E. J. Newman, Coauthorship and citation patterns in the Physical Review. *Phys. Rev. E* **88**, 012814 (2013).
45. B. Ball and M. E. J. Newman, Friendship networks and social status. *Network Science* **1**, 16–30 (2013).
46. R. R. Nadakuditi and M. E. J. Newman, Spectra of random graphs with arbitrary expected degrees. *Phys. Rev. E* **87**, 012803 (2013).
47. R. R. Nadakuditi and M. E. J. Newman, Graph spectra and the detectability of community structure in networks. *Phys. Rev. Lett.* **108**, 188701 (2012).
48. M. E. J. Newman, Communities, modules and large-scale structure in networks. *Nature Physics* **8**, 25–31 (2012).
49. B. Ball, B. Karrer, and M. E. J. Newman, An efficient and principled method for detecting communities in networks. *Phys. Rev. E* **84**, 036103 (2011).
50. B. Karrer and M. E. J. Newman, Competing epidemics on complex networks. *Phys. Rev. E* **84**, 036106 (2011).
51. B. Percha, M. E. J. Newman, and B. Foxman, Transmission probabilities and durations of immunity for three pathogenic group B Streptococcus serotypes. *Infection, Genetics, and Evolution* **11**, 1407–1412 (2011).
52. M. E. J. Newman, Complex systems. *Am. J. Phys.* **79**, 800–810 (2011).
53. B. Karrer and M. E. J. Newman, Stochastic blockmodels and community structure in networks. *Phys. Rev. E* **83**, 016107 (2011).
54. B. Karrer and M. E. J. Newman, Random graphs containing arbitrary distributions of subgraphs. *Phys. Rev. E* **82**, 066118 (2010).
55. R. Guimerà, D. B. Stouffer, M. Sales-Pardo, E. A. Leicht, M. E. J. Newman, and L. A. N. Amaral, Origin of compartmentalization in food webs. *Ecology* **91**, 2941–2951 (2010).
56. B. Karrer and M. E. J. Newman, A message passing approach for general epidemic models. *Phys. Rev. E* **82**, 016101 (2010).
57. A. Clauset, C. R. Shalizi, and M. E. J. Newman, Power-law distributions in empirical data. *SIAM Review* **51**, 661–703 (2009).
58. M. E. J. Newman, Random graphs with clustering. *Phys. Rev. Lett.* **103**, 058701 (2009).
59. B. Karrer and M. E. J. Newman, Random graph models for directed acyclic networks. *Phys. Rev. E* **80**, 046110 (2009).
60. G. Ghoshal, V. Zlatic, G. Caldarelli, and M. E. J. Newman, Random hypergraphs and their applications. *Phys. Rev. E* **79**, 066118 (2009).
61. M. E. J. Newman, The first-mover advantage in scientific publication. *EPL* **86**, 68001 (2009).
62. B. Karrer and M. E. J. Newman, Random acyclic networks. *Phys. Rev. Lett.* **102**, 128701 (2009).
63. A. Clauset, C. Moore, and M. E. J. Newman, Hierarchical structure and the prediction of missing links in networks. *Nature* **453**, 98–101 (2008).
64. M. Newman, The physics of networks. *Physics Today*, November 2008, pp. 33–38.
65. B. Karrer, E. Levina, and M. E. J. Newman, Robustness of community structure in networks. *Phys. Rev. E* **77**, 046119 (2008).

66. M. E. J. Newman and G. Ghoshal, Bicomponents and the robustness of networks to failure. *Phys. Rev. Lett.* **100**, 138701 (2008).
67. E. A. Leicht and M. E. J. Newman, Community structure in directed networks. *Phys. Rev. Lett.* **100**, 118703 (2008).
68. M. E. J. Newman, Component sizes in networks with arbitrary degree distributions. *Phys. Rev. E* **76**, 045101 (2007).
69. M. A. Porter, P. J. Mucha, M. E. J. Newman, and A. J. Friend, Community structure in the United States House of Representatives. *Physica A* **386**, 414–438 (2007).
70. E. A. Leicht, G. Clarkson, K. Shedden, and M. E. J. Newman, Large-scale structure of time evolving citation networks. *Eur. Phys. J. B* **59**, 75–83 (2007).
71. G. Ghoshal and M. E. J. Newman, Growing distributed networks with arbitrary degree distributions. *Eur. Phys. J. B* **58**, 175–184 (2007).
72. M. E. J. Newman and E. A. Leicht, Mixture models and exploratory analysis in networks. *Proc. Natl. Acad. Sci. USA* **104**, 9564–9569 (2007).
73. P. Holme and M. E. J. Newman, Nonequilibrium phase transition in the coevolution of networks and opinions. *Phys. Rev. E* **74**, 056108 (2006).
74. C. Moore, G. Ghoshal, and M. E. J. Newman, Exact solutions for models of evolving networks with addition and deletion of nodes. *Phys. Rev. E* **74**, 036121 (2006).
75. M. E. J. Newman, Finding community structure in networks using the eigenvectors of matrices. *Phys. Rev. E* **74**, 036104 (2006).
76. M. T. Gastner and M. E. J. Newman, Optimal design of spatial distribution networks. *Phys. Rev. E* **74**, 016117 (2006).
77. M. E. J. Newman, Modularity and community structure in networks. *Proc. Natl. Acad. Sci. USA* **103**, 8577–8582 (2006).
78. L. Ancel Meyers, M. E. J. Newman, and B. Pourbohloul, Predicting epidemics on directed contact networks. *J. Theor. Bio.* **240**, 400–418 (2006).
79. M. T. Gastner and M. E. J. Newman, The spatial structure of networks. *Eur. Phys. J. B* **49**, 247–252 (2006).
80. B. Foxman, M. Newman, B. Percha, K. K. Holmes, and S. O. Aral, Measures of sexual partnerships: Lengths, gaps, overlaps and sexually transmitted infection. *Sexually Transmitted Diseases* **33**, 209–214 (2006).
81. E. A. Leicht, P. Holme, and M. E. J. Newman, Vertex similarity in networks. *Phys. Rev. E* **73**, 026120 (2006).
82. M. T. Gastner and M. E. J. Newman, Shape and efficiency in spatial distribution networks. *J. Stat. Mech.* **2006**, P01015 (2006).
83. D. Dorling, A. Barford, and M. Newman, Worldmapper: The world as you’ve never seen it before. *IEEE Transactions on Visualization and Computer Graphics* **12**, 757–764 (2006).
84. M. E. J. Newman, Threshold effects for two pathogens spreading on a network. *Phys. Rev. Lett.* **95**, 108701 (2005).
85. J. Park and M. E. J. Newman, A network-based ranking system for American college football. *J. Stat. Mech.* **2005**, P10014 (2005).
86. J. Park and M. E. J. Newman, Solution for the properties of a clustered network. *Phys. Rev. E* **72**, 026136 (2005).

87. M. E. J. Newman, Power laws, Pareto distributions and Zipf's law. *Contemporary Physics* **46**, 323–351 (2005).
88. M. A. Porter, P. J. Mucha, M. E. J. Newman, and C. M. Warmbrand, A network analysis of committees in the United States House of Representatives. *Proc. Natl. Acad. Sci. USA* **102**, 7057–7062 (2005).
89. M. E. J. Newman, A measure of betweenness centrality based on random walks. *Social Networks* **27**, 39–54 (2005).
90. M. T. Gastner, C. R. Shalizi, and M. E. J. Newman, Maps and cartograms of the 2004 US presidential election results. *Advances in Complex Systems* **8**, 117–123 (2005).
91. L. Ancel Meyers, B. Pourbohloul, M. E. J. Newman, D. M. Skowronski, and R. C. Brunham, Network theory and SARS: Predicting outbreak diversity. *J. Theor. Bio.* **232**, 71–81 (2005).
92. J. Park and M. E. J. Newman, Solution of the 2-star model of a network. *Phys. Rev. E* **70**, 066146 (2004).
93. J. Park and M. E. J. Newman, The statistical mechanics of networks. *Phys. Rev. E* **70**, 066117 (2004).
94. A. Clauset, M. E. J. Newman, and C. Moore, Finding community structure in very large networks. *Phys. Rev. E* **70**, 066111 (2004).
95. M. E. J. Newman, Analysis of weighted networks. *Phys. Rev. E* **70**, 056131 (2004).
96. R. Milo, N. Kashtan, S. Itzkovitz, M. E. J. Newman, and U. Alon, Subgraphs in networks. *Phys. Rev. E* **70**, 058102 (2004).
97. M. Lachmann, M. E. J. Newman, and C. Moore, The physical limits of communication. *Am. J. Phys.* **72**, 1290–1293 (2004).
98. D. Lusseau and M. E. J. Newman, Identifying the role that individual animals play in their social network. *Proc. R. Soc. London B* **271**, S477–S481 (2004).
99. M. E. J. Newman, Fast algorithm for detecting community structure in networks. *Phys. Rev. E* **69**, 066133 (2004).
100. M. T. Gastner and M. E. J. Newman, Diffusion-based method for producing density equalizing maps. *Proc. Natl. Acad. Sci. USA* **101**, 7499–7504 (2004).
101. J. Balthrop, S. Forrest, M. E. J. Newman, and M. M. Williamson, Technological networks and the spread of computer viruses. *Science* **304**, 527–529 (2004).
102. M. E. J. Newman, Detecting community structure in networks. *Eur. Phys. J. B* **38**, 321–330 (2004).
103. M. E. J. Newman, Coauthorship networks and patterns of scientific collaboration. *Proc. Natl. Acad. Sci. USA* **101**, 5200–5205 (2004).
104. M. E. J. Newman and M. Girvan, Finding and evaluating community structure in networks. *Phys. Rev. E* **69**, 026113 (2004).
105. M. E. J. Newman and J. Park, Why social networks are different from other types of networks. *Phys. Rev. E* **68**, 036122 (2003).
106. M. E. J. Newman, The structure and function of complex networks. *SIAM Review* **45**, 167–256 (2003).
107. M. E. J. Newman, Properties of highly clustered networks. *Phys. Rev. E* **68**, 026121 (2003).
108. J. Park and M. E. J. Newman, The origin of degree correlations in the Internet and other networks. *Phys. Rev. E* **68**, 026112 (2003).
109. M. E. J. Newman, Mixing patterns in networks. *Phys. Rev. E* **67**, 026126 (2003).
110. L. Ancel Meyers, M. E. J. Newman, M. Martin, and S. Schrag, Applying network theory to epidemics: Control measures for outbreaks of *Mycoplasma pneumoniae*. *Emerging Infectious Diseases* **9**, 204–210 (2003).

111. M. E. J. Newman, Ego-centered networks and the ripple effect. *Social Networks* **25**, 83–95 (2003).
112. M. E. J. Newman, Assortative mixing in networks. *Phys. Rev. Lett.* **89**, 208701 (2002).
113. M. E. J. Newman, S. Forrest, and J. Balthrop, Email networks and the spread of computer viruses. *Phys. Rev. E* **66**, 035101 (2002).
114. R. M. Ziff and M. E. J. Newman, Convergence of threshold estimates for two-dimensional percolation. *Phys. Rev. E* **66**, 016129 (2002).
115. M. E. J. Newman, The structure and function of networks. *Computer Physics Communications* **147**, 40–45 (2002).
116. M. E. J. Newman, Spread of epidemic disease on networks. *Phys. Rev. E* **66**, 016128 (2002).
117. M. E. J. Newman, M. Girvan, and J. D. Farmer, Optimal design, robustness, and risk aversion. *Phys. Rev. Lett.* **89**, 028301 (2002).
118. M. Girvan and M. E. J. Newman, Community structure in social and biological networks. *Proc. Natl. Acad. Sci. USA* **99**, 7821–7826 (2002).
119. D. J. Watts, P. S. Dodds, and M. E. J. Newman, Identity and search in social networks. *Science* **296**, 1302–1305 (2002).
120. M. Girvan, D. S. Callaway, M. E. J. Newman, and S. H. Strogatz, A simple model of epidemics with pathogen mutation. *Phys. Rev. E* **65**, 031915 (2002).
121. M. E. J. Newman, D. J. Watts, and S. H. Strogatz, Random graph models of social networks. *Proc. Natl. Acad. Sci. USA* **99**, 2566–2572 (2002).
122. M. E. J. Newman, I. Jensen, and R. M. Ziff, Percolation and epidemics in a two-dimensional small world. *Phys. Rev. E* **65**, 021904 (2002).
123. D. Stauffer and M. E. J. Newman, Dynamics of a simple evolutionary process. *Int. J. Mod. Phys. C* **12**, 1375–1382 (2001).
124. E. M. Jin, M. Girvan, and M. E. J. Newman, The structure of growing social networks. *Phys. Rev. E* **64**, 046132 (2001).
125. D. S. Callaway, J. E. Hopcroft, J. M. Kleinberg, M. E. J. Newman, and S. H. Strogatz, Are randomly grown graphs really random? *Phys. Rev. E* **64**, 041902 (2001).
126. M. E. J. Newman, S. H. Strogatz, and D. J. Watts, Random graphs with arbitrary degree distributions and their applications. *Phys. Rev. E* **64**, 026118 (2001).
127. M. E. J. Newman, Clustering and preferential attachment in growing networks. *Phys. Rev. E* **64**, 025102 (2001).
128. M. E. J. Newman and R. M. Ziff, Fast Monte Carlo algorithm for site or bond percolation. *Phys. Rev. E* **64**, 016706 (2001).
129. M. E. J. Newman, Scientific collaboration networks: I. Network construction and fundamental results. *Phys. Rev. E* **64**, 016131 (2001).
130. M. E. J. Newman, Scientific collaboration networks: II. Shortest paths, weighted networks, and centrality. *Phys. Rev. E* **64**, 016132 (2001).
131. M. E. J. Newman, A new picture of life’s history on Earth. *Proc. Natl. Acad. Sci. USA* **98**, 5955–5956 (2001).
132. M. E. J. Newman, The structure of scientific collaboration networks. *Proc. Natl. Acad. Sci. USA* **98**, 404–409 (2001).
133. D. S. Callaway, M. E. J. Newman, S. H. Strogatz, and D. J. Watts, Network robustness and fragility: Percolation on random graphs. *Phys. Rev. Lett.* **85**, 5468–5471 (2000).

134. M. E. J. Newman, Models of the small world. *J. Stat. Phys.* **101**, 819–841 (2000).
135. J. Machta, M. E. J. Newman, and L. B. Chayes, Replica-exchange algorithm and results for the three-dimensional random field Ising model. *Phys. Rev. E* **62**, 8782–8789 (2000).
136. J. P. Garrahan and M. E. J. Newman, Glassiness and constrained dynamics of a short-range non-disordered spin model. *Phys. Rev. E* **62**, 7670–7678 (2000).
137. C. Moore and M. E. J. Newman, Exact solution of site and bond percolation on small-world networks. *Phys. Rev. E* **62**, 7059–7064 (2000).
138. M. Newman, The power of design. *Nature* **405**, 412–413 (2000).
139. M. E. J. Newman, Simple models of evolution and extinction. *Computing in Science and Engineering* **2**, 80–86 (2000).
140. C. Moore and M. E. J. Newman, Epidemics and percolation in small-world networks. *Phys. Rev. E* **61**, 5678–5682 (2000).
141. M. E. J. Newman and R. M. Ziff, Efficient Monte Carlo algorithm and high-precision results for percolation. *Phys. Rev. Lett.* **85**, 4104–4107 (2000).
142. C. Moore and M. E. J. Newman, Height representation, critical exponents, and ergodicity in the four-state triangular potts antiferromagnet. *J. Stat. Phys.* **99**, 629–660 (2000).
143. M. E. J. Newman, C. Moore, and D. J. Watts, Mean-field solution of the small-world network model. *Phys. Rev. Lett.* **84**, 3201–3204 (2000).
144. M. E. J. Newman and R. G. Palmer, Error estimation in the histogram Monte Carlo method. *J. Stat. Phys.* **97**, 1011–1026 (1999).
145. M. E. J. Newman and D. J. Watts, Scaling and percolation in the small-world network model. *Phys. Rev. E* **60**, 7332–7342 (1999).
146. M. E. J. Newman and D. J. Watts, Renormalization group analysis of the small-world network model. *Phys. Lett. A* **263**, 341–346 (1999).
147. C. Moore and M. E. J. Newman, Glassy dynamics and aging in an exactly solvable spin model. *Phys. Rev. E* **60**, 5068–5072 (1999).
148. M. E. J. Newman and G. J. Eble, Decline in extinction rates and scale invariance in the fossil record. *Paleobiology* **25**, 434–439 (2000).
149. M. E. J. Newman and P. Sibani, Extinction, diversity and survivorship of taxa in the fossil record. *Proc. R. Soc. London B* **266**, 1593–1599 (1999).
150. M. E. J. Newman and G. J. Eble, Power spectra of extinction in the fossil record. *Proc. R. Soc. London B* **266**, 1267–1270 (1999).
151. M. E. J. Newman and R. Engelhardt, Effects of selective neutrality on the evolution of molecular species. *Proc. R. Soc. London B* **265**, 1333–1338 (1998).
152. G. T. Barkema and M. E. J. Newman, Monte Carlo simulation of ice models. *Phys. Rev. E* **57**, 1155–1166 (1998).
153. M. E. J. Newman, A model of mass extinction. *J. Theor. Bio.* **189**, 235–252 (1997).
154. M. E. J. Newman and G. T. Barkema, Diffusion constant for the repton model of gel electrophoresis. *Phys. Rev. E* **56**, 3468–3473 (1997).
155. G. T. Barkema and M. E. J. Newman, The repton model of gel electrophoresis. *Physica A* **244**, 25–39 (1997).
156. K. Sneppen and M. E. J. Newman, Coherent noise, scale invariance and intermittency in large systems. *Physica D* **110**, 209–222 (1997).

157. M. E. J. Newman, Evidence for self-organized criticality in evolution. *Physica D* **107**, 293–296 (1997).
158. M. E. J. Newman, S. M. Fraser, K. Sneppen, and W. A. Tozier, Comment on ‘Self-organized criticality in living systems’. *Phys. Lett. A* **228**, 202–204 (1997).
159. M. E. J. Newman, Self-organized criticality, evolution, and the fossil extinction record. *Proc. R. Soc. London B* **263**, 1605–1610 (1996).
160. B. W. Roberts and M. E. J. Newman, A model for evolution and extinction. *J. Theor. Bio.* **180**, 39–54 (1996).
161. M. E. J. Newman and K. Sneppen, Avalanches, scaling, and coherent noise. *Phys. Rev. E* **54**, 6226–6231 (1996).
162. M. E. J. Newman and G. T. Barkema, Monte Carlo study of the random-field Ising model. *Phys. Rev. E* **53**, 393–404 (1996).
163. M. E. J. Newman and B. W. Roberts, Mass extinction: Evolution and the effects of external influences on unfit species. *Proc. R. Soc. London B* **260**, 31–37 (1995).
164. M. E. J. Newman and C. L. Henley, Phason elasticity of a three-dimensional quasicrystal: Transfer-matrix method. *Phys. Rev. B* **52**, 6386–6399 (1995).
165. M. E. J. Newman, C. L. Henley, and M. Oxborrow, Construction of periodic approximants for the canonical-cell model of a quasicrystal. *Phil. Mag. B* **71**, 991–1013 (1995).
166. G. T. Barkema, M. E. J. Newman, and M. Breeman, A model for the shapes of islands and pits on (111) surfaces of fcc metals. *Phys. Rev. B* **50**, 7946–7951 (1994).
167. M. E. J. Newman, B. W. Roberts, G. T. Barkema, and J. P. Sethna, Real-space renormalization group for the random-field Ising model. *Phys. Rev. B* **48**, 16533–16538 (1994).
168. M. E. J. Newman and C. L. Henley, Transfer-matrix analysis of the canonical-cell model of a quasicrystal. *J. Noncryst. Solids* **153**, 205–209 (1993).
169. M. E. J. Newman, Green’s functions, density of states and dynamic structure factor for a general one-dimensional quasicrystal. *Phys. Rev. B* **43**, 10915–10927 (1991).
170. M. E. J. Newman and R. B. Stinchcombe, Hopping conductivity of the fibonacci-chain quasicrystal. *Phys. Rev. B* **43**, 1183–1186 (1991).

#### BOOK CHAPTERS

1. M. E. J. Newman, Mathematics of networks. In L. Blume and S. Durlauf (eds.), *The New Palgrave Encyclopedia of Economics*, Palgrave Macmillan, Basingstoke, 2nd edition (2008).
2. A. Clauset, C. Moore, and M. E. J. Newman, Structural inference of hierarchies in networks. In E. Airoldi, D. M. Blei, S. E. Fienberg, A. Goldenberg, E. P. Xing, and A. X. Zheng (eds.), *Statistical Network Analysis: Models, Issues, and New Directions*, number 4503 in Lecture Notes in Computer Science, pp. 1–13, Springer, Berlin (2007).
3. M. E. J. Newman, Who is the best connected scientist? A study of scientific coauthorship networks. In E. Ben-Naim, H. Frauenfelder, and Z. Toroczkai (eds.), *Complex Networks*, number 650 in Lecture Notes in Physics, pp. 337–370, Springer, Berlin (2004).
4. M. E. J. Newman, Random graphs as models of networks. In S. Bornholdt and H. G. Schuster (eds.), *Handbook of Graphs and Networks*, pp. 35–68, Wiley-VCH, Berlin (2003).
5. M. Mitchell and M. E. J. Newman, Complex systems theory and evolution. In M. Pagel (ed.), *Encyclopedia of Evolution*, Oxford University Press, New York (2002).

6. R. V. Solé and M. E. J. Newman, Patterns of extinction and biodiversity in the fossil record. In T. Munn (ed.), *Encyclopedia of Global Environmental Change*, John Wiley, New York (2001).
7. M. E. J. Newman and G. J. Eble, Patterns of biodiversity in the fossil record. In S. Levin (ed.), *Encyclopedia of Biodiversity*, Academic Press, London (2000).
8. G. T. Barkema and M. E. J. Newman, New Monte Carlo algorithms for classical spin systems. In D. Ferguson, J. I. Siepmann, and D. G. Truhlar (eds.), *Monte Carlo Methods in Chemical Physics*, John Wiley, New York (1999).

## PRESENTATIONS

### INVITED CONFERENCE PRESENTATIONS:

- International Conference on Mathematics for Risk and Decisions, University College London (online), March 15–18, 2022, invited speaker
- Networks 2021, Joint meeting of the Network Science Society and INSNA (online), July 6, 2021, plenary speaker
- Workshop on Community Structure in Networks, Networks 2021 (online), July 1, 2021, keynote speaker
- American Physical Society March Meeting (online), March 15–19, 2021, invited speaker
- Workshop on Sustainable Exit Strategies for COVID-19, Arizona State University (online), May 28 and 29, 2020, invited speaker
- International Conference on Network Science (NetSci 2019), Burlington, Vermont, May 29–31, 2019, keynote speaker
- Workshop on Statistical Inference for Network Models (SINM 2019), Burlington, Vermont, May 27, 2019, invited panelist
- SIAM Workshop on Network Science (NS17), Pittsburgh, Pennsylvania, July 13 and 14, 2017, keynote speaker
- 3rd Annual Conference on Financial Stability, Center on Finance, Law, and Policy, Ann Arbor, Michigan, November 16 and 17, 2017, invited panelist
- APS Ohio Section Annual Meeting, Eastern Michigan University, May 5-6, 2017, invited speaker
- Symposium on Spatial Networks, University of Oxford, September 7-8, 2016, invited speaker
- Workshop on Statistical Network Analysis, Isaac Newton Institute, Cambridge University, July 11-15, 2016, invited speaker
- Workshop on Cultural Patterns: Multiscale Data-driven Models, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, California, May 9-13, 2016, invited speaker
- Inference on Networks, Santa Fe Institute workshop, Santa Fe, New Mexico, December 14–18, 2015, invited speaker
- Complex Systems Summer School, Santa Fe, New Mexico, June 2015, principal lecturer
- International Conference on Social Computing, Behavioral Modeling, and Prediction, Washington, DC, March 31–April 3, 2015, keynote speaker
- 6th Workshop on Complex Networks (CompleNet 2015), New York City, March 25–27, 2015, keynote speaker
- Conference on Complexity Science, Brighton, UK, August 19–22, 2014, keynote speaker



Conference on Computational Physics (CCP 2014), Boston, Mass., August 11–14, 2014, invited speaker

International Conference on Network Science (NetSci 2014), Berkeley, California, June 2–6, 2014, invited speaker

Cambridge Networks Day, Cambridge University, UK, May 23, 2014, keynote speaker

111th Rutgers Statistical Mechanics Meeting, New Brunswick, New Jersey, May 11–13, 2014, invited speaker

Santa Fe Institute Annual Science Symposium, Santa Fe, New Mexico, May 2, 2014, invited speaker

Statistical Mechanics Foundations of Complexity, Santa Fe Institute, May 8–10, 2014, invited speaker

American Physical Society March Meeting, Denver, Colorado, March 3–7, 2014, invited speaker

Neural Information Processing Systems (NIPS 2013), Lake Tahoe, Nevada, December 5–10, 2013, invited speaker

DIMACS Workshop on Statistical Analysis of Network Dynamics and Interactions, Rutgers University, New Jersey, November 7–8, 2013, keynote speaker

Deep Computation in Statistical Physics, Santa Fe, New Mexico, August 1–3, 2013, invited speaker

Structure, Statistical Inference, and Dynamics in Networks, Santa Fe, New Mexico, May 6–9, 2013, invited speaker

Dynamics Days, Denver Colorado, January 3–6, 2013, invited speaker

Lawrence Livermore Workshop on Current Challenges in Computing, Napa, CA, August 27–29, 2012, invited speaker

Complex Systems Summer School, Santa Fe, New Mexico, June 2012, principal lecturer

12th Experimental Chaos and Complexity Conference, Ann Arbor, Michigan, May 16–19, 2012, invited speaker

International Conference on Complex Systems, Boston, Massachusetts, June 26 to July 1, 2011, plenary speaker

4th Annual Political Networks Conference, Ann Arbor, Michigan, June 14–18, 2011, plenary speaker

Complex Systems Summer School, Santa Fe, New Mexico, June 2011, co-organizer and lecturer

Conference on Computation as a Lens on the Sciences, Berkeley, California, May 7 and 8, 2011, invited speaker

Conference on Complex Systems, Northwestern University, Evanston, Illinois, March 6 and 7, 2011, keynote speaker

Conference on Statistics of Networks, SAMSI, North Carolina, August 29–September 1, 2010, invited speaker

Workshop on Statistics of Networks, Isaac Newton Institute, Cambridge, England, June 24–25, 2010, invited speaker

Workshop on Information, Networks, and Markets, Cambridge, England, June 22, 2010, invited speaker

International Conference on Network Science, Cambridge, Massachusetts, May 11–14, 2010, keynote speaker

American Physical Society March Meeting, Portland, Oregon, March 15–19, 2010, invited speaker

2010 Berkeley Statistical Mechanics Meeting, University of California, Berkeley January 8–10, 2010, invited speaker

2009 INFORMS Marketing Science Conference, University of Michigan, June 4–6, 2009, invited speaker

Society of Industrial and Applied Mathematics Front Range Conference, Denver, Colorado, March 14, 2009, keynote speaker

100th Rutgers Statistical Mechanics meeting, New Brunswick, New Jersey, December 13–18, 2008, invited speaker

Workshop on Statistical Inference for Complex Networks, Santa Fe, New Mexico, December 3–5, 2008, invited speaker

Workshop on Advances in Theory of Networks and Strategic Interaction, Northwestern University, Evanston, October 3–4, 2008, invited speaker

Annual Meeting of the Association for the Advancement of Artificial Intelligence (AAAI 2008), Chicago, July 14–18, 2008, invited speaker

Annual Meeting of the Society for Industrial and Applied Mathematics (SIAM), San Diego, California, July 7–11, 2008, plenary speaker

International Conference on Network Science (NetSci 2008), Norwich, England, June 23–27, 2008, plenary speaker

Complex Systems Summer School, Santa Fe, New Mexico, June 2008, principal lecturer

European Conference on Complex Systems, Dresden, Germany, October 1–5, 2007, keynote speaker

23rd International Conference on Statistical Physics (STATPHYS 23), Genoa, Italy, July 9–13, 2007, invited speaker

Conference on Complex Networks: From biology to information technology, Sardinia, Italy, July 2–6, 2007, invited speaker

Complex Systems Summer School, Santa Fe, New Mexico, June 2007, principal lecturer

International Conference on Network Science, New York City, May 21–24, 2007, invited speaker

Workshop on Random and Dynamic Graphs and Networks, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, California, May 7–11, 2007, invited speaker

John Wiley Jones Distinguished Lecture in Science, Rochester Institute of Technology, May 30, 2007

British Applied Mathematics Colloquium, Bristol, England, April 17–19, 2007, plenary speaker

Workshop on Complex Networks and their Applications, Georgia Institute of Technology, Atlanta, Georgia, January 22–24, 2007, plenary speaker

École d'Été de Physique Théorique, Les Houches, France, July 3–7, 2006, invited lecturer

Summer School on Complex Networks, Bristol, England, July 10–14, 2006, invited lecturer

Conference on Optimization in Complex Networks, Los Alamos National Laboratory, New Mexico, June 19–22, 2006, invited speaker

Complex Systems Summer School, Santa Fe, New Mexico, June 2006, principal lecturer

International Conference on Network Science, Spencer, Indiana, May 22–25, 2006, invited speaker

March Meeting of the American Physical Society, Baltimore, March 13–17, 2006, invited speaker

Workshop on Statistics on Networks, National Academy of Sciences, Washington, DC, September 26–27, 2005, invited speaker

Workshop on Mathematical Epidemiology, Banff International Research Station, Banff, Canada, August 21–24, 2005, invited speaker

Santa Fe Institute Public Lecture, Santa Fe, New Mexico, June 15, 2005

Complex Systems Summer School, Santa Fe, New Mexico, June 2005, principal lecturer

Conference on Models of Real-World Random Networks, University of California, Berkeley, April 18–22, 2005, invited speaker

Conference on Network Science: Implications for Biology and Medicine, University of British Columbia, Vancouver, Canada, January 19–22, 2005, keynote speaker

Conference on Complex Systems, Northwestern University, Evanston, Illinois, October 29 and 30, 2004, invited speaker

Intel Corporation, Forum and Workshop on Modeling Complexity, October 5–6, 2004, keynote speaker

13th Annual Conference on Computational Analysis of Social and Organizational Systems, Pittsburgh, Pennsylvania, June 27–29, 2004, keynote speaker

Complex Systems Summer School, Santa Fe, New Mexico, June 2004, invited lecturer

Rutgers Statistical Mechanics Meeting, Piscataway, New Jersey, May 16–18, 2004, invited speaker

March Meeting of the American Physical Society, Montreal, March 22–26, 2004, invited speaker

Annual Meeting of the American Association for the Advancement of Science, Seattle, February 12–16, 2004, invited speaker

Workshop on Networks and the Population Dynamics of Disease Transmission, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, November 17–21, 2003, invited speaker

Conference on Discrete Models for Complex Systems, Lyon, France, June 16–19, 2003, invited speaker

SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 27–31, 2003, invited speaker

CNLS Conference on Networks: Structure, Dynamics and Function, Santa Fe, May 11–16, 2003, invited speaker

National Academy Arthur M. Sackler Colloquium, Irvine, May 9–11, 2003, invited speaker

DIMACS meeting on Spatio-Temporal and Network Modeling of Diseases, Rutgers University, April 22–26, 2003, invited speaker

Annual Meeting of the American Mathematical Society, Baltimore, January 13–17, 2003, invited speaker

Fifteenth International Symposium on Mathematical Theory of Networks and Systems, University of Notre Dame, South Bend, August 12–16, 2002, invited speaker

NEC Lectures on Biophysics, Princeton, June 16–20, 2002, invited lecturer

Sitges Conference on Statistical Mechanics, Barcelona, Spain, June 10–14, 2002, invited speaker

March Meeting of the American Physical Society, Indianapolis, March 18–22, 2002, invited speaker

Berkeley Statistical Mechanics Meeting, UC Berkeley, January 11–13, 2002, invited speaker

Conference on Computational Physics, Aachen, Germany, September 5–8, 2001, plenary speaker

European Physical Society International Conference on Dynamical Networks in Complex Systems, Kiel, Germany, July 25–27, 2001, invited speaker

Summer School on Complex Systems, Central European University, Budapest, Hungary, July 16–20, 2001, principal lecturer

Gordon Conference on Nonlinear Science, Mount Holyoke, Massachusetts, June 17–22, 2001, invited speaker

SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah, May 20–24, 2001, invited speaker  
DARPA Principal Investigators Meeting, Santa Fe, April 17 and 18, 2001, keynote speaker  
National Academy Arthur M. Sackler Colloquium, Irvine, March 23 and 24, 2001, invited speaker

SEMINARS AND COLLOQUIA:

University of Minnesota, Industrial Engineering seminar, March 29, 2023  
University of Toledo, Physics colloquium, March 23, 2023  
University of Edinburgh, Statistical Physics and Complexity seminar, March 21, 2023  
University of Colorado, Boulder, Physics colloquium, March 15, 2023  
Physical Society of London, guest speaker, September 14, 2022  
UC Berkeley, Department of Statistics, Neyman Seminar, September 9, 2020  
University of Edinburgh, Institute for Adaptive and Neural Computation, seminar, November 18, 2020  
Ohio State University, Translational Data Analytics Institute, seminar, October 25, 2019  
Northeastern University, Network Science Institute, Distinguished Speaker Seminar, March 27, 2019  
Myhill Lectures 2018, Department of Mathematics, SUNY Buffalo, October 24, 25, and 26, 2018  
Santa Fe Institute, seminar, July 5, 2018  
University of Oxford, Department of Statistics, Distinguished Speaker Seminar, May 18, 2018  
University of Oxford, Institute of New Economic Thinking, seminar, May 17, 2018  
University of Chicago, Statistics colloquium, February 13, 2017  
Gentry Lectures, Wake Forest University, Winston-Salem, NC, November 30–December 1, 2016, invited lecturer  
Indiana University, Network Science Lecture, October 24, 2016  
Case Western Reserve University, Physics colloquium, October 13, 2016  
Cambridge University, Mathematical Sciences seminar, September 15, 2016  
Turing Lecture, Alan Turing Institute, London, March 2, 2016  
Royal Statistical Society, London, February 10, 2016, invited speaker  
Oxford University, Distinguished Seminar in Statistics, March 11, 2016  
Oxford University, Physics Colloquium, February 12, 2016  
Oxford University, Physics Department public lecture, February 6, 2016  
Oxford University, Mathematics Colloquium, January 29, 2016  
Sandia Distinguished Lecture, Sandia National Laboratory, Albuquerque, New Mexico, June 25, 2015  
Washington University, St. Louis, Physics colloquium, October 16, 2014  
Harvard University, School of Engineering and Applied Sciences colloquium, October 6, 2014  
University of Pittsburgh, Mathematics colloquium, September 26, 2014  
University of Pittsburgh, Department of Mathematics, Theme Semester on Discrete Networks, invited lecturer, September 24-26, 2014  
Ohio State University, Physics colloquium, August 26, 2014  
UCLA, IPAM seminar, June 6, 2014  
UCLA, Physics colloquium, June 5, 2014  
Northwestern University, Institute on Complex System seminar, March 12, 2014

Stanford University, Physics colloquium, February 11, 2014  
Harvard University, Badger Lecture in Network Medicine, November 19, 2013  
Massachusetts Institute of Technology, Information and Decision Systems seminar, November 19, 2013  
Center for Complex Network Research, Northeastern University, seminar, May 1, 2013  
Boston University, Physics colloquium, April 30, 2013  
Distinguished Lecture on Scientific Computing, Simon Fraser University, March 15, 2013  
Center for Studies in Physics and Biology, Rockefeller University, seminar, October 8, 2012  
Stony Brook University, Physics colloquium, March 20, 2012  
Hitachi Distinguished Lecture, University of Oklahoma, November 11, 2011  
Oxford University, Theoretical physics colloquium, October 14, 2011  
Ockham Lecture, Oxford University, October 16, 2011  
University of Chicago, Computation Institute seminar, April 4, 2011  
Case Western Reserve University, Biomathematics seminar, March 25, 2011  
Florida State University, Mathematics colloquium, January 28, 2011  
Florida State University, Physics colloquium, January 27, 2011  
Indiana University, Cognitive Science colloquium, November 8, 2010  
University of Massachusetts, Amherst, Physics colloquium, October 6, 2010  
Center for Computational Molecular Biology, University of Michigan, colloquium, September 29, 2010  
Ulam Lectures, Santa Fe Institute (series of three lectures), September 14–16, 2010  
University of Colorado, Boulder, Mathematics colloquium, March 13, 2009  
Distinguished Lecture on Network Science, Pennsylvania State University, State College, Pennsylvania,  
January 14, 2009  
2008 NICO Distinguished Lecture, Northwestern University, Evanston, October 13, 2008  
NSF ADVANCE Distinguished Lecture, Kansas State University, Manhattan, Kansas, September 4, 2008  
Toyota Technological Institute at Chicago, seminar, November 9, 2007  
Harvard University Medical School, seminar, November 16, 2006  
University of Notre Dame, Condensed Matter seminar, October 27, 2006  
Harvard University, Radcliffe Seminar, October 20, 2006  
Northwestern University, Engineering Science and Applied Mathematics colloquium, October 16, 2006  
Emory University, Physics colloquium, September 22, 2006  
Santa Fe Institute, seminar, June 20, 2006  
MIT, EECS seminar, May 11, 2006  
Harvard University, Dana Farber Cancer Institute, Systems Biology seminar, April 27, 2006  
Virginia Tech Corporate Research Center, April 10, 2006  
Northwestern University, Industrial Engineering and Management Sciences seminar, April 7, 2006  
University of Michigan, School of Information, STIET seminar, February 23, 2006  
University of Rochester, Physics colloquium, February 22, 2006  
William and Mary College, Physics colloquium, November 11, 2005  
Cornell University, Applied Mathematics seminar, October 28, 2005  
Perimeter Institute, Waterloo, Ontario, Institute colloquium, September 21, 2005  
Harvard University, School of Public Health, seminar, May 2, 2005

Google Corporation, April 20, 2006  
Indiana University, Complex Systems seminar, April 18, 2005  
Princeton University, Ecology and Evolutionary Biology seminar, November 29, 2004  
Syracuse University, Physics Colloquium, November 11, 2004  
University of Maryland, Physics colloquium, November 9, 2004  
NYU Stern School of Business, Information Systems seminar, October 14, 2004  
University of Illinois, Urbana-Champaign, Physics colloquium, September 23, 2004  
University of Oxford, Complex Systems seminar, May 11, 2004  
Umeå University, Sweden, Physics seminar, May 6, 2004  
Michigan State University, "Science on the Edge" seminar, April 30, 2004  
University of Delaware, Mathematical Sciences colloquium, April 27, 2004  
Georgia Tech, Applied Mathematics seminar, April 2, 2004  
Harvard University, Kennedy School of Government, Colloquium on Complexity and Social Networks,  
March 15, 2004  
Northwestern University, Engineering Science and Applied Mathematics colloquium, March 12, 2004  
Microsoft Research, Theory Group seminar, February 13, 2004  
Johns Hopkins University, Applied Mathematics and Statistics seminar, February 5, 2004  
Wayne State University, Physics colloquium, January 22, 2004