Mason A. Porter
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EMPLOYMENT

- Faculty positions
  - 6/16–present
    - *Professor*, Department of Mathematics, University of California, Los Angeles (UCLA)
  - 10/07–9/16
    - Mathematical Institute, University of Oxford: *Professor of Nonlinear and Complex Systems* (7/14–9/16); *Associate Professor* (1/14–7/14); *University Lecturer* (10/07–12/13)
    - *Tutorial Fellow*, Somerville College, University of Oxford [10/07–8/16]
- Postdoctoral positions
  - 6/05–9/07: Center for the Physics of Information, California Institute of Technology
  - 8/02–5/05: NSF VIGRE Visiting Assistant Professor, School of Mathematics (and Research Associate, Center for Nonlinear Science, School of Physics), Georgia Institute of Technology
  - 1/03–5/03: Semiclassical Analysis program, Mathematical Sciences Research Institute (MSRI), Berkeley, CA, USA

EDUCATION

- Ph.D., Center for Applied Mathematics, Cornell University [5/26/02]
- M.S., Center for Applied Mathematics, Cornell University [1/17/01]
- B.S. with Honors, Applied Mathematics, California Institute of Technology [6/12/98]

HONORS (selected)

- Elected Fellow of the American Mathematical Society (AMS) [2018]
- Council on Undergraduate Research (CUR) Faculty Mentoring Award (Advanced Career Category; Mathematics and Computer Science Division) [2017]
- SIGEST award from SIAM (for the paper "Core-Periphery Structure in Networks", *SIAM Journal of Applied Mathematics*, 2014) [2017]
- Elected Fellow of the American Physical Society (APS) [2016]
- Young Scientist Award for Socio- and Econophysics, German Physical Society (DPG) [2016]
- Whitehead Prize, London Mathematical Society (LMS) [2015]
- Erdös–Rényi Prize in Network Science, Network Science Society [2014]
- Sigma Xi Young Investigator Award [2008]
- Project NExT Fellowship, via American Mathematical Society (AMS) [2003–2004]

GRANTS (selected; 14 listings in full CV)

- 1. Co-Principal Investigator, "NCS-FO: How Real-World Interaction Networks Shape and are Shaped by Neural Information Processing", National Science Foundation, Integrative Strategies for Understanding Neural and Cognitive Systems (NSF-NCS) (PI: Carolyn Parkinson), $976,747 [4/1/19–3/31/22]
- 2. Principal Investigator, "Dynamic Optimization and Network Analysis for Bus Transportation for the Los Angeles Unified School District", funded as a 2018 UCLA Institute of Transportation Studies (IST) research proposal (co-PI: Mario Gerla), $101,447 [10/01/18–09/30/19]
- 3. Principal Investigator, "PLEXMATH: Mathematical Framework for Multiplex Networks", European Commission FET-Proactive Project [#317614], FP7-ICT-2011-8, Dynamics of Multi-Level Complex Systems (joint with A. Arenas, M. Barthelemy, J. P. Gleeson, and Y. Moreno), €1,520,540 (including €287,069 to University of Oxford) [11/12–10/15]
- 4. Principal Investigator, "Community Structure in Multislice Networks", EPSRC grant [EP/J001759/1], £211,051 [6/12–5/14]
- 5. Principal Investigator, "Coevolution, Interconnections, and Communities of Social and Political Networks in the United States Congress" James S. McDonnell Foundation [JSMF#220020177, Studying Complex Systems Research Award], 21st Century Science Initiative (joint with J. H.

Fowler), $418,038 [2/09–1/14]

EDITORIAL DUTIES (selected)

- Editorial Boards (selected) [on 9 current editorial boards]
  - Associate Editor, *SIAM Journal on Mathematics of Data Science* [*SIMODS*] (Society for Industrial and Applied Mathematics) [inaugural editorial board; 2/18–12/20]
  - Associate Editor, *Network Neuroscience* (MIT Press) [inaugural editorial board; 4/16–present]
  - Associate Editor, Dynamical and Complex Systems, *Transactions of Mathematics and its Applications: A Journal of the IMA* (Oxford University Press) [inaugural editorial board; 2/15–present]
  - Associate Editor, Research Spotlights section, *SIAM Review* (Society for Industrial and Applied Mathematics) [1/15–12/20]
  - Associate Editor, *IEEE Transactions on Network Science and Engineering* (Institute of Electrical and Electronic Engineers) [inaugural editorial board; 3/14–present]
  - Associate Editor, *European Journal of Applied Mathematics* (Cambridge University Press) [9/13–present]
  - Associate Editor, *Journal of Complex Networks* (Oxford University Press) [inaugural editorial board; 11/12–present]
- Special Issue
  - Editor, special issue on "Network Analysis and Modelling" [December 2016: Vol. 27, No. 6], *European Journal of Applied Mathematics* (joint with G. Bianconi).

PUBLICATIONS [Google Scholar Profile: http://scholar.google.com/citations?user=hSyfNekAAAAJ&hl=en; h-index = 52; >12000 total citations; >2000 citations in 2017]

- Books [2]
  - C. Cramer, MAP, H. Sayama, L. Sheetz, & S. Uzzo (Eds.) [2018], *Network Science in Education — Tools and Techniques for Transforming Teaching and Learning* (Springer-Verlag), in press (estimated to be published in June 2018)
  - MAP & J. P. Gleeson [2016], "Dynamical Systems on Networks: A Tutorial", *Frontiers in Applied Dynamical Systems: Reviews and Tutorials*, Volume 4 (Springer)
- Publications in refereed journals [118 publications in applied math, physics, computational biology, interdisciplinary, and other research journals]. Selected publications include:
  - L. Papadopoulos, MAP, K. E. Daniels, & D. S. Bassett [2018], "Network Analysis of Particles and Grains", *Journal of Complex Networks*, Vol. 6, No. 4: 485–565.
  - C. J. Lustri & MAP [2018], "Nanoptera in a Period-2 Toda Chain", *SIAM Journal on Applied Dynamical Systems*, Vol. 17, No. 2: 1182–1212
  - N. Otter, MAP, U. Tillmann, P. Grindrod, & H. A. Harrington [2017], "A Roadmap for the Computation of Persistent Homology", *European Physical Journal — Data Science*, Vol. 6: 17
  - P. Rombach, MAP, P. J. Mucha, & J. H. Fowler [2017], "Core-Periphery Structure in Networks (Revisited)", *SIAM Review*, Vol. 59, No. 3: 619–646
  - S. Pilosof, MAP, M. Pascual, & S. Kéfi [2017], "The Multilayer Nature of Ecological Networks", *Nature Ecology & Evolution*, Vol. 1: 0101
  - D. Taylor, S. A. Myers, A. Clauset, MAP, & P. J. Mucha [2016], "Eigenvector-Based Centrality Measures for Temporal Networks", *Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal*, Vol. 15, No. 1: 537–574
  - M. Bazzi, MAP, S. Williams, M. McDonald, D. J. Fenn, & S. D. Howison [2016], "Community Detection in Temporal Multilayer Networks, with an Application to Correlation Networks", *Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal*, Vol. 14, No. 1: 1–41
  - D. Taylor, F. Klimm, H. A. Harrington, M. Kramár, K. Mischaikow, MAP, & P. J. Mucha [2015], "Topological Data Analysis of Contagion Maps for Examining Spreading Processes on Networks", *Nature Communications*, Vol. 6: 7723.
  - M. Kivelä, A. Arenas, M. Barthelemy, J. P. Gleeson, Y. Moreno, & MAP [2014], "Multilayer Networks", *Journal of Complex Networks*, Vol. 2, No. 3: 203–271
  - M. De Domenico, A. Solé-Ribalta, E. Cozzo, M. Kivelä, Y. Moreno, MAP, S. Gómez, & A.

Arenas [2013], “Mathematical Formulation of Multilayer Networks”, *Physical Review X*, Vol. 3, No. 4: 041022
    - H. Hu, T. Laurent, MAP, & A. L. Bertozzi [2013], “A Method Based on Total Variation for Network Modularity Optimization Using the MBO Scheme”, *SIAM Journal on Applied Mathematics*, Vol. 73, No. 6: 2224–2246
    - A. L. Traud, E. D. Kelsic, P. J. Mucha, & MAP [2011], “Comparing Community Structure to Characteristics in Online Collegiate Social Networks”, *SIAM Review*, Vol. 53, No. 3: 526–543
    - D. S. Bassett, N. F. Wymbs, MAP, P. J. Mucha, J. M. Carlson, & S. T. Grafton [2011], “Dynamic Reconfiguration of Human Brain Networks During Learning”, *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 108, No. 18: 7641–7646
    - N. Boechler, G. Theocharis, S. Job, P, G. Kevrekidis, MAP, & C. Daraio [2010], “Discrete Breathers in One-Dimensional Diatomic Granular Crystals”, *Physical Review Letters*, Vol. 104, No. 24: 244302
    - P. J. Mucha, T. Richardson, K. Macon, MAP, & J.-P. Onnela [2010], “Community Structure in Time-Dependent, Multiscale, and Multiplex Networks”, *Science*, Vol. 328, No. 5980: 876–878
    - MAP, P. J. Mucha, M. E. J. Newman, & C. M. Warmbrand [2005], “A Network Analysis of Committees in the U.S. House of Representatives”, *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 102, No. 20: 7057–7062
- Publications in expository journals and magazines [11, including a 2009 paper (MAP, J.-P. Onnela, & P. J. Mucha; Vol. 56, No. 9: 1082–1097, 1164–1166) in the *Notices of AMS* that is the most cited paper in the history of *The Notices*]
- Papers under review [14]; Publications in conference proceedings and book chapters [14]; Scientific gallery publications [5]; Commentaries, opinion articles, and book reviews [15]; Study group papers [18]; Letters and other scholarly and educational works [4]; Software [1, in addition to ones associated with refereed publications]

POSTDOCTORAL SCHOLAR AND GRADUATE STUDENT RESEARCH SUPERVISION

- Postdoctoral scholars: 6 (one at UCLA and five at University of Oxford)
- Doctoral students, UCLA
    - Supervisor [6 students, including 1 so far to completion; 5 current students]
    - Advancement to Doctoral Candidacy (ATC) Committee Member [8 students]
- Doctoral students, University of Oxford [22 students: 13 so far to completion; 8 current students]
- Doctoral students (visiting University of Oxford) [1 student]
- Masters students (University of Oxford, including visiting students) [36 students]

UNDERGRAD STUDENT RESEARCH SUPERVISION [81 students + 2 student groups]

- UCLA [9 students]; University of Oxford [38 students]; California Institute of Technology [12 students]; Georgia Institute of Technology [15 students]; Mathematical and Theoretical Biology Institute projects, Cornell University [2 student groups]

SEMINARS, PRESENTATIONS, AND OTHER INVITED PARTICIPATION (selected)

- Invited Conference Presentations (plenary, keynote, and equivalent) [20 of them]
    - Examples include NetSci 2019 [keynote; 6/18], XI Americas Conference on Differential Equations and Nonlinear Analysis [8/17], Mathematics for the Modern Economy, Royal Society Meeting [6/17], Dynamics Days 2017 [1/17], American Physical Society (APS) March Meeting [3/16], NetSciX [1/16], NetSci 2013 [6/13], Conference on Brain Networks, Yeosu, Korea [11/11], Sigma Xi Annual Meeting [11/08]
- Named/Distinguished Lecture Series [3 of them], including:
    - University of Pennsylvania, Warren Center for Network and Data Sciences, Distinguished Lecture Series [2015]
    - Arizona State University, Brauer–Mickens Distinguished Seminar, School of Mathematical & Statistical Sciences [2014]
- Public Lectures [3 talks]

- Invited School and Tutorial Lectureships [9 of them]
  - Examples include: Minitutorial on Network Dynamics, 2015 SIAM Conference on Applications of Dynamical Systems [5/15]; Introduction to Multilayer Networks, Tutorial, NetSci 2014 [6/14]
- Invited Participation in Long-Term Academic Programs [4 of them]: once each at MBI [2016], ICERM [2014], KITP [2011], and SAMSI [2010–2011]
- Invited Workshop Presentations [32 of them]
- Invited Minisymposium Conference Presentations [23 of them]
- Invited Seminars at Universities (and companies and similar venues) [>175 of them]

TEACHING (selected)

- Lecturing and Seminar Courses, UCLA [2016–2018]: Seminar in Networks and Complex Systems (5 times); Networks (twice); Topics in Networks (twice); Applied Ordinary Differential Equations [graduate level] (twice)
- Design of New Courses
  - UCLA: Topics in Networks (graduate-level course); Networks (upper-division undergraduate course, adapted from the University of Oxford version that I designed)
  - University of Oxford: Networks [4th-year undergraduate course; I designed and previously taught a Master's variant of this course]
  - University of Oxford: Statistical Mechanics [4th-year undergraduate course]
  - Georgia Institute of Technology: Introduction to Mathematical Modeling [advanced undergraduate course]

ORGANIZATION OF CONFERENCES, WORKSHOPS, ETC.

- Organization of Long-Term Scientific Programs [2 of them]
  - Lead Organizer, Mathematical Research Community (MRC) on "Network Science", American Mathematical Society (with A. Clauset and D. Kempe) [2014]
  - Member, Organizing Committee, Emphasis Semester on Dynamics of Biologically Inspired Networks, Mathematical Biosciences Institute (MBI), Columbus, OH, USA [Spring 2016]
- Organization of Conferences and Workshops (lead and co-lead) [16 of them]
  - Recent examples include SIAM Conference on Applications of Dynamical Systems 2019 [DS19] (with E. Spiller) [2019]; SIAM Workshop on Network Science 2017 [NS17] (with M. Girvan) [2017]; Workshop on Generalized Network Structures and Dynamics, Emphasis Semester on Dynamics of Biologically Inspired Networks, Mathematical Biosciences Institute (MBI), Columbus, OH, USA [2016]; Ada Lovelace Bicentenary: Celebrating Women in Computer Science, Somerville College, Oxford [2015]

ADDITIONAL SERVICE, MENTORING, AND OUTREACH (selected)

- Scientific Organizations
  - Program Director, Society for Industrial and Applied Mathematics (SIAM) Activity Group on Dynamical Systems [1/1/18–12/31/19]
  - Secretary (and DSWeb Co-Editor-in-Chief, jointly with D. M. Abrams), SIAM Activity Group on Dynamical Systems [1/1/16–12/31/17]
  - Member, Education Committee, SIAM [1/1/13–12/31/18]
  - Member, Subcommittee on Mathematics Across the Disciplines, Committee on the Undergraduate Program in Mathematics, Mathematical Association of America [1/1/09–1/15/15]
- Faculty Advisor (and founding faculty member): University of Oxford student chapter of SIAM [10/07–12/15]
- Outreach: National and International
  - Helped design brochure on "Network Literacy: Essential Concepts and Core Ideas" (with C. Cramer, H. Sayama, L. Sheetz, and S. Uzzo) [posted online 3/12/15]; translated from English into 18 other languages
  - Designed and organized mathematics workshops on Network Science for students in of ages 13–16 [2012–present]
- Mentor, Mathematical & Theoretical Biology Institute (MTBI) summer REU program [2000–2002]