

# Daniel B. Larremore

## Contact Information

BioFrontiers Institute  
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[LarremoreLab.github.io](https://github.com/LarremoreLab)  
[Google Scholar](#)

## Education

<b>University of Colorado Boulder</b> Ph.D, Applied Mathematics “Critical Dynamics in Complex Excitable Networks” Advisor: Juan G. Restrepo	<b>2012</b>
<b>University of Colorado Boulder</b> M.S., Applied Mathematics	<b>2009</b>
<b>Washington University in St. Louis</b> B.S., Chemical Engineering, <i>cum laude</i>	<b>2005</b>

## Academic Positions

<b>University of Colorado Boulder</b> Associate Professor, Department of Computer Science Assistant Professor, Department of Computer Science Core Faculty, BioFrontiers Institute Affiliate Faculty, Department of Applied Mathematics	<b>Boulder, CO</b> 2023 - Present 2017 - 2023 2017 - Present 2020 - Present
<b>Harvard T.H. Chan School of Public Health</b> External Faculty, Center for Communicable Disease Dynamics Postdoctoral Fellow, Center for Communicable Disease Dynamics Advisors: Caroline Buckee (HSPH), Aaron Clauset (Colorado)	<b>Boston, MA</b> 2020 - Present 2012 - 2015
<b>Santa Fe Institute</b> External Faculty Omidyar Fellow	<b>Santa Fe, NM</b> 2023 - Present 2015 - 2017

## Other Positions

<b>PLOS Computational Biology</b> Academic Editor	<b>San Francisco, CA</b> 2022 - Present
<b>Darwin BioSciences</b> Scientific Advisory Board	<b>Boulder, CO</b> 2020 - Present

## Awards

Erdős–Rényi Prize, Network Science Society	2023
Alan T. Waterman Award, National Science Foundation	2022
Brilliant 10, <i>Popular Science</i>	2022
Robert L. Stearns Award, University of Colorado Boulder	2021
Provost's Faculty Achievement Award, University of Colorado Boulder	2021
Research & Innovation Office Faculty Fellow, Univ. Colorado Boulder	2020
Best Poster, Genetic Epidemiology of Malaria, Sanger Institute	2018
Best Poster, NetSci 2014, Berkeley, CA	2014
Best Poster, Dynamics Days 2010, Evanston, IL	2010

## Peer-Reviewed Publications

\* equal contribution

† alphabetical author order

★ advised student coauthor

### Peer-Reviewed Journal Articles and Conference Proceedings

1. **An Open-Source Cultural Consensus Approach to Name-Based Gender Classification**  
★ Ian Van Buskirk, Aaron Clauset, Daniel B. Larremore  
*Proceedings of the International Conference on Web and Social Media (AAAI ICWSM)*, (2023)  
<https://doi.org/10.1609/icwsml.v17i1.22195>
2. **Field-Specific Ability Beliefs as an Explanation for Gender Differences in Academics' Career Trajectories: Evidence From Public Profiles on ORCID.or**  
Aniko Hannak\*, Kenneth Joseph\*, Daniel B. Larremore\*, Andrei Cimpian\*  
*Journal of Personality and Social Psychology: Attitudes and Social Cognition*, (2023)  
<https://doi.org/10.1037/pspa0000348>
3. **Geographically skewed recruitment and COVID-19 seroprevalence estimates: A cross-sectional serosurveillance study and mathematical modeling analysis**  
Tyler Brown, Pablo Martinez de Salazar Munoz, Abhishek Bhatia, Bridget Bunda, Ellen K. Williams, David Bor, James S. Miller, Amir Mohareb, Julia Thierauf, Wenxin Yang, Julian Villalba, Vivek Naranbai, Wilfredo Garcia Beltran, Tyler E. Miller, Doug Kress, Kristen Stelljes, Keith Johnson, Daniel B. Larremore, Jochen Lennerz, A. John Iafrate, Satchit Balsari, Caroline O. Buckee, Yonatan H. Grad  
*BMJ Open*, 13:e061840, (2023)  
<http://doi.org/10.1136/bmjopen-2022-061840>
4. **Evolution of *Plasmodium falciparum* var repertoires by sexual recombination sustains disease transmission after an outbreak in Ecuador**  
Shazia Ruybal-Pesántez, Fabian E. Sáenz, Samantha Deed, ★ Erik K. Johnson, Daniel B. Larremore, Claudia A. Vera-Arias, Kathryn E. Tiedje, Karen P. Day  
*Frontiers in Tropical Diseases*, 4, (2023)  
<https://doi.org/10.3389/fitd.2023.1085862>
5. **Labor advantages drive the greater productivity of faculty at elite universities**  
Sam Zhang, ★ K. Hunter Wapman, Daniel B. Larremore, Aaron Clauset  
*Science Advances*, 8 (46), eabq7056, (2022)  
<https://doi.org/10.1126/sciadv.abq7056>
6. **Subfield Prestige and Gender Inequality in Computing**  
★ Nicholas LaBerge, ★ K. Hunter Wapman, Allison C. Morgan, Sam Zhang, Daniel B. Larremore, Aaron Clauset  
*Communications of the ACM*, 65 (12), 46-55, (2022)  
<https://dx.doi.org/10.1145/3535510>
7. **Bayesian estimation of population size and overlap from random subsamples**  
★ Erik K. Johnson, Daniel B. Larremore  
*PLOS Computational Biology*, 18 (9), e1010451, (2022)  
<https://doi.org/10.1371/journal.pcbi.1010451>
8. **Optimizing prevalence estimates for a novel pathogen by reducing uncertainty in test characteristics**  
Daniel B. Larremore\*, Bailey K. Fosdick\*, Sam Zhang, Yonatan H. Grad  
*Epidemics*, 41, 100634, (2022)

<https://doi.org/10.1016/j.epidem.2022.100634>

9. **Quantifying hierarchy and dynamics in U.S. faculty hiring and retention**  
★ K. Hunter Wapman, Sam Zhang, Aaron Clauset, Daniel B. Larremore.  
*Nature*, 610, 120-127, (2022).  
<https://doi.org/10.1038/s41586-022-05222-x>
10. **Socioeconomic Roots of Academic Faculty**  
Allison C. Morgan, ★ Nicholas LaBerge, Daniel B. Larremore, Mirta Galesic, Jennie E. Brand, Aaron Clauset.  
*Nature Human Behaviour*, (2022)  
<https://doi.org/10.1038/s41562-022-01425-4>
11. **Ethnoracial Disparities in SARS-CoV-2 Seroprevalence in a Large Cohort of Individuals in Central North Carolina from April to December 2020.**  
Cesar A. Lopez, Clark H. Cunningham, Sierra Pugh, Katerina Brandt, Usaphea P. Vanna, Matthew J. Delacruz, Quique Guerra, Samuel Jacob Goldstein, Yixuan Jacob Hou, Margaret Gearhart, Christine Wiethorn, Candace Pope, Carolyn Amditis, Kathryn Pruitt, Cinthia Newberry-Dillon, John Schmitz, Lakshmanane Premkumar, Adaora A. Adimora, Michael Emch, Ross Boyce, Allison E. Aiello, Bailey K. Fosdick, Daniel B. Larremore, Aravinda M. de Silva, Jonathan J. Juliano, Alena J. Markmann  
*mSphere*, e00841-21, (2022)  
<https://doi.org/10.1128/msphere.00841-21>
12. **SARS-CoV-2 Transmission and Impacts of Unvaccinated-Only Screening in Populations of Mixed Vaccination Status**  
★ Kate M. Bubar\*, ★ Casey E. Middleton\*, Kristen K. Bjorkman, Roy Parker, Daniel B. Larremore.  
*Nature Communications*, 13, 2777, (2022)  
<https://doi.org/10.1038/s41467-022-30144-7>
13. **The Dynamics of Faculty Hiring Networks**  
★ Eun Lee, Daniel B. Larremore, Aaron Clauset  
*EPJ Data Science*, 10, 48, (2021)  
<https://doi.org/10.1140/epjds/s13688-021-00303-9>
14. **A guide to choosing and implementing reference models for social network analysis**  
Elizabeth Hobson, Matthew Silk, Nina Fefferman, Daniel B. Larremore, Puck Rombach, Saray Shai, Noa Pinter-Wollman  
*Biological Reviews*, 96 (6), (2021)  
<https://doi.org/10.1111/brv.12775>
15. **Higher viral load drives infrequent SARS-CoV-2 transmission between asymptomatic residence hall roommates**  
Kristen K. Bjorkman, Tassa K. Saldi, Erika Lasda, Leisha Connors Bauer, Jennifer Kovarik, Patrick K. Gonzales, Morgan R. Fink, Kimngan L. Tat, Cole R. Hager, Jack C. Davis, Christopher D. Ozeroff, Gloria R. Brisson, Daniel B. Larremore, Leslie A. Leinwand, Matthew B. McQueen, Roy Parker  
*Journal of Infectious Diseases*, jia386, (2021)  
<https://doi.org/10.1093/infdis/jia386>
16. **Modeling the effectiveness of olfactory testing to limit SARS-CoV-2 transmission**  
Daniel B. Larremore, Derek Toomre, Roy Parker  
*Nature Communications*, 12, 3664, (2021)  
<https://doi.org/10.1038/s41467-021-23315-5>
17. **Emergence of hierarchy in networked endorsement dynamics**  
Mari Kawakatsu\*, Philip S. Chodrow\*, Nicole Eikmeier\*, Daniel B. Larremore  
*Proceedings of National Academy of Sciences USA*, 118(16) e2015188118, (2021)

<https://doi.org/10.1073/pnas.2015188118>

18. **Serial population-based serosurvey for COVID-19 in two neighborhoods of Karachi, Pakistan**  
Muhammad Imran Nisar, Nadia Ansari, Farah Khalid, Mashal Amin, Hamna Shahbaz, Aneeta Hotwani, Najeib Rehman, Sierra Pugh, Usma Mehmood, Arjumand Rizvi, Arslan Memon, Zahoor Ahmed, Ashfaque Ahmed, Junaid Iqbal, Ali Faisal Saleem, Uzma Bashir Aamir, Daniel B. Larremore, Bailey K. Fosdick, Fyezah Jehan.  
*International Journal of Infectious Diseases*, 106, 176-182, (2021).  
<https://doi.org/10.1016/j.ijid.2021.03.040>
19. **Estimating SARS-CoV-2 seroprevalence and epidemiological parameters with uncertainty from serological surveys**  
Daniel B. Larremore, Bailey K. Fosdick, ★ Kate M. Bubar, Sam Zhang, Stephen M. Kissler, C. Jessica E. Metcalf, Caroline O. Buckee, Yonatan H. Grad  
*eLife*, 10:e64206, (2021)  
<https://doi.org/10.7554/eLife.64206>
20. **The Unequal Impact of Parenthood in Academia**  
Allison C. Morgan, Samuel F. Way, Michael J. D. Hoefer, Daniel B. Larremore, Mirta Galesic, Aaron Clauset  
*Science Advances*, 7 (9), eabd1996, (2021)  
<https://doi.org/10.1126/sciadv.abd1996>
21. **Model-informed COVID-19 vaccine prioritization strategies by age and serostatus**  
★ Kate M. Bubar, ★ Kyle Reinholt, Stephen M. Kissler, Marc Lipsitch, Sarah Cobey, Yonatan H. Grad, Daniel B. Larremore  
*Science*, 371 (6532), 916-921, (2021)  
<https://doi.org/10.1126/science.abe6959>
22. **Risk Factors of SARS-CoV-2 Antibodies in Arapahoe County First Responders - the COVID-19 Arapahoe SErosurveillance Study (CASES) Project**  
Katherine R. Sabourin, Jonathan Schultz, Joshua Romero, Molly M. Lamb, Daniel B. Larremore, Thomas E. Morrison, Ashley Frazer, Shanta Zimmer, Ross M. Kedl, Thomas Jaenisch, Rosemary Rochford  
*Journal of Occupational and Environmental Medicine*, 63 (3) 191-198, (2020)  
<https://doi.org/10.1097/JOM.0000000000002099>
23. **Test sensitivity is secondary to frequency and turnaround time for COVID-19 screening**  
Daniel B. Larremore, Bryan Wilder, Evan Lester, Soraya Shehata, James M. Burke, James A. Hay, Milind Tambe, Michael J. Mina, Roy Parker  
*Science Advances*, 7 (1), eabd5393, (2020)  
<https://doi.org/10.1126/sciadv.abd5393>
24. **Choices In Networks: A Research Framework**  
Fred Feinberg, Elizabeth Bruch, Michael Braun, Brett Hemenway Falk, Nina Fefferman, Elea McDonnell Feit, John Helveston, Daniel B. Larremore, Blakely B. McShane, Mario Small, Alice Patania.  
*Marketing Letters*, 1-11, (2020)  
<https://doi.org/10.1007/s11002-020-09541-9>
25. **Community Detection in Bipartite Networks with Stochastic Blockmodels**  
★ Tzu-Chi Yen, Daniel B. Larremore  
*Physical Review E*, 102, 032309, (2020)  
<https://doi.org/10.1103/PhysRevE.102.032309>
26. **Control of excitable systems is optimal near criticality**  
Kathleen Finlinson, Woodrow L. Shew, Daniel B. Larremore, Juan G. Restrepo  
*Physical Review Research*, 2, 033450, (2020)

<https://doi.org/10.1103/PhysRevResearch.2.033450>

27. **Reductions in commuting mobility correlate with geographic differences in SARS-CoV-2 prevalence in New York City**  
Stephen M. Kissler\*, Nishant Kishore\*, Malavika Prabhu\*, Dena Goffman\*, Yaakov Beilin\*, Ruth Landau, Cynthia Gyamfi-Bannerman, Brian T. Bateman, Daniel Katz, Jonathan Gal, Angela Bianco, Joanne Stone, Daniel B. Larremore, Caroline O. Buckee, Yonatan H. Grad  
*Nature Communications*, 11, 4674, (2020)  
<https://doi.org/10.1038/s41467-020-18271-5>
28. **Implications of test characteristics and population seroprevalence on 'immune passport' strategies**  
Daniel B. Larremore, Kate M. Bubar, Yonatan H. Grad  
*Clinical Infectious Diseases*, ciae1019, (2020)  
<https://doi.org/10.1093/cid/ciae1019>
29. **Longitudinal analysis of naturally acquired antibodies to PfEMP1 CIDR domain variants and their association with malaria protection**  
Nyamekye Obeng-Adjei\*, Daniel B. Larremore\*, Louise Turner, Aissata Ongoiba, Shanping Li, Safiatou Doumbo, Takele B. Yazew, Ogobara K. Doumbo, Kassoum Kayentao, Louis H. Miller, Boubacar Traore, Susan K. Pierce, Caroline O. Buckee, Thomas Lavstsen, Peter D. Crompton, Tuan M. Tran  
*JCI Insight*, 5 (12), e137262, (2020)  
<https://doi.org/10.1172/jci.insight.137262>
30. **Dynamics of Beneficial Epidemics**  
Andrew Berdahl\*, Christa Brelsford\*, Caterina De Bacco\*, Marion Dumas\*, Vanessa Ferdinand\*, Joshua A. Grochow\*, Laurent Hébert-Dufresne\*, Yoav Kallus\*, Christopher P. Kempes\*, Artemy Kolchinsky\*, Daniel B. Larremore\*, Eric Libby\*, Eleanor A. Power\*, Caitlin A. Stern\*, Brendan D. Tracey\*  
*Nature Scientific Reports*, 9 (15093), (2019)  
<https://doi.org/10.1038/s41598-019-50039-w>
31. **webweb: a tool for creating, displaying, and sharing interactive network visualizations on the web**  
★ K. Hunter Wapman, Daniel B. Larremore  
*Journal of Open Source Software*, 4 (40), 1458, (2019)  
<https://doi.org/10.21105/joss.01458>
32. **Productivity, prominence, and the effects of academic environment**  
Samuel F. Way, Allison C. Morgan, Daniel B. Larremore\*, Aaron Clauset\*  
*Proceedings of National Academy of Sciences USA*, 116 (18), (2019)  
<https://doi.org/10.1073/pnas.1817431116>
33. **Bayes-optimal estimation of overlap between populations of fixed size**  
Daniel B. Larremore  
*PLoS Computational Biology*, 15(3) e1006898, (2019)  
<https://doi.org/10.1371/journal.pcbi.1006898>
34. **Robust information capacity requires strong and balanced excitatory and inhibitory synapses**  
Vidit Agrawal, Andrew B. Cowley, Woodrow L. Shew, Daniel B. Larremore, Juan G. Restrepo, Qusay Alfaori  
*Chaos*, 28 103115, (2018)  
<https://doi.org/10.1063/1.5043429>
35. **A physical model for efficient ranking in networks**  
Caterina De Bacco\*, Daniel B. Larremore\*, Cristopher Moore.  
*Science Advances*, 4(7) eaar8260, (2018).

<https://doi.org/10.1126/sciadv.aar8260>

36. **Configuring random graph models with fixed degree sequences**  
† Bailey K. Fosdick\*, Daniel B. Larremore\*, Joel Nishimura\*, Johan Ugander\*  
*SIAM Review*, 60 (2) 315-355, (2018)  
<https://doi.org/10.1137/16M1087175>
37. **The misleading narrative of the canonical faculty productivity trajectory**  
Samuel F. Way, Allison C. Morgan, Aaron Clauset\*, Daniel B. Larremore\*  
*Proceedings of the National Academy of Sciences USA*, 114 (44) E9216-E9223, (2017)  
<https://doi.org/10.1073/pnas.1702121114>
38. **The ground truth about metadata and community detection in networks**  
Leto Peel\*, Daniel B. Larremore\*, Aaron Clauset  
*Science Advances*, 3 (5) e1602548, (2017)  
<https://doi.org/10.1126/sciadv.1602548>
39. **Community detection, link prediction, and layer interdependence in multilayer networks**  
Caterina De Bacco, Eleanor A. Power, Daniel B. Larremore, Cristopher Moore  
*Physical Review E*, 95 042317, (2017)  
<https://doi.org/10.1103/PhysRevE.95.042317>
40. **Gender, Productivity, and Prestige in Computer Science Faculty Hiring Networks**  
Samuel F. Way, Daniel B. Larremore, Aaron Clauset  
*Proc. 2016 World Wide Web Conference (WWW)*, 1169-1179, (2016)  
<https://doi.org/10.1145/2872427.2883073>
41. **Ape parasite origins of human malaria virulence genes**  
Daniel B. Larremore, Sesh A. Sundararaman, Weimin Liu, William R. Proto, Aaron Clauset, Dorothy E. Loy, Sheri Speede, Lindsey J. Plenderleith, Paul M. Sharp, Beatrice H. Hahn, Julian C. Rayner\*, Caroline O. Buckee\*  
*Nature Communications*, 6, 8368, (2015)  
<https://doi.org/10.1038/ncomms9368>
42. **Systematic inequality and hierarchy in faculty hiring networks**  
Aaron Clauset, Samuel Arbesman, Daniel B. Larremore  
*Science Advances*, 1, e1400005, (2015)  
<https://doi.org/10.1126/sciadv.1400005>
43. **Immune characterization of *P. falciparum* parasites with a shared genetic signature in a region of decreasing transmission**  
Amy K. Bei, Ababacar Diouf, Kazutoyo Miura, Daniel B. Larremore, Ulf Ribacke, Gregory Tullo, Eli L. Moss, Daniel E. Neafsey, Rachel F. Daniels, Amir E. Zeituni, Iguosadolo Nosamiefan, Sarah K. Volkman, Ambroise D. Ahouidi, Daouda Ndiaye, Tandakha Dieye, Souleymane Mboup, Caroline O. Buckee, Carole A. Long, Dyann F. Wirth  
*Infection and Immunity*, 83 (1), 276, (2015)  
<https://doi.org/10.1128/iai.01979-14>
44. **Efficiently inferring community structure in bipartite networks**  
Daniel B. Larremore, Aaron Clauset, Abigail Z. Jacobs  
*Physical Review E*, 90 (1), 012805, (2014)  
<https://doi.org/10.1103/PhysRevE.90.012805>
45. **Inhibition Causes Ceaseless Dynamics in Networks of Excitable Nodes**  
Daniel B. Larremore, Woodrow L. Shew, Edward Ott, Francesco Sorrentino, Juan G. Restrepo  
*Physical Review Letters*, 112, 138103, (2014)

<https://doi.org/10.1103/PhysRevLett.112.138103>

46. **A network approach to analyzing highly recombinant malaria parasite genes**  
Daniel B. Larremore, Aaron Clauset, Caroline O. Buckee  
PLoS Computational Biology, 9 (10), e1003268, (2013)  
<https://doi.org/10.1371/journal.pcbi.1003268>
47. **Social Climber attachment in forming networks produces phase transition in a measure of connectivity**  
Dane Taylor\*, Daniel B. Larremore\*  
Physical Review E, 86, 031140, (2012)  
<https://doi.org/10.1103/PhysRevE.86.031140>
48. **Statistical properties of avalanches in networks**  
Daniel B. Larremore, Marshall Y. Carpenter, Edward Ott, Juan G. Restrepo  
Physical Review E, 85, 066131, (2012)  
<https://doi.org/10.1103/PhysRevE.85.066131>
49. **Effects of network topology, transmission delays, and refractoriness on the response of coupled excitable systems to a stochastic stimulus**  
Daniel B. Larremore, Woodrow L. Shew, Edward Ott, Juan G. Restrepo  
Chaos, 21, 025117, (2011)  
<https://doi.org/10.1063/1.3600760>
50. **Predicting criticality and dynamic range in complex networks: effects of topology**  
Daniel B. Larremore, Woodrow L. Shew, Juan G. Restrepo  
Physical Review Letters, 106, 058101, (2011)  
<https://doi.org/10.1103/PhysRevLett.106.058101>

#### Peer-Reviewed Workshop Papers

51. **If the data do not speak for themselves, how ought we to speak for the data?**  
Ian Van Buskirk, Brian Zaharatos, Aaron Clauset, Daniel B. Larremore  
DARE Workshop Proceedings, AAAI ICWSM (2023).  
<https://doi.org/10.36190/2023.12>
52. **Case Study: Using Facebook Data to Monitor Adherence to Stay-at-home Orders in Colorado and Utah**  
Ryan M. Layer, Bailey K. Fosdick, Michael Bradshaw, Daniel B. Larremore, Paul Doherty  
ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Workshop on Humanitarian Data Mapping, (2020)  
<https://doi.org/10.1101/2020.06.04.20122093>

#### Peer-Reviewed Book Chapters

53. **Network models for malaria: antigens, dynamics, and evolution over space and time.**  
Lauren Childs, Daniel B. Larremore.  
Systems Medicine: Integrative Qualitative and Computational Approaches, (2019).  
<https://doi.org/10.1016/B978-0-12-801238-3.11512-0>
54. **Critical Dynamics in Complex Networks**  
Daniel B. Larremore, Woodrow L. Shew, Juan G. Restrepo  
Criticality in Neural Systems, Wiley, 365-392, (2014)  
[ISBN: 978-3-527-41104-7](https://doi.org/10.1016/B978-0-12-397822-2.00017-7)



## Peer-Reviewed Perspectives and Essays

55. **Concerns about SARS-CoV-2 evolution should not hold back efforts to expand vaccination**

Sarah Cobey, Daniel B. Larremore, Yonatan H. Grad, Marc Lipsitch

*Nature Reviews Immunology* (2021)

<https://doi.org/10.1038/s41577-021-00544-9>

56. **Rethinking Covid-19 Test Sensitivity — A Strategy for Containment**

Michael J. Mina, Roy Parker, Daniel B. Larremore

*The New England Journal of Medicine* (2020)

<https://doi.org/10.1056/NEJMp2025631>

57. **Data-driven predictions in the science of science**

Aaron Clauset, Daniel B. Larremore, Roberta Sinatra

*Science* 355, 477-480 (2017)

<https://doi.org/10.1126/science.aal4217>

## Other Publications or Preprints

58. **Test negative designs with uncertainty, sensitivity, and specificity**

★ Erik K. Johnson, Rebecca Kahn, Yonatan H. Grad, Marc Lipsitch, Daniel B. Larremore

*medRxiv* (2021)

<https://doi.org/10.1056/NEJMp2025631>

59. ***Plasmodium falciparum* population genetic complexity influences transcriptional profile and immune recognition of highly related genotypic clusters**

Amy K. Bei, Daniel B. Larremore, Kazutoyo Miura, Ababacar Diouf, Nicholas K. Baro, Rachel F. Daniels, Allison Griggs, Eli L. Moss, Daniel E. Neafsey, Awa B. Deme, Mouhamad Sy, Stephen Schaffner, Ambroise D. Ahouidi, Daouda Ndiaye, Tandakha Dieye, Souleymane Mboup, Caroline O. Buckee, Sarah K. Volkman, Carole A. Long, Dyann F. Wirth

*bioRxiv* (2020)

<https://doi.org/10.1101/2020.01.03.894220>

60. **On the records**

Andrew Berdahl, Uttam Bhat, Vanessa Ferdinand, Joshua Garland, Keyan Ghazi-Zahedi, Justin Grana, Joshua A. Grochow, Elizabeth Hobson, Yoav Kallus, Christopher P. Kempes, Artemy Kolchinsky, Daniel B. Larremore, Eric Libby, Eleanor A. Power, Brendan D. Tracey

*arXiv* (2017)

<https://doi.org/10.48550/arXiv.1705.04353>

61. **Progress is Infectious**

Daniel E. Geer Jr., Daniel B. Larremore

*IEEE Security & Privacy* 10(6) 94-95 (2012)

<https://doi.org/10.1109/MSP.2012.151>

## Funding

1. **Assessing Bias and Idiosyncrasies in Elite Scientific Peer Review**

2022-2025

Co-PI, SES-2219609, with PI Aaron Clauset (University of Colorado Boulder)

\$501,890 to University of Colorado Boulder

National Science Foundation: Social, Behavioral, and Economic Sciences

2. **Alan T. Waterman Award**

2022-2027

PI, SMA-2226343



\$1,000,000 to Larremore

3. **Model-informed vaccine prioritization strategies** **2020-2022**  
PI, 3U24GM132013-02S2  
\$140,000 to Larremore  
via MIDAS Coordination Center (MIDASNI2020-2)  
National Institutes of Health: National Institute of General Medical Science
4. **Integrated Data Science (Int dS):** **2020-2025**  
**Teams for Advancing Bioscience Discovery**  
Core Faculty, with PI Tom Cech and Co-PIs Manuel Lladser, Aaron Clauset, Robin Dowell, and Eric Vance (University of Colorado Boulder)  
\$0 to Larremore, \$3,000,000 to University of Colorado Boulder  
This is a training grant and its funds support the graduate training program, not individual PIs.  
National Science Foundation: Research Traineeship Program
5. **Causal, Statistical, and Mathematical Modeling with Serologic Data** **2020-2023**  
Co-PI via subcontract to University of Colorado Boulder, U01-CA261277, with PIs Marc Lipsitch and Michael Mina (Harvard T. H. Chan School of Public Health)  
\$179,565 to Larremore. \$4,584,395 total funded  
National Institutes of Health: National Cancer Institute
6. **Mapping the Structure and Dynamics of the Scientific Ecosystem** **2019-2023**  
PI, 19RT0301, with Co-Is Aaron Clauset (University of Colorado Boulder), Mirta Galesic (Santa Fe Institute), and Jennifer Dunne (Santa Fe Institute)  
\$2,426,815 to University of Colorado Boulder. (\$2,565,505 total funded.)  
Department of Defense: Minerva Program  
Air Force Office of Scientific Research
7. **Academic hiring networks and scientific productivity across disciplines** **2016-2020**  
PI, SMA-1633747, with Co-PI Mirta Galesic (Santa Fe Institute) and PI Aaron Clauset (University of Colorado Boulder)  
\$517,058 to University of Colorado Boulder. (\$550,000 total funded.)  
National Science Foundation: Social, Behavioral and Economic Sciences  
REU Supplement, 2018, \$5000 to Larremore  
REU Supplement, 2019, \$6000 to Larremore
8. **Network Assortativity** **2014**  
Proposer, with co-proposers Bailey Fosdick (Colorado State University), Joel Nishimura (Arizona State University), and Johan Ugander (Microsoft Research)  
\$2,250  
American Mathematical Society Mathematical Research Communities: collaboration grant

## Industry Experience and Advising

### **Darwin BioSciences**

Scientific Advisory Board

**Boulder, CO**

2020 - Present

### **Gambro Blood Component Technologies**

Research and Development Engineer

Engineering Intern II

Engineering Intern I

**Lakewood, CO**

2005 - 2007

Summer, 2005

Summer, 2004

## Invited Talks, Briefings, and Panels

1. **Linear Hierarchies in Complex Networks**

- 2023 Erdős–Rényi Prize Lecture, NetSci, Vienna, Austria. July 14, 2023.
2. **The Preeminence of Prestige**  
Briefing. National Academies of Science, Engineering, and Mathematics. Committee on Pathways to Doctoral Degrees in Computing. Washington D.C. May 9, 2023
  3. **Toward evidence-based strategies for improving diversity, equity, and inclusion in science**  
Panel Moderator. Metascience. Washington D.C. May 9, 2023
  4. **Quantifying hierarchy and dynamics in U.S. faculty hiring and retention**  
Harvard University. Opportunity Insights. Cambridge, MA. May 3, 2023
  5. **Data Dreams: U.S. faculty hiring and retention**  
Panelist. National Science Foundation Data & Analytics Symposium, February 27, 2023.
  6. **Quantifying hierarchy and dynamics in U.S. faculty hiring and retention**  
Stanford University. Research on Algorithms & Incentives in Networks (RAIN) Seminar. Stanford, CA. February 8, 2023
  7. **Quantifying hierarchy and dynamics in U.S. faculty hiring and retention**  
Rochester Institute of Technology. Science & Math Education Research Collaboration (SMERC) Seminar. Rochester, NY, January 30, 2023
  8. **Trends in US faculty hiring & retention from 10 years of data: a study of prestige, diversity & inequality**  
Santa Fe Institute Year In Review, Santa Fe Institute, Santa Fe, NM. December 15, 2022
  9. **Trends in US faculty hiring & retention from 10 years of data: a study of prestige, diversity & inequality**  
University of Colorado Boulder. Information Science Colloquium. Boulder, CO. November 30, 2022
  10. **Trends in US faculty hiring & retention from 10 years of data: a study of prestige, diversity & inequality**  
North Carolina State University. The Long View: Academic Big Data. November 28, 2022
  11. **Estimating the Mitigation Potential of Screening Programs for Infectious Diseases**  
Keynote, American Statistical Association Fall Meeting CO/WY Chapter, Denver, CO. November 11, 2022
  12. **Estimating the Mitigation Potential of Screening Programs for Infectious Diseases**  
Purdue University. Department of Biological Sciences Seminar, West Lafayette, IN. November 2, 2022
  13. **Quantifying hierarchy and dynamics in U.S. faculty hiring and retention**  
Academic Analytics Research Center. Research Webinar. October 21, 2022
  14. **Trends in US faculty hiring & retention from 10 years of data: a study of prestige, diversity & inequality**  
2022 Waterman Lecture, National Science Foundation. September 28, 2022
  15. **Quantifying hierarchy & dynamics in U.S. faculty hiring and retention**  
University of Colorado Boulder. Computer Science Colloquium. Boulder, CO. September 22, 2022
  16. **Estimating the Mitigation Potential of Screening Programs for Infectious Diseases**  
University of Colorado Boulder. Applied Math Colloquium. Boulder, CO. September 2, 2022
  17. **Estimating the Mitigation Potential of Screening Programs for Infectious Diseases**  
Contagion on Complex Social Systems 2022. Boulder, CO. August 11, 2022
  18. **Quantifying hierarchy & dynamics in U.S. faculty hiring and retention**  
Science of Science Summer School, Syracuse University. Syracuse, NY. August 8, 2022.
  19. **Optimal control of excitable systems near criticality**  
Physical Review Journal Club. December 7, 2021
  20. **Mathematical Models for Disease Mitigation via Testing**  
Ohio State University. Mathematical Biology and Applied Dynamics Seminar. October 28, 2021.
  21. **Vaccination Strategies: Prioritization, Dose Sparing, and Decision Making Under Uncertainty & Inequity**  
Society for Mathematical Biology, COVID-19 Vaccination Minisymposium. June 16, 2021
  22. **Modeling COVID-19 Testing Strategies: Mitigation vs Information**  
Yale School of Medicine. Laboratory Medicine Research Conference. June 2, 2021
  23. **Vaccination Strategies: Prioritization, Dose Sparing, and Decision Making Under Uncertainty & Inequity**  
University of Colorado Boulder. Computing Advisory Board, Department of Computer Science. April 15, 2021
  24. **Vaccination Strategies: Prioritization, Dose Sparing, and Decision Making Under Uncertainty & Inequity**  
Santa Fe Institute. Colloquium. March 17, 2021
  25. **Model-informed COVID-19 vaccine prioritization and dose-sparing strategies by age and serostatus**  
Grand Rounds. University of Colorado Anschutz School of Medicine. Division of Infectious Diseases. March 3, 2021
  26. **Model-informed COVID-19 vaccine prioritization strategies by age & serostatus**  
University of Colorado Boulder. Applied Mathematics Dynamics Seminar. January 28, 2021

27. **COVID-19 Testing Strategies: Mitigation vs Information**  
University of British Columbia. BC COVID-19 Modeling Group. December 16, 2020
28. **COVID-19 Testing Strategies: Mitigation vs Information**  
MIT Media Lab. Trust in Pandemic Tech Seminar. December 4, 2020
29. **Model-informed COVID-19 Vaccine Prioritization by Age and Serostatus**  
Models of Infectious Disease Agent Study (MIDAS) Network seminar. November 20, 2020
30. **Estimating SARS-CoV-2 seroprevalence & epidemiological parameters with uncertainty from serological surveys**  
World Health Organization. Solidarity II Sero-Epidemiology Meeting. November 5, 2020
31. **Model-informed COVID-19 Vaccine Prioritization by Age and Serostatus**  
EU/EEA National Immunisation Technical Advisory Group. October 15, 2020
32. **Surveillance Testing of SARS-CoV-2**  
University of Texas at Austin. UT Austin COVID-19 Modeling Consortium. September 23, 2020
33. **Surveillance Testing of SARS-CoV-2**  
McGill University. McGill Genome Center. August 13, 2020
34. **COVID-19 Briefing on Testing**  
Panelist. Ergo COVID-19 Intelligence Forum, New York City. August 11, 2020
35. **Surveillance Testing of SARS-CoV-2**  
New York Genome Center. COVID-19 Genomics Research Network Meeting, August 3, 2020
36. **Modeling the impacts of test sensitivity, frequency, and turnaround time for COVID-19 surveillance**  
University of Florida College of Medicine. CSQUID/CIDID Seminar. Gainesville, FL. July 29, 2020
37. **SARS-CoV-2 Seroprevalence Estimation, Study Design, and Modeling**  
University of Colorado Medical School. BioStatistics Seminar. June 17, 2020
38. **Explaining Gender Differences in Academics' Career Trajectories**  
Webinar, Computational Social Science Society of the Americas. May 6, 2020
39. **How do Infectious Disease Models Work?**  
University of Colorado Boulder. Collabeeration, BioFrontiers Institute. April 1, 2020
40. **Complex networks and P. falciparum: from evolution to epidemiology**  
University of Colorado Medical School. Computational BioSciences Seminar. Mar 9, 2020
41. **Complex networks, math, and malaria: from evolution to epidemiology**  
University of Colorado Boulder. Applied Mathematics Colloquium,. January 17, 2020
42. **Complex networks and P. falciparum: from evolution to epidemiology**  
Colorado School of Mines. Applied Math & Statistics Colloquium. Nov 8, 2019
43. **Development of Trustworthy AI**  
University of Colorado Boulder. Panelist. Mozilla Foundation & CU Data Science Team. October 8, 2019
44. **Complex networks and P. falciparum: from evolution to epidemiology**  
Harvard T. H. Chan School of Public Health. Infectious Disease Epidemiology Seminar. May 9, 2019
45. **Which community detection method is best?**  
HHMI Janelia. Analysis and Interpretation of Connectomes. May 22, 2018
46. **A physical model for efficient ranking in networks**  
UNC Chapel Hill. Applied Mathematics Seminar. Apr 11, 2018
47. **A physical model for efficient ranking in networks**  
Duke University. Duke Network Analysis Center Seminar. Apr 10, 2018
48. **Paper Unwind: The misleading narrative of the canonical faculty productivity trajectory**  
CompleNet, Boston, MA. March 4, 2018
49. **Gender, prestige, and productivity in academic hiring networks and career trajectories**  
University of Pennsylvania. Annenberg School of Communication. Feb 13, 2018
50. **A physical model for efficient ranking in networks**  
Joint Mathematics Meeting, San Diego, CA. Special Session: Network Science. Jan 12, 2018
51. **Estimating the entropy of activity in excitable networks**  
Joint Mathematics Meeting, San Diego, CA. Special Session: Emergent Phenomena in Discrete Models. Jan 12, 2018
52. **The ground truth about metadata and community detection in networks**  
Joint Mathematics Meeting, San Diego, CA. Special Session: Theory, Practice, and Applications of Graph Clustering. Jan 11, 2018
53. **Large-scale structures in networks: hidden communities and latent hierarchies**

NetSciX, Network Science School, Hangzhou, China. Jan 5, 2018

54. **The assembly of prestige and status in networks**  
Santa Fe Institute. Omidyar Network Applied Complexity Meeting. Dec 12, 2017
55. **A physical model for efficient ranking in networks**  
University of Arkansas, Fayetteville. Physics Colloquium. Nov 17, 2017
56. **A physical model for efficient ranking in networks**  
University of Michigan. Center for the Study of Complex Systems Seminar. Nov 9, 2017
57. **Gender, prestige, and productivity in academic hiring networks and career trajectories**  
NSF-FAST: Machine Learning for Discovery Science, Yerevan, Armenia. Oct 20, 2017
58. **The dynamics of beneficial epidemics**  
NetSci 2017. Dynamics of/on Complex Networks Satellite Symposium, Indianapolis, IN. June 20, 2017
59. **Gender, prestige, and productivity in academic hiring networks and career trajectories**  
Workshop on Gendered Creative Teams, Central European Univ., Budapest, Hungary. May 25, 2017
60. **Gender, prestige, and productivity in academic hiring networks and career trajectories**  
UC Berkeley. Seminar, Berkeley Institute for Data Science. Mar 17, 2017
61. **The assembly of prestige and status in networks**  
Influence, Complexity and Networks, Dialog Group, Austin, TX. Feb 23, 2017
62. **The ground truth about metadata and community detection in networks**  
University of Houston. Networks Seminar. Oct 28, 2016
63. **Gender, prestige, and productivity in faculty hiring networks**  
NetSci 2016. Quantifying Success Satellite Symposium, Seoul, Korea. June 1, 2016
64. **Networks and the evolution of malaria's virulence in humans and apes**  
Northwestern University. Network Frontiers Workshop, Northwestern Institute of Complex Systems. Dec 7, 2015
65. **Networks in two acts: faculty hiring hierarchies and malaria's evolving virulence**  
Clarkson University, Arts & Sciences Seminar, Potsdam, NY. Nov 13, 2015
66. **Networks and the evolution of malaria's virulence in humans and apes**  
Clarkson University, Mathematics Colloquium, Potsdam, NY. Nov 12, 2015
67. **Networks, inference, and the evolution of malaria's virulence in humans and apes**  
University of New Mexico. Mechanical Engineering Seminar. Nov 6, 2015
68. **A complex networks approach to malaria's genetic recombination dynamics**  
SIAM Conference on Applications of Dynamical Systems (DS15), Minisymposium, Snowbird, UT. May 15, 2015
69. **Using networks to analyze rapid genetic recombination in malaria parasites**  
University of Colorado Boulder. Dynamics & Complex Systems Seminar. April 9, 2015
70. **Complex networks, rapid genetic recombination, and tricky malaria antigens**  
Western New England University. Mathematics Colloquium. Nov 7, 2014
71. **Efficiently inferring community structure in bipartite networks**  
Brown University. Seminar at Network Science and Graph Algorithms Program, ICERM. Mar 4, 2014
72. **Ceaseless critical dynamics in excitable networks with inhibitory nodes**  
NetSci 2014. Information, Self-Organizing Dynamics, and Synchronization on Complex Networks (ISODS) Satellite Symposium, Berkeley, CA. June 3, 2014
73. **Critical dynamics in balanced excitable networks: neuronal avalanches, dynamic range, and ceaseless activity**  
University of Colorado Boulder. Dynamics & Complex Systems Seminar. Feb 28, 2013
74. **Critical dynamics in balanced excitable networks: neuronal avalanches, dynamic range, and ceaseless activity**  
Northeastern University. Seminar, Center for Complex Network Research. Feb 5, 2013
75. **Predicting criticality and dynamic range in complex networks: effects of topology**  
SIAM Conf. on Applications of Dynamical Systems (DS11). Minisymposium. Snowbird, UT, May 23, 2011

## Contributed Talks, Briefings, and Panels

- NIH SeroNet Investigators Meeting. March 24, 2022
- Int'l Conf. on Computational Social Science (IC2S2), University of Amsterdam. July 19, 2019
- SIAM Network Science (SIAM NS19), Snowbird, UT. May 23, 2019

- BioFrontiers Institute Advisory Board, Boulder, CO. April 17, 2019
- ASTMH Annual Meeting, poster, New Orleans, LA. October 31, 2018
- d3.js Boulder Meetup, Boulder, CO. August 30, 2018
- Int'l Conf. on Computational Social Science (IC2S2), Northwestern University. July 14, 2018
- NetSci, Paris, France. June 15, 2018
- Genetic Epidemiology of Malaria – poster [best poster award], Sanger Institute, UK. June 13, 2018
- CompleNet, Network Science Institute at Northeastern University, Boston, MA. March 5, 2018
- Dynamical Systems Seminar, CU Boulder, Boulder, CO. Nov 2, 2017
- StatOptML Seminar, CU Boulder, Boulder, CO. Sept 12, 2017
- NetSci, Indianapolis, IN. June 21, 2017
- Complex Systems Summer School, Santa Fe Institute, Santa Fe, NM. June 14, 2017
- YConf, YCombinator Research, San Francisco, CA. June 10, 2017
- Santa Fe Science Writers' Workshop, Santa Fe Institute, Santa Fe, NM. May 2, 2017
- Outside In seminar, Santa Fe Institute, Santa Fe, NM. October 19, 2016
- Conference on Complex Systems (CCS), Amsterdam, NL September 22, 2016
- SIAM Network Science (SIAM NS16), Boston, MA July 15, 2016
- Int'l Conf. on Computational Social Science (IC2S2), Northwestern University. June 24, 2016
- NetSci, Seoul, Korea. June 2, 2016
- Int'l Conf. on the Science of Science, Library of Congress, Washington D.C. April 7, 2016
- Los Alamos Rotary Club, Los Alamos, NM. March 15, 2016
- NetSci, Zaragoza, Spain. June 3, 2015
- Freeman Symposium, Harvard T. H. Chan School of Public Health. April 10, 2015
- Boston Area Parasitology Symposium (BAPS), Boston, MA. December 8, 2014
- Defeating Malaria: from genes to the globe – poster Harvard School of Public Health. December 2, 2014
- ASTMH – poster, New Orleans, LA. November 4, 2014
- Harvard Channing Network Science Seminar, Boston, MA. October 31, 2014
- NetSci – poster [best poster award], Berkeley, CA. June 4, 2014
- BioMalPar/EVIMalar, EMBL, Heidelberg, Germany. May 13, 2014
- Network Frontiers Workshop, NICO, Northwestern University. December 6, 2013
- ASTMH – poster, Washington D.C. November 15, 2013
- Oxford Tropical Network, KEMRI, Kilifi, Oxford-Wellcome Trust, Kenya. October 1, 2013
- Networks Journal Club, OCIAM, Oxford University, UK. March 8, 2013
- Dynamics Days – poster, University of Colorado Boulder. January 3, 2013
- Freeman Symposium, Harvard School of Public Health. December 14, 2012
- Ph.D. Dissertation Defense, University of Colorado Boulder. April 5, 2012
- Front Range Applied Mathematics Student Conference, Univ. of Colorado Denver. March 3, 2012
- Dynamics Days – poster, University of Maryland. January 3, 2012
- Comprehensive Examination, University of Colorado Boulder. September 27, 2011
- Front Range Applied Mathematics Student Conference, Univ. of Colorado Denver. March 5, 2011
- Dynamics Days 2011, Duke University. January 6, 2011
- Complex and Dynamical Systems Seminar, University of Colorado Boulder. October 20, 2010
- Nonlinear Dynamics of Networks (NTD10) – poster, University of Maryland. April 4, 2010
- Complex and Dynamical Systems Seminar, University of Colorado Boulder. April 1, 2010
- Front Range Applied Mathematics Student Conference, Univ. of Colorado Denver. March 6, 2010
- Dynamics Days 2010 – poster, Northwestern University. January 3, 2010

## Supported Workshops

- Model-Based Research and Reproducibility Workshop, Center for Open Science. Feb 4-5, 2020
- Network Null Models Working Group, NIMBIOS. Oct 23-26, 2019
- Decision Processes in Networks, Triennial Choice Symposium. May 29-June 2, 2019
- The Dynamics of Discovery: Is Science Slowing and Can We Speed It Up?. March 16-17, 2018

## Affiliations and Accreditations

- Models of Infectious Disease Agent Study Network – Member 2020 - Present
- Network Science Society – Member 2014 - Present

• American Mathematical Society – Member	2014 - present
• American Society of Tropical Medicine and Hygiene – Member	2013 - present
• Society of Industrial and Applied Mathematics – Member	2008 - present
• Human Subjects Research (IRB) Certification	2016 - present
• National Postdoctoral Association – Member	2012 - 2015
• Arts and Sciences Dean's Teaching Assistant Fellow	Spring 2010

## Advising

### Postdocs

Dr. Katherine Wootton, Computer Science	2021 - 2022
Dr. Eun Lee, Computer Science	2020 - 2022

### PhD Students

Nicholas LaBerge, Computer Science (co-adv: Aaron Clauset)	2019 - Present
Ian van Buskirk, Computer Science (co-adv: Aaron Clauset)	2019 - Present
Kate Bubar, Computer Science	2020 - Present
Katherine Spoon, Computer Science (co-adv: Aaron Clauset)	2020 - Present
Casey Middleton, Computer Science	2021 - Present
Dr. Tzu-Chi Yen, Computer Science (co-adv: Josh Grochow)	2018 - 2023
Thesis: Structure, Inference, and Optimization in Complex Networks	
Dr. Kenneth Hunter Wapman, Computer Science	2019 - 2023
Thesis: Hierarchy and Structure in Academic and Romantic Markets	
Dr. Erik Johnson, Applied Mathematics	2019 - 2021
Thesis: Measuring image resolution in super-resolution microscopy and Bayesian estimation of population size and overlap and vaccine effectiveness	

### PhD Rotation Students (IQ Biology)

Vanessa Maybruck	2022
Casey Middleton	2021
Sharon Wu	2020
Elise Tate	2019
Kate Bubar	2019
Sierra Jech	2019
Phillip Benson	2019
Dieu My Nguyen	2018
Michael Smallegan	2018

### Masters Students

Upasana Dutta, M.S. Computer Science, Colorado	2022
Aaron Aeng, M.S. Computer Science, Colorado	2020
Thesis: Matchbox: Adaptive Comparison Graphs for Restricted Tournaments	

### Undergraduate Students

Aloha Churchill, University of Colorado Boulder	2020 - 2021
Suchita Lulla, University of Colorado Boulder	2018 - 2021
Aparajithan Venkateswaran, University of Colorado Boulder	2018 - 2020
Thesis: Understanding SpringRank through Random Utility Models, Identifiability, and Online Updates	
Mark Wilmes, Computer Science	2019
Thesis: Using Machine Learning to Identify Files on Disk that Contain Sensitive Information	
Suyog Soti, University of Colorado Boulder	2018 - 2019
Katie Younglove, University of Colorado Boulder	2018 - 2019
Robert Steele, University of Colorado Boulder	2018
Phuc Nguyen, Macalester College via the Santa Fe Institute	2017
Maya Banks, Carleton College via the Santa Fe Institute	2017

## High School Students

William McKinnon, High School Student, Santa Fe Institute  
Kat Wicks, High School Student, Santa Fe Institute

2016  
2015 - 2016

## Teaching

### University of Colorado Boulder

- CSCI 4830 (Computational and Mathematical Modeling of Infectious Diseases) Spring 2023
- CSCI 2897 (Calculating Biological Quantities) Fall 2022
- CSCI 2897 (Calculating Biological Quantities) Fall 2021
- CSCI 2897 (Calculating Biological Quantities) [new course] Spring 2021
- CSCI 5352 (Network Analysis and Modeling) Fall 2020
- CSCI 5352 (Network Analysis and Modeling) Fall 2019
- CSCI 4802/5802 (Data Science Team) Fall 2019
- CSCI 4802/5802 (Data Science Team) Spring 2019
- CSCI 5352 (Network Analysis and Modeling) Fall 2018
- CSCI 3022 (Intro to Data Science with Probability and Statistics) Fall 2018
- CSCI 3022 (Intro to Data Science with Probability and Statistics) Spring 2018
- CSCI 3022 (Intro to Data Science with Probability and Statistics) [new course] Fall 2017

### How to Science (Series)

- Data Visualization
- Giving a Talk
- Clean Code
- Peer Review
- LaTeX

### Complex Networks Winter Workshop

- Networks and Hierarchies
- Large-scale structures in networks: Hidden communities and latent hierarchies

### Quebec City, Quebec

Jan 6, 2021  
Dec 15, 2019

### NetSci 2019 International Conference on Network Science

- Large-scale structures in networks: Hidden communities and latent hierarchies

### Burlington, VT, USA

May 27, 2019

### Santa Fe Institute - Complex Systems Summer School

- Networks & Hierarchies
- Networks & Hierarchies

### Santa Fe, NM, USA

June 24-25, 2019  
June 25-26, 2018

### University of Michigan

- Communities, hierarchies: large-scale network structure

### Ann Arbor, MI, USA

Nov 10, 2017

### Harvard School of Public Health

- Introduction to Modeling Infectious Disease (networks)

### Boston, MA, USA

July 24 & 27, 2014

### Kenya Medical Research Institute (KEMRI)

- TModNet Modeling Workshop (networks in genetics & epidemiology)

### Kilifi, Kenya

October 3, 2013

### University of Colorado - Predoctoral Boulder, CO, USA

- Instructor of Record – APPM 2350, Calculus III (Multivariable Calculus)
- Instructor of Record – APPM 2350, Calculus III (Multivariable Calculus)
- Lead Teaching Asst. – Applied Mathematics
- Teaching Asst. – APPM 1360, Calculus II
- Teaching Asst. – APPM 2360, Ordinary Differential Equations
- Teaching Asst. – APPM 2350, Calculus III (Multivariable Calculus)
- Teaching Asst. – APPM 2350, Calculus III (Multivariable Calculus)
- Teaching Asst. – APPM 2360, Ordinary Differential Equations
- Teaching Asst. – APPM 2350, Calculus III (Multivariable Calculus)

Spring 2012  
Fall 2011  
2009 - 2010  
Fall 2009  
Spring 2009  
Fall 2008  
Summer 2008  
Spring 2008  
Fall 2007



## Editorial and Referee Work

### **PLOS Computational Biology**

Academic Editor

**San Francisco, CA**

2022 - Present

### **Guest Editing**

- PLOS Biology

2018

### **Grant Review**

- NSF - Science of Science: Discovery, Communication and Impact (SBE)
- NSF - Science of Science and Information Policy (SBE)
- NSF - Dynamical Systems (DMS)
- NSF/NIH - Science of Science: Discovery, Communication, Impact & SCISIPBIO (SBE)

### **Journal Review**

- ACM Transactions on Knowledge Discovery from Data (TKDD)
  - American Journal of Epidemiology
  - Communications of the ACM
  - Europhysics Letters (EPL)
  - IEEE Security and Privacy
  - Journal of the Association for Information Science and Technology (JASIST)
  - Journal of Complex Networks
  - Journal of Infectious Diseases
  - Journal of Machine Learning Research (JMLR)
  - Journal of Statistical Mechanics: theory and experiment (JSTAT)
  - Journal of Theoretical Biology
  - Malaria Journal
  - Methods in Ecology and Evolution
  - Nature
  - Nature Communications
  - Nature Scientific Reports
  - Nature Microbiology
  - New England Journal of Medicine
  - Physical Review Letters (PRL)
  - Physical Review X (PRX)
  - Physical Review E (PRE)
  - Physical Review Research (PRR)
  - Physica A
  - PLOS Biology
  - PLOS Computational Biology
  - PLOS Neglected Tropical Diseases
  - PLOS ONE
  - Proceedings of the National Academy of Sciences of the USA (PNAS)
  - Proceedings of the Royal Society A (Proc A)
  - Proceedings of the Royal Society B (Proc B)
  - Science
  - Science Advances
  - Science Translational Medicine
  - SIAM Journal on Mathematics of Data Science (SIMODS)
  - Vaccines
  - Wellcome Open Research
- ### **Conference Review**
- Program Committee, Atlanta Conference on Science and Innovation, ATLC 2023
  - MIDAS Network Annual Meeting, 2022, 2023
  - Program Committee, Int'l Conf. on Computational Social Science (IC2S2) 2017, 2018, 2019, 2020, 2021
  - Program Committee, NetSci 2017, 2019, 2020, 2022, 2023

- Program Committee, ICWSM Workshop: Beyond Online Data: Tackling Challenging Social Science Questions, 2018
- Program Committee, 9th Int'l Conf. on Complex Networks (CompleNet) 2018
- Program Committee, NetSciX 2018, 2020
- Program Committee, Int'l World Wide Web Conf. (WWW) 2017, 2018
- Program Committee, SIAM Network Science 2016 - 2019
- Program Committee, 9th Int'l Conf. on Web Search and Data Mining (WSDM) 2016
- Subreviewer, AAAI Conference on Artificial Learning (AAAI) 2014

## University and Professional Service

### Conferences, Workshops, Speaker Series (Organizer or co-organizer)

- International Conference on the Science of Science & Innovation June 7-9, 2022  
Chair, Program Committee  
National Academy of Science, Washington D.C.
- A New Synthesis for the Science of Science May 4-6, 2022  
Co-Organizer (with A. Clauset, M. Galesic)  
Santa Fe Institute
- Statistical Inference for Network Models - A Satellite Symposium of the NetSci Conference  
Creator and Organizer  
Rome, Italy (with T. Peixoto, T. Eliassi-Rad, B. Fospick, and A. Clauset) June, 2020  
Burlington, Vermont (with T. Eliassi-Rad, B. Fospick, and A. Clauset) May 27, 2019  
Paris, France (with T. Eliassi-Rad, B. Fospick, and A. Clauset) June 11, 2018  
Indianapolis, Indiana (with T. Broderick, B. Fospick, and A. Clauset) June 19, 2017  
Seoul, Korea (with B. Fospick, A. Z. Jacobs, and A. Clauset) May 31, 2016  
Zaragoza, Spain (with L. Peel, A. Z. Jacobs, and A. Clauset) June 1, 2015  
Berkeley, California (with L. Peel, A. Z. Jacobs, and A. Clauset) June 2, 2014
- Slice of Science 2016 - 2017  
Organizer  
Santa Fe, NM. Ongoing Santa Fe Institute talk series.
- Applied Network Science at Longwood Seminar Series 2014 - 2015  
Conceived and organized with John Platig  
Harvard School of Public Health.  
Monthly seminar for network research with biological, public health, or medical application
- Harvard School of Public Health Infectious Disease Epidemiology Seminar Series 2014  
Organized with William Hanage
- Mathematics Research Community Workshop on Network Science June 24-30, 2014  
Assisting Aaron Clauset, Mason Porter, & David Kempe  
American Mathematical Society, Snowbird, UT
- TDMoNet Modeling Workshop (networks in genetics & epidemiology) Oct 3, 2013  
Organized with Caroline O. Buckee  
Kenya Medical Research Institute (KEMRI), Kilifi, Kenya
- Front Range Applied Mathematics Student Conference March 14, 2009  
Organized with Daniel N. Kaslovsky, Anne Dougherty, et al.  
University of Colorado Denver
- SIAM Graduate Student Chapter Speaker Series Spring 2009  
Co-organized with Daniel N. Kaslovsky  
University of Colorado Boulder

### PhD Thesis Committees

- David Greenblott, Chemical and Biological Engineering. Adv: Ted Randolph Expected 2024
- Zach Maas, Molecular, Cellular, and Developmental Biology. Adv: Robin Dowell Expected 2024
- Sam Zhang, Applied Mathematics. Adv: Aaron Clauset Expected 2024
- Owen Martin, Computer Science. Adv: Orit Peleg Expected 2024
- Lucas Hayne, Computer Science. Adv: McKell Carsten Expected 2023
- Behzad Vahedi Torghabeh, Geography. Adv: Morteza Karimzadeh Expected 2023
- Aislyn Keyes, Ecology & Evolutionary Biology. Adv: Laura Dee 2023

- Graham Kesler O'Connor, Applied Mathematics. Adv: Manuel Lladser 2022
- Nicholas Landry, Applied Mathematics. Adv: Juan G. Restrepo 2022
- Samantha Molnar, Computer Science. Adv: Elizabeth Bradley 2021
- Allison Morgan, Computer Science. Adv: Aaron Clauset 2021
- Ignacio Tripodi, Computer Science. Adv: Robin Dowell 2020
- Antony Pearson, Applied Mathematics, Adv: Manuel Lladser 2020
- Lee Korshoj, Chem. & Biol. Engr. Adv: Anushree Chatterjee, Prashant Nagpal 2020
- Richard Carter Tillquist, Applied Mathematics, Adv: Manuel Lladser 2020
- Anna Broido, Computer Science. Adv: Aaron Clauset 2019
- Amir Ghasemian, Computer Science. Adv: Aaron Clauset 2018
- Jean-Gabriel Young, Physics, Université Laval, Adv: Louis Dube 2018

#### **Undergraduate Thesis Committees**

- Megan Hupka, Molecular, Cellular, and Dev. Biol. Adv: Luis Zea, Louis Stodeick 2023
- Kieran Zylstra, Computer Science, Adv: Ryan Layer 2022
- Maxwell Wenzel, Computer Science. Adv: James Martin 2020
- Ian Wilkins, Computer Science. Adv: James Martin 2020
- Maxine Hartnett, Computer Science. Adv: Elizabeth Bradley 2019
- Brandon Zink, Computer Science. Adv: Rhonda Hoenigman 2019

#### **Institutional Committees, University of Colorado Boulder**

##### **Campus**

- Provost's Faculty Achievement Awards Committee 2022 - 2023
- Vaccine Policy & Guidance Subcommittee 2021
- COVID-19 Scientific Advisory Committee 2020 - 2023
- Office of Discrimination and Harassment Review 2010 - 2012

##### **College of Engineering and Applied Sciences**

- Dean's Search Committee 2022

##### **Department of Computer Science**

- Executive Committee 2022 - Present
- Computational Biology Minor, Curriculum Committee 2019 - Present
- Computer Science Faculty Search Committee 2019 - 2020
- Pedagogy Committee 2021 - 2022
- Undergraduate Curriculum Committee 2018 - 2019

##### **BioFrontiers Institute**

- EMPOWERS Oversight Committee 2020 - Present
- BioFrontiers Council 2017 - Present
- Social Committee (BioFunTiers) 2017 - 2018

##### **Interdisciplinary Quantitative Biology Program (IQBio)**

- Academic Advising Committee 2018 - 2020
- Curriculum Committee 2017 - Present
- Graduate Admissions 2017 - 2018

#### **Institutional Committees, Santa Fe Institute**

- Complex Systems Summer School Admissions 2016 - 2017
- Omidyar Fellowship Review & Selection 2015 - 2016

#### **Outreach Talks and Lectures**

- **What I know now that I wish I'd known as a postdoc** October 20, 2022  
Santa Fe Institute  
JSMF – SFI Postdocs in Complexity Conference IX
- Science of Science Summer School (S4), Syracuse University August 8, 2022  
Mentor
- **Prioritizing Vaccines: Who Should Get Them First and Why?** November 20, 2020  
BioFrontiers Institute Community COVID-19 Session III

- **COVID-19 Surveillance Testing: A Way Out?** September 17, 2020  
College of Engineering & Applied Sciences CU Boulder COVID-19 Webinar
- **How do infectious disease models work?** April 13, 2020  
BioFrontiers Institute Community COVID-19 Session I
- **What it is to be a Scientist** May 4, 2016  
Santa Fe Institute  
Keynote, SFI High School Prize for Scientific Excellence
- **What it is to be a Scientist** 2016-2019  
Santa Fe Institute  
REU Program Mentorship

## Other Service and Outreach

### **Faculty Sanity**

A monthly, open, unstructured meetup for junior faculty at CU Boulder, all departments.  
Founder, Organizer

**Boulder, CO**

2018 - 2021

### **March for Science - Santa Fe**

Lead Organizer

**Santa Fe, NM**

April 22, 2017

### **New Mexico Corrections / Penitentiary of New Mexico**

Volunteer math teacher and tutor

**Santa Fe, NM**

2016 - 2017

### **Santa Fe Alliance for Science**

Science fair judge

**Santa Fe, NM**

2015 - 2017

### **Greater University Service Foundation, Inc.**

Director

Co-founder and Secretary

**St. Louis, MO**

2008 - 2022

2006 - 2008

### **The Boulder County AIDS Project**

Volunteer math tutor; grocery packing and delivery.

**Boulder, CO**

2005 - 2011