

Aaron Clauset

CONTACT INFORMATION	Department of Computer Science University of Colorado at Boulder 430 UCB Boulder CO, 80309-0430 USA	<i>voice:</i> 303-492-6643 <i>fax:</i> 303-492-2844 <i>email:</i> aaron.clauset@colorado.edu <i>web:</i> www.santafe.edu/~aaronc
RESEARCH INTERESTS	Network science (methods, theories, applications); Data science, statistical inference, machine learning; Models and simulations; Collective dynamics and complex systems; Rare events, power laws and forecasting; Computational social science; Computational biology and biological computation.	
EDUCATION	Ph.D. Computer Science, University of New Mexico (with distinction) 2002 – 2006 B.S. Physics, Haverford College (with honors and concentration in Computer Science) 1997 – 2001	
ACADEMIC POSITIONS	Assistant Professor, Computer Science Dept., <i>University of Colorado, Boulder</i> 2010 – present Assistant Professor, BioFrontiers Institute, <i>University of Colorado, Boulder</i> 2010 – present External Faculty, <i>Santa Fe Institute</i> 2012 – present Affiliated Faculty, Ecology & Evo. Biology Dept., <i>University of Colorado, Boulder</i> 2011 – present Affiliated Faculty, Applied Mathematics Dept., <i>University of Colorado, Boulder</i> 2012 – present Affiliated Faculty, Information Dept., <i>University of Colorado, Boulder</i> 2015 – present Omidyar Fellow, <i>Santa Fe Institute</i> 2006 – 2010	
INDUSTRY POSITIONS	Scientific & Technical Consultant, <i>FullContact Inc.</i> , Denver CO 2015 – present Scientific & Technical Consultant, <i>Institute for Defense Analysis</i> , Alexandria VA 2010 – 2014 Corporate Advisory Board, <i>33across LLC</i> , New York NY 2008 – 2012 Scientific & Technical Consultant, <i>33across LLC</i> , New York NY 2007 – 2012 Strategy & Management Consultant, <i>FischerJordan LLC</i> , New York NY 2005 Project Scientist, <i>Targacept Inc.</i> , Winston-Salem NC 2001 – 2002	
HONORS & AWARDS (SELECTED)	Erdős-Rényi Prize in Network Science 2016 NSF CAREER Award 2015 – 2020 Kavli Fellow 2014 Santa Fe Institute Public Lecture Series (http://bit.ly/I6t9gf) 2010 Graduation Speaker, U. New Mexico School of Engineering Convocation 2006 Outstanding Graduate Student Award, U. New Mexico School of Engineering 2006	
GOOGLE SCHOLAR	scholar.google.com/citations?user=e7VI_HcAAAAJ	
	* indicates an undergraduate coauthor	
MANUSCRIPTS UNDER REVIEW	A. Ghasemian, H. Hosseinmardi, and A. Clauset , “Evaluating and Comparing Overfit in Models of Network Community Structure.” Submitted (2017). L. R. Thompson, J. G. Sanders, [et al. including A. Clauset], “The Earth Microbiome Project.” Submitted (2017). S. F. Way, A. C. Morgan, A. Clauset , and D. B. Larremore, “The misleading narrative of the canonical faculty productivity trajectory.” Submitted (2017). (Preprint at arxiv:1612.08228) [Also accepted at <i>ICWSM 2017</i> , social science track (non-archival)] L. Fortunato and A. Clauset , “Revisiting the effect of red on competition in humans.” Submitted (2016). (Preprint at http://dx.doi.org/10.1101/086710)	

R. C. Tilquist, L. Shoemaker, K. B. Knight, and **A. Clauset**, “The Evolution of Primate Body Size: Left-skewness, Maximum Size, and Copes Rule.” Submitted (2016). (Preprint at <http://dx.doi.org/10.1101/092866>)

PUBLICATIONS
(REFEREED)

N. Connor, A. Barbaran and **A. Clauset**, “Using null models to infer microbial co-occurrence networks.” *PLOS ONE* **12**(5), e0176751 (2017). (Preprint at <http://dx.doi.org/10.1101/070789>)

L. Peel, D. B. Larremore, and **A. Clauset**, “The ground truth about metadata and community detection in networks.” *Science Advances* **3**(5), e1602548 (2017). (Preprint at [arxiv:1608.05878](https://arxiv.org/abs/1608.05878))

D. Taylor, S. A. Myers, **A. Clauset**, M. A. Porter, P. J. Mucha, “Eigenvector-Based Centrality Measures for Temporal Networks.” *Multiscale Modeling and Simulation* **15**(1), 537–574 (2017). (Preprint at [arxiv:1507.01266](https://arxiv.org/abs/1507.01266))

A. Ghasemian, P. Zhang, **A. Clauset**, C. Moore, and L. Peel, “Detectability thresholds and optimal algorithms for community structure in dynamic networks.” *Physical Review X* **6**, 031005 (2016). (Preprint at [arxiv:1506.06179](https://arxiv.org/abs/1506.06179))

M. E. J. Newman and **A. Clauset**, “Structure and inference in annotated networks.” *Nature Communications* **7**, 11863 (2016). (Preprint at [arxiv:1507.04001](https://arxiv.org/abs/1507.04001))
[Included by *Nat. Comms.* in a special collection of papers on “Network structure and dynamics”]

S. F. Way, D. B. Larremore, and **A. Clauset**, “Gender, productivity, and prestige in computer science faculty hiring networks.” *Proc. 25th International Conference on World Wide Web (WWW)*, 1169–1179 (2016). (Preprint at [arxiv:1602.00795](https://arxiv.org/abs/1602.00795))

L. Peel and **A. Clauset**, “Predicting sports scoring dynamics with restoration and anti-persistence.” *Proc. 2015 IEEE International Conference on Data Mining (ICDM)*, 339–348 (2015). (Preprint at [arxiv:1504.05872](https://arxiv.org/abs/1504.05872))

D. B. Larremore, S. A. Sundararaman, W. Liu, W. R. Proto, **A. Clauset**, D. E. Loy, S. Speede, P. M. Sharp, B. H. Hahn, J. C. Rayner, and C. O. Buckee, “Ape origins of human malaria virulence genes.” *Nature Communications* **6**, 8368 (2015).

A. Z. Jacobs, S. F. Way, J. Ugander and **A. Clauset**, “Assembling thefacebook: Using heterogeneity to understand online social network assembly.” *Proc. ACM Web Science Conference (WebSci 2015)*, article 18 (Preprint at [arxiv:1503.06772](https://arxiv.org/abs/1503.06772))

A. Clauset, M. Kogan and S. Redner, “Safe leads and lead changes in competitive team sports.” *Physical Review E* **91**, 062815 (2015). (Preprint at [arxiv:1503.03509](https://arxiv.org/abs/1503.03509))
[Chosen as an “Editors’ Suggestion”]

A. Clauset, S. Arbesman and D. B. Larremore, “Systematic inequality and hierarchy in faculty hiring networks.” *Science Advances* **1**(1), e1400005 (2015). [One of “Top Ten” *Science Advances* articles of 2015.] [One of the top 100 articles of 2015, by almetrics.com.]

L. Peel and **A. Clauset**, “Detecting change points in the large-scale structure of evolving networks.” *Proc. 29th Conference on Artificial Intelligence (AAAI)*, 2914–2920 (2015). (Preprint at [arxiv:1403.0989](https://arxiv.org/abs/1403.0989))

C. Aicher*, A. Z. Jacobs and **A. Clauset**, “Learning latent block structure in weighted networks.” *Journal of Complex Networks* **3**(2), 221–248 (2015). (Preprint at [arxiv:1404.0431](https://arxiv.org/abs/1404.0431))

A. Scharpf, G. Schneider, A. Nöh and **A. Clauset**, “Forecasting of the risk of extreme massacres in

Syria.” *European Review of International Studies* **1**(2), 50–68 (2014).

D. B. Larremore, **A. Clauset** and A. Z. Jacobs, “Efficiently inferring community structure in bipartite networks.” *Physical Review E* **90**, 012805 (2014). (Preprint at [arxiv:1403.2933](#)) [Best Poster award at NetSci 2014]

P. Sah, L.O. Singh, **A. Clauset** and S. Bansal, “Exploring community structure in biological networks with random graphs.” *BMC Bioinformatics* **14**, 220 (2014). (Preprint at [biorxiv.org/content/early/2013/12/22/001545](#)) [Highly accessed paper]

S. Merritt and **A. Clauset**, “Scoring dynamics across professional team sports: tempo, balance and predictability.” *EPJ Data Science* **3**, 4 (2014). (Preprint at [arxiv:1310.4461](#)) [Highly accessed paper]

Y. Virkar and **A. Clauset**, “Power-law distributions in binned empirical data.” *Annals of Applied Statistics* **8**(1), 89–119 (2014). (Preprint at [arxiv:1208.3524](#))

L. Shoemaker and **A. Clauset**, “Body mass evolution and diversification within horses (family Equidae).” *Ecology Letters* **17**(2), 211–220 (2014).

A. Clauset and R. Woodard, “Estimating the historical and future probabilities of large terrorist events.” *Annals of Applied Statistics* **7**(4), 1838–1865 (2013). (Preprint at [arxiv:1209.0089](#)) [Subject of a special session at ASA Joint Statistical Meetings, Montreal Canada, 5 August 2013]

D. B. Larremore, **A. Clauset**, and C. O. Buckee, “A network approach to analyzing highly recombinant malaria parasite genes.” *PLoS Computational Biology* **9**(10), e1003268 (2013). (Preprint at [arxiv:1308.5254](#))

S. Merritt and **A. Clauset**, “Environmental structure and competitive scoring advantages in team competitions.” *Scientific Reports* **3**, 3067 (2013). (Preprint at [arxiv:1304.1039](#))

A. Scharpf, G. Schneider, A. Nöh and **A. Clauset**, “The Blood Trail of the Veto: A Forecast of the Risk of Extreme Massacres in Syria.” *Zeitschrift für Friedens – und Konfliktforschung* **2**(1), 6–31 (2013). [In German]

S. Merritt, A. Z. Jacobs, W. Mason and **A. Clauset**, “Detecting friendship within dynamic online interaction networks.” *Proc. of the 7th International AAAI Conference on Weblogs and Social Media (ICWSM)*, 380–389 (2013). (Preprint at [arxiv:1303.6372](#))

B. J. Mills, J. J. Clark, M. Peeples, W. R. Haas Jr., J. M. Roberts Jr., B. Hill, D. L. Huntley, L. Borck, R. L. Breiger, **A. Clauset**, and M. S. Shackley, “Transformation of Social Networks in the Late Prehispanic U.S. Southwest.” *Proc. Natl. Acad. Sci. USA* **110**(15): 5785–5790 (2013).

A. Clauset, “How large should whales be?” *PLOS ONE* **8**(1), e53967 (2013). (Preprint at [arxiv:1207.1478](#))

W. Mason and **A. Clauset**, “Friends FTW! Friendship, Collaboration and Competition in *Halo: Reach*.” *Proc. of the 2013 Conference on Computer Supported Cooperative Work (CSCW)*, 375–386 (2013). (Preprint at [arxiv:1203.2268](#))

A. Clauset and K. S. Gleditsch, “The developmental dynamics of terrorist organizations.” *PLOS ONE* **7**(11), e48633 (2012). (Preprint at [arxiv:0906.3287](#))

B. H. Good*, Y.-A. de Montjoye and **A. Clauset**, “The performance of modularity maximization

in practical contexts.” *Physical Review E* **81**, 046106 (2010). (Preprint at [arxiv:0910.0165](https://arxiv.org/abs/0910.0165)) [Chosen as an “Editors’ Suggestion”]

A. Clauset, L. Heger, M. Young and K. S. Gleditsch, “The Strategic Calculus of Terrorism: Substitution and Competition in the Israel-Palestine Conflict.” *Cooperation & Conflict* **46**(1), 6–33 (2010).

A. Clauset and F. W. Wiegel, “A generalized aggregation-disintegration model for the frequency of severe terrorist attacks.” *Journal of Conflict Resolution* **54**(1), 179–197 (2010). (Preprint at [arxiv:0902.0724](https://arxiv.org/abs/0902.0724))

A. Clauset, C. R. Shalizi and M. E. J. Newman, “Power-law distributions in empirical data.” *SIAM Review* **51**(4), 661–703 (2009). (Preprint at [arxiv:0706.1062](https://arxiv.org/abs/0706.1062))

D. Achlioptas, **A. Clauset**, D. Kempe and C. Moore, “On the Bias of Traceroute Sampling: Or, Power-law Degree Distributions in Regular Graphs.” *Journal of the ACM* **56**(4), article 21, 28 pages (2009). (Preprint at [arxiv:cond-mat/0503087](https://arxiv.org/abs/cond-mat/0503087)) [journal version of STOC 2005 paper]

N. Eagle, J. Quinn and **A. Clauset**, “Methodologies for Continuous Cellular Tower Data Analysis.” *Proc. 7th International Conference on Pervasive Computing* (Pervasive 2009), 342–353.

A. Clauset and S. Redner, “Evolutionary Model of Species Body Mass Diversification.” *Physical Review Letters* **102**, 038103 (2009). (Preprint at [arxiv:0808.4014](https://arxiv.org/abs/0808.4014))

A. Clauset, D. J. Schwab and S. Redner, “How many species have mass M ?” *American Naturalist* **173**, 256–263 (2009). (Preprint at [arxiv:0808.3433](https://arxiv.org/abs/0808.3433))

A. Clauset, H. G. Tanner, C. T. Abdallah and R. H. Byrne, “Controlling across complex networks – Emerging links between networks and control.” *Annual Reviews in Control* **32**, 183–192 (2008).

A. Clauset and D. H. Erwin, “The evolution and distribution of species body size.” *Science* **321**, 399–401 (2008). (Preprint at [arxiv:0901.0251](https://arxiv.org/abs/0901.0251))

A. Clauset, C. Moore and M. E. J. Newman, “Hierarchical structure and the prediction of missing links in networks.” *Nature* **453**, 98–101 (2008). (Preprint at [arxiv:0811.0484](https://arxiv.org/abs/0811.0484))

A. Clauset, M. Young and K. S. Gleditsch, “On the Frequency of Severe Terrorist Attacks.” *Journal of Conflict Resolution* **51**(1), 58–88 (2007). (Preprint at [arxiv:physics/0606007](https://arxiv.org/abs/physics/0606007))

V. Kalapala, V. Sanwalani, **A. Clauset** and C. Moore, “Scale Invariance in Road Networks.” *Physical Review E* **73**, 026130 (2006). (Preprint at [arxiv:physics/0510198](https://arxiv.org/abs/physics/0510198))

J. T. Ayers, **A. Clauset**, J. D. Schmitt, L. P. Dvoskin and P. A. Crooks, “Molecular modeling of mono- and bis-quaternary ammonium salts as ligands at the $\alpha 4\beta 2$ nicotinic acetylcholine receptor subtype using nonlinear techniques.” *American Association of Pharmaceutical Scientists Journal* **7**(3), E678–85 (2005).

Y. D. Xiao, **A. Clauset**, R. Harris, E. Bayram, P. Santago II, and J. D. Schmitt, “Supervised Self-Organizing Maps in QSAR I: Robust behavior with underdetermined datasets.” *Journal of Chemical Information and Modeling* **46**(6), 1749–1758 (2005).

A. Clauset, “Finding local community structure in networks.” *Physical Review E* **72**, 026132 (2005). (Preprint at [arxiv:physics/0503036](https://arxiv.org/abs/physics/0503036))

D. Achlioptas, **A. Clauset**, D. Kempe and C. Moore, “On the bias of traceroute sampling (or: Why almost every network looks like it has a power law).” *ACM Proc. 37th Symp. on Theory of Computing* (STOC 2005), 694–703.

A. Clauset and C. Moore, “Accuracy and Scaling Phenomena in Internet Mapping.” *Physical Review Letters* **94**, 018701 (2005). (Preprint at [arxiv:cond-mat/0410059](#))

A. Clauset, M. E. J. Newman and C. Moore, “Finding community structure in very large networks.” *Physical Review E* **70**, 066111 (2004). (Preprint at [arxiv:cond-mat/0408187](#))

E. Bayram, P. Santago II, R. Harris, Y. D. Xiao, **A. Clauset** and J. D. Schmitt, “Genetic Algorithms and Self-Organizing Maps: A Powerful Combination for Modeling Complex QSAR and QSPR Problems.” *Journal of Computer-Aided Molecular Design* **18** (7-9), 483–493 (2004).

WORKSHOP
PAPERS

A. Z. Jacobs and **A. Clauset**, “A unified view of generative models for networks: models, methods, opportunities, and challenges.” *NIPS Workshop on Networks: From Graphs to Rich Data* (2014). (Preprint at [arxiv:1411.4070](#))

L. Peel and **A. Clauset**, “Change-point detection in temporal networks using hierarchical random graphs.” *KDD Workshop on Outlier Detection & Description under Data Diversity* (2014).

S. Merritt and **A. Clauset**, “Social Network Dynamics in a Massive Online Game: Network Turnover, Non-densification, and Team Engagement in Halo Reach.” *Eleventh Workshop on Mining and Learning with Graphs (MLG)* (2013). (Preprint at [arxiv:1306.4363](#))

C. Aicher*, A. Z. Jacobs and **A. Clauset**, “Adapting the Stochastic Block Model to Edge-Weighted Networks.” *ICML Workshop on Structured Learning* (2013). (Preprint at [arxiv:1305.5782](#))

N. Eagle, **A. Clauset** and J. Quinn, “Location Segmentation, Inference and Prediction for Anticipatory Computing.” *Proc. AAAI Spring Symposium*, 20–25 (2009).

A. Clauset and N. Eagle. “Persistence and periodicity in a dynamic proximity network.” *DIMACS Workshop on Computational Methods for Dynamic Interaction Networks* (Piscataway), 2007. (Preprint at [arxiv:1211.7343](#)).

A. Clauset, C. Moore and M. E. J. Newman, “Structural Inference of Hierarchies in Networks.” *Proc. Workshop on Statistical Network Analysis, 23rd International Conference on Machine Learning* (ICML '06). E. M. Airoldi et al., Eds., *Lecture Notes in Computer Science* **4503**, 1–13 (2007). (Preprint at [arxiv:physics/0610051](#))

OTHER
PUBLICATIONS

A. Clauset, D. B. Larremore and R. Sinatra, “Data-driven predictions in the science of science.” *Science* **355**, 477–480 (2017). [Invited Perspective piece]

A. Z. Jacobs, J. A. Dunne, C. Moore, and **A. Clauset**, “Untangling the roles of parasites in food webs with generative network models.” Preprint, [arxiv:1505.04741](#) (2015).

R. T. Gill, A. L. Halweg-Edwards, S. F. Way and **A. Clauset**, “Synthesis aided design: The biological design-build-test engineering paradigm?” *Biotechnology and Bioengineering* **113**(1), 7–10 (2016).

C. R. Shalizi, A. Z. Jacobs*, K. L. Klinkner and **A. Clauset**, “Adapting to Non-stationarity with Growing Expert Ensembles.” Preprint, [arxiv:1103.0949](#) (2011).

A. Clauset, M. Young and K. S. Gleditsch, “A Novel Explanation of the Power-Law Form of the Frequency of Severe Terrorist Events: Reply to Saperstein.” *Peace Economics, Peace Science and Public Policy* **16**(1), Article 12 (2010).

A. Clauset, “Story-telling, Statistics, And Other Grave Scientific Insults.” *Nature Soapbox Science Blog* (posted 27 October 2010). <http://tinyurl.com/2gx7z51>

A. Clauset, “A theoretician ponders what physics has to offer ecology.” *Nature* **465**, 139 (2010).

N. Eagle, **A. Clauset**, A. Pentland and D. Lazer, “Multi-dimensional Edge Inference: Response to Comment by Dr. Adams.” *Proc. Natl. Acad. Sci. USA* **107**(9), E31 (2010).

A. Clauset and C. Moore, “How Do Networks Become Navigable?”
Preprint, [arxiv:cond-mat/0309415](http://arxiv.org/abs/cond-mat/0309415) (2003).

POPULAR PRESS

D. B. Larremore and **A. Clauset**, “Why predicting the future is more than just horseplay.” *The Christian Science Monitor*, published online 24 April, <http://bit.ly/2omFZbX> (2017).

J. Warner and **A. Clauset**, “The Academy’s Dirty Secret.” *Slate*, published online 23 February, <http://slate.me/1MNdKGGH> (2015).

J. Warner and **A. Clauset**, “What Same-Sex Marriage Means for the Future of Recreational Weed.” *Pacific Standard*, published online 24 October, <http://bit.ly/1tdlut1> (2014).

GRANTS
(PI OR CO-PI)

“Academic hiring networks and scientific productivity across disciplines.”
PI, with Daniel B. Larremore (PI; Santa Fe) and Mirta Galesic (co-PI; Santa Fe)
NSF SBE, \$550,000 2016 – 2019

“CAREER: Hierarchical Probabilistic Models for Networks with Rich Data in Scientific Domains .”
PI
NSF CISE, \$550,000 2015 – 2020

“Extracting diagnostic signals from human microbiome data.”
PI, with Ken Krauter (co-PI; Colorado) and Matt McQueen (co-PI; Colorado)
University of Colorado, Butcher Seed Grant Award, \$70,000 2014 – 2016

“High-Throughput Ecosystem Analysis and Design.”
co-PI, with Rob Knight (PI; Colorado), Ryan Gill (co-PI; Colorado), Noah Fierer (co-PI; Colorado),
Manuel Lladser (co-PI; Colorado) and Robin Dowell (co-PI; Colorado)
Keck Foundation, \$1,000,000 2013 – 2014

“An alignment-free network approach to analyzing highly recombinant malaria parasite antigens.”
PI, joint with Caroline Buckee (PI; Harvard)
NIH/NIGMS, R21, \$286,485 2013 – 2016

“EAGER: Understanding Technological Change from the Map of Capabilities.”
co-PI, with Hyejin Youn (PI; Santa Fe Institute)
NSF SBE, \$152,500 2013 – 2017

“Statistical Inference for Detecting Structures and Anomalies in Networks.”
PI, joint with Cris Moore (PI; Santa Fe Institute) and Mark Newman (PI; Michigan)
DARPA and AFOSR, GRAPHS, \$2,924,396 2012 – 2015

“Measuring the structure of research university networks.”

PI

Kauffman Foundation, \$53,000

2012 – 2013

“Statistical Inference and Machine Learning for Complex Networks.”

co-PI, with Cris Moore (PI; Santa Fe Institute) and Mark Newman (PI; Michigan)

McDonnell Foundation, \$417,576

2008 – 2012

GIFTS

(UNRESTRICTED)

Facebook Inc.

2015

Microsoft Inc.

2014

INVITED TALKS

(RECENT)

- “Human Performance Summit,” Southwest Research Institute, San Antonio TX, 15–16 July 2017
- “Machine Learning in Network Science,” NetSci Satellite Workshop, Indianapolis IN, 19 June 2017
- “Network Science and Education,” NetSci Satellite Workshop, Indianapolis IN, 19 June 2017
- Colloquium, Media Lab, Massachusetts Institute of Technology, Cambridge MA, 20 April 2017
- Colloquium, Network Science Institute, Northeastern University, Boston MA, 20 April 2017
- Colloquium, Network Science Institute, Northeastern University, Boston MA, 18 April 2017
- Colloquium, Statistics Department, Colorado State University, Ft. Collins CO, 3 April 2017
- “Science Among the Machines,” Google Ventures and SFI, Mountain View CA, 20 March 2017
- Institute for Cognitive Science Colloquium, University of Colorado, Boulder CO, 27 January 2017
- School of Computer Science Lecture Series, Georgia Tech, Atlanta GA, 2 December 2016
- Informatics Seminar, University of Iowa, Iowa City IA, 4 November 2016
- Workshop on Interdisciplinary Perspectives on Modelling Conflict, Department of Government, University of Essex, Colchester UK, 16 September 2016
- Dynamics & Complex Systems Seminar, Department of Applied Mathematics, University of Colorado, Boulder CO, 8 September 2016

ADVISING

Postdoctoral Fellows

- Dr. Andrea Berardi 2015 – 2016
- Dr. Daniel B. Larremore 2012 – 2015
- Dr. Leto Peel 2013 – 2015

Doctoral Students (all at Colorado)

- Anna Broido 2016 – present
Applied Mathematics & IQ Biology
- Nora Connor 2011 – present
Computer Science & IQ Biology; NSF GRF
- Amir Ghasemian 2014 – present
Computer Science
- Abigail Z. Jacobs 2011 – present
Computer Science; NSF GRF
- Andrew Kavran 2016 – present
Chemistry and Biochemistry & IQ Biology; co-advised with N. Ahn
- Allison Morgan 2016 – present
Computer Science
- Samuel F. Way 2014 – present
Computer Science & IQ Biology
- Lauren G. Shoemaker (PhD, Ecology & Evolutionary Biology, and IQ Biology, co-advised with B. Melbourne) graduated 2017
Dissertation: *Stabilizing and Equalizing Mechanisms Alter Community Coexistence and Macroevolutionary Diversity Patterns*

- Sears Merritt (PhD, Computer Science) graduated 2013
Dissertation: *Dynamics and structure in competitive social systems*

Masters Students (all at Colorado)

- Trevor DiMartino (MS Computer Science) graduated 2017
Thesis: *Ratchet mechanisms in macroevolutionary processes*
- Kansuke Ikehara (MS Computer Science) graduated 2017
Thesis: *Structure of complex networks across domains*
- Christopher Aicher (BS/MS Applied Mathematics) graduated 2014
Thesis: *The weighted stochastic block model*
- Pooneh Mortazavi (MS, Computer Science) graduated 2013
Thesis: *Genome optimization and evolution modeling using genetic algorithm and GA-TRMR*
- Yogesh Virkar (MS, Computer Science) graduated 2012
Thesis: *Power-law distributions and binned empirical data*

Undergraduate Students

- McKenzie Weller (BS Computer Science, Colorado) 2016 – present
- Ellen Tucker (BS Mathematics, Colorado) 2015 – 2016
- Matthias Sainz (BS Computer Science, Colorado) 2014 – 2016
- Dominic Tonozzi (BS Computer Science, Colorado) 2014 – 2015
- Christopher Aicher (BS/MS Applied Mathematics, Colorado) 2011 – 2014
- Kenneth Sheedlo (BS Comp. Sci., Colorado; Discovery Learning Apprentice) 2011 – 2012
- Andrew Zizzi (BS Aerospace, Colorado; Discovery Learning Apprentice) 2011 – 2012
- Kristen Hargett (BS Applied Math., Colorado) 2011
- Zachary Newman (BS Math., Colorado; McNair Scholar & UROP) Summer 2011
- Abigail Jacobs (BS Math., Northwestern; REU) Summer 2010
- Amy Wesolowski (BS Math., C.o. Atlantic; REU) Summer 2010
- Andrew Mauboussin (High school fellow at SFI) Summer 2009
- Benjamin Good (BS Physics, Swarthmore; REU) 2008 – 2010

TEACHING

University Courses (* indicates a new course)

- Algorithms (undergraduate) Spring, 2014, 2017 – 2018
Colorado CSCI 3104
- History and Future of Computing* (undergraduate) Spring, 2015 – 2016
Colorado CSCI 4380
- Network Analysis and Modeling* (graduate) Fall, 2013 – 2014, 2016 – 2017
Colorado CSCI 5352
- Design and Analysis of Algorithms (graduate) Spring, 2011 – 2013
Colorado CSCI 5454
- Inference, Models and Simulation for Complex Systems* (graduate) Fall, 2010 – 2011
Colorado CSCI 7000

Summer Schools

- Faculty, Santa Fe Institute, “Complex Systems Summer School” (CSSS) 2007 – 2017
Santa Fe NM, 2007–2008, 2013–2014, 2016–2017; Beijing China, 2008–2009; Ajitgarh India 2015
- Faculty, Santa Fe Institute, “Short Course on Exploring Complexity” 2011 – 2016
Albuquerque NM, 2011; Washington DC, 2012; Stanford CA, 2012; Austin TX, 2013; Santa Fe NM, 2015; Santa Fe NM, 2016

EDITORIAL WORK

- Associate Editor, *Science Advances* (AAAS) 2014 – present
- Associate Editor, *Journal of Complex Networks* (Oxford University Press) 2012 – present

REFEREE WORK

- **Applied Math and Statistics:** Annals of Applied Statistics, EPJ Data Science, SIAM ICDM Workshop on Analysis of Dynamic Networks (2009), Statistical Analysis and Data Mining
- **Biology:** Bioinformatics, BMC Bioinformatics, Evolutionary Biology, Global Ecology and Biogeography, IET Systems Biology, Journal of Animal Ecology, Journal of Theoretical Biology, Marine Ecology Progress Series, Methods in Ecology and Evolution, PLOS Biology, PLOS Computational Biology, Trends in Ecology & Evolution
- **Computer Science:** AAI (2014), Communications of the ACM (CACM), Computer Science Reviews (CSR), Foundations and Trends in Machine Learning, IEEE GLOBECOM (2010), Proceedings of the IEEE, IEEE International Conference on Robotics and Automation (2006), ICWSM (2014–2017), Journal of the ACM (JACM), ACM Journal of Experimental Algorithmics (JEA), Journal of Statistical Analysis and Data Mining, Machine Learning, ACM Trans. on Knowledge Discovery from Data (TKDD), IEEE Trans. on Knowledge and Data Engineering (TKDE), MLG (2016–2017), IEEE Trans. on Network Science and Engineering (TNSE), ACM Trans. on the Web (TWEB), RANDOM (2007), SIMPLEX (2010), SODA (2006, 2007), SDM Workshop on Analysis of Dynamic Networks (2009), NIPS Workshop on Analyzing Graphs (2008), Workshop on Experimental Algorithms (2006), ACM SIGKDD Workshop on Social Network Mining and Analysis (2008, 2009), WSDM (2010), WWW (2010–2017)
- **General:** Nature, Nature Communications, Nature Methods, PLOS ONE, PNAS, Science, Science Advances
- **Physics:** European Physical Journal B, Europhysics Letters, Journal of Statistical Mechanics, New Journal of Physics, Physica A, Physical Review E, Physical Review Letters
- **Political Science:** American Journal of Political Science, British Journal of Political Science, Defense & Peace Economics, Journal of Conflict Resolution, Journal of Peace Research
- **Others:** Advances in Complex Systems, Computational Linguistics, Hydrology Earth System Sciences, Journal of Chemical Information and Modeling, Journal of Complex Networks, Networks and Spatial Economics, The Social Science Journal
- **Funding Agencies:** U.S. National Science Foundation (NSF), U.S. Department of Energy (DOE), U.S. Army Research Office (ARO), ETH Zürich Research Commission, European Research Council (ERC)

PROFESSIONAL SERVICE

Workshops (Organizer or co-organizer)

- *Statistical Inference for Network Models*
NetSci 2017, Satellite Workshop, Indianapolis IN (19 June) 2017
With D. B. Larremore (Santa Fe), B. Fosdick (Colo. State), and T. Broderick (MIT)
- *Violent Radicalization in Western Democracies*
Santa Fe Institute, Santa Fe NM (1–4 March) 2017
With Mirta Galesic (Santa Fe), Marion Dumas (Santa Fe), and David Pines (UC Davis)
- *Statistical Inference for Network Models*
NetSci 2016, Satellite Workshop, Seoul Korea (30 May) 2016
With D. B. Larremore (Santa Fe), B. Fosdick (Colo. State), and A. Z. Jacobs (Colorado)
- *Inference on Networks: Algorithms, Phase Transitions, New Models and New Data*
Santa Fe Institute, Santa Fe NM (14–18 December) 2015
With C. Moore (SFI) and M.E.J. Newman (Michigan)
- *Networks in the Social and Information Sciences*
NIPS 2015, Montreal Canada (12 December) 2015
With E. Airoldi (Harvard), D. Choi (CMU), J. Ugander (Microsoft), and P. Toulis (Harvard)
- *Statistical Inference for Network Models*
NetSci 2015, Satellite Workshop, Zaragoza Spain (1 June) 2015
With D. B. Larremore (Harvard), L. Peel (Colorado), and A. Z. Jacobs (Colorado)
- *Networks: From Graphs to Rich Data*
NIPS 2014, Montreal Canada (13 December) 2014
With E. Airoldi (Harvard), D. Choi (CMU), J. Ugander (Microsoft), and L. Peel (Colorado)
- *Mathematics Research Community Workshop on Network Science*
Snowbird UT (24–30 June) 2014

- With M. A. Porter (Oxford) and D. Kempe (Southern Cal.)
- *Statistical Inference for Network Models*
NetSci 2014, Satellite Workshop, Berkeley CA (2 June) 2014
With D. B. Larremore (Harvard), L. Peel (Colorado), and A. Z. Jacobs (Colorado)
 - *Frontiers of Network Analysis: Methods, Models, and Applications*
NIPS 2013, Lake Tahoe NV (9 December) 2013
With E. Airoldi (Harvard), D. Choi (CMU), K. El-Arini (Facebook), and J. Leskovec (Stanford)
 - *Structure, Statistical Inference, and Dynamics in Networks: From Graphs to Rich Data*
Santa Fe Institute, Santa Fe NM (6–9 May) 2013
With C. Moore (SFI) and M.E.J. Newman (Michigan)
 - *The Mathematics of Terrorism*
Santa Fe Institute, Santa Fe NM (31 Aug.–2 Sept) 2009
With B. Tivnan (MITRE)
 - *Statistical Inference for Complex Networks*
Santa Fe Institute, Santa Fe NM (3–5 December) 2008
With C. Moore (New Mexico, SFI)
 - *Navigability and Complex Networks*
Santa Fe Institute, Santa Fe NM (4–6 August) 2008
With D. Krioukov (UCSD) and kc claffy (UCSD)
 - *Is There a Physics of Society?*
Santa Fe Institute, Santa Fe NM (10–12 January) 2008
With M. Girvan (Maryland)

Conferences (Organizer or co-organizer)

- *2nd Computer Science at UNM Student Research Conference*, Conference Chair, Albuquerque NM, (3 March) 2006
- *1st Computer Science at UNM Student Research Conference*, Conference Chair, Albuquerque NM, (4 March) 2005

Program Committees

- (Senior PC) *International Conference on Network Science* (NetSci, main cycle) 2017
- (PC co-chair) *International Conference on Computational Social Science* (ICCSS) 2017
- (Senior PC) *World Wide Web Conference* (WWW) 2017
- (Senior PC) *International Conference on Computational Social Science* (ICCSS) 2016
- *International Conference on Network Science* (NetSci, main cycle) 2015 – 2016
- *International Conference on Network Science* (NetSci-X) 2015 – 2016
- *World Wide Web Conference* (WWW) 2010 – 2017
- *International Workshop on Mining and Learning With Graphs* (MLG) 2016 – 2017
- *International AAAI Conference on Web and Social Media* (ICWSM) 2014 – 2017
- *AAAI Conference on Artificial Intelligence* (AAAI) 2014
- *1st SIAM Workshop on Network Science* 2013
- *International Workshop on Complex Networks* (CompleNet) 2009 – 2010
- *Workshop on Simplifying Complex Networks for Practitioners* (SIMPLEX) 2010
- *ACM International Conference on Web Search and Data Mining* (WSDM) 2010
- *Workshop on Social Network Mining and Analysis* (at ACM SIGKDD) 2008 – 2009
- *Workshop on Analysis of Dynamic Networks* (at SIAM ICDM) 2009
- *Workshop on Analyzing Graphs: Theory and Applications* (at NIPS) 2008
- *International Workshop on Experimental Algorithms* 2006

Institutional Committees

- Colorado, BioFrontiers Institute, Task Force 2010 – present
- Colorado, Interdisciplinary Quantitative Biology (IQBio) liaison with CS 2010 – present
- Colorado, BioFrontiers Institute, Computing Committee (co-chair) 2015 – present
- Colorado, BioFrontiers Faculty Search Committee (co-chair) 2016 – 2017

- Colorado, Computer Science, Faculty Search Committee 2012 – 2016
- Colorado, BioFrontiers Faculty Search Committee (co-chair) 2014 – 2015
- Colorado, Computer Science, Executive Committee 2013 – 2015
- Colorado, Computer Science, Graduate Committee 2010 – 2012
- Colorado, Interdisciplinary Quantitative Biology (IQBio) Mentoring Committee 2011 – 2012
- Santa Fe Institute, Colloquium Committee 2007 – 2009
- New Mexico, Computer Science, Faculty Search Committee 2005 – 2006

Society Leadership Positions

- Co-founder and Administrator, Zachary Karate Club CLUB Prize in Network Science
<http://networkkarate.tumblr.com> 2013 – present
- President, UNM Computer Science Grad. Student Assoc. (CSGSA) 2004 – 2005
- Vice President, UNM Computer Science Grad. Student Assoc. (CSGSA) 2003 – 2004

SYNERGISTIC ACTIVITIES

- Creator and project lead for *Colorado Index of Complex Networks* (ICON) 2016 – present
 - <https://icon.colorado.edu>
 - public index of >3500 publicly accessible network science data sets
- Science blogger at *Structure+Strangeness* 2005 – present
 - <http://structureandstrangeness.com>
 - 366 entries and >500,000 page hits
- Science microblogger on Twitter @aaronclauset 2012 – present
 - 3606 followers (top 1% of all users)
 - 992 tweets with mean 3.4 retweets per tweet (top 4% of all users)
- Popular science writing, for *Pacific Standard, State, and CSM* 2014 – present
- Wikipedia contributor (various science and mathematics articles) 2006 – present
- Stackexchange contributor (various CS and mathematics questions) 2011 – present
- Public release of scientific data sets (open source; typically GPL or CC) 2007 – present
 - Faculty hiring networks for computer science, business, and history 2015
 - NFL 2009 network (with C. Aicher) 2014
 - Terrorist event sizes worldwide 2013
 - Body masses of all extant whale species 2013
 - Various binned quantities with heavy-tailed distributions (with Y. Virkar) 2012
 - 9/11 hijackers association network 2008
 - Various quantities with heavy-tailed distributions (with M.E.J. Newman) 2007
- Public release of working algorithms (open source; typically GPL or CC) 2004 – present
 - neoSBM for metadata community detection (Python; with L. Peel) 2017
 - Block entropy statistical test (BESTest) for networks (Matlab; with D.B. Larremore) 2017
 - Minimum violation ranking sampling code (Matlab) 2015
 - Bipartite stochastic block model package (Matlab; with D.B. Larremore) 2014
 - Network change-point detection package (C++ and Python; with L. Peel) 2014
 - Weighted stochastic block model package (Matlab; with C. Aicher) 2014
 - Power-law distributions with bins toolkit (Matlab; with Y. Virkar) 2012
 - Rare event forecasting tool kit (Matlab) 2012
 - Terrorist organization simulation code (Matlab) 2011
 - Modularity landscape mapping software package (Python; with B.H. Good) 2010
 - Hierarchical random graph and missing-link prediction software package (C++) 2008
 - Species mass macroevolution simulation code (Matlab) 2008
 - Power-law distributions tool kit (Matlab and R; with C.R. Shalizi) 2007
 - Local-modularity network clustering algorithm (C++) 2005
 - Fast-modularity network clustering algorithm (C++) 2004