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education

2013 **Ph.D. Ecology, Evolution, & Behavior** The University of Texas at Austin
Profs. Lauren Ancel Meyers & Mark Kirkpatrick, advisors

2007 **B.Sc. Biology, honors** Indiana University, Bloomington

professional experience

Ongoing **Director of AI + Life Sciences** Northeastern University, Boston, MA, USA
Director of AI and Life Sciences in the Institute for Experiential AI.

Ongoing **Professor of the Practice** Northeastern University, Boston, MA, USA
Professor of the Practice in the Bouvé College of Health Sciences and Khoury College of Computer Sciences, with appointments in the Network Science and Roux Institutes.

Ongoing **External Professor** Santa Fe Institute and Vermont Complex Systems Center
External faculty at both the SFI and the Vermont Complex Systems Center.

Ongoing **Co-Founder** Global.health
Global.health is a data science initiative started in response to COVID-19 that is supported by Google.org, The Rockefeller Foundation, and Wellcome Trust. We host over 100M COVID-19 case reports, were used by the WHO during the 2022 mpox emergency, and have supported numerous emerging infectious disease responses.

2021–2022 **Vice President** The Rockefeller Foundation, Washington, D.C., USA
From 2021 to 2022 I was managing director of pathogen surveillance at The Rockefeller Foundation. In 2022, I was made a Vice President.

2017–2021 **Assistant Professor** Northeastern University, Boston, MA, USA
Core faculty member in the Network Science Institute, Assistant Professor of Health Sciences (2021), Physics, and Marine & Environmental Sciences.

2016–2021 **Strategic Advisor** Pandefense Advisory, BioFire Diagnostics, ThinkMD, ILiAD Biotechnologies
Provide guidance on analytics associated with epidemiology and disease surveillance.

2019–2020 **Chief Strategy Officer** Dharma Platform, Washington, D.C., USA
Chief Strategy Officer and head of data science at Dharma Platform, a technology start-up that provided data management solutions to social impact organizations.

2016–2017 **Assistant Professor** University of Vermont, Burlington, VT, USA
Assistant Professor in Mathematics & Statistics and the Complex Systems Center.

2013–2016 **Omidyar Fellow** Santa Fe Institute, Santa Fe, NM, USA
As an Omidyar Postdoctoral Fellow, I held Principal Investigator status through the SFI.

books

1. Rohani P & **Scarpino SV** eds. 2019. Pertussis: Epidemiology, Immunology, and Evolution. Oxford University Press.

peer-reviewed publications

59. Diamond MB, Yee E, Bhinge M, **Scarpino SV***. *In press*. Wastewater surveillance facilitates climate-change resilient pathogen monitoring. **Science Translational Medicine**.
58. Klein B, LaRock T, McCabe S, Torres L, Friedland L, Privitera F, Lake B, Kraemer MUG, Brownstein JS, Lazer D, Eliassi-Rad T, **Scarpino SV**, Vespignani A, Chinazzi M. Characterizing collective physical distancing in the U.S. during the first nine months of the COVID-19 pandemic. **PLoS Digital Health**.
57. Althouse BM, Wallace B, Case B, **Scarpino SV**, Allard A, Berdhal A, White ER, Hebert-Dufresne L. *In press*. The unintended consequences of inconsistent closure policies and mobility restrictions during epidemics. **BMC Global and Public Health**.
56. Klein B, Ogbunugafor CB, Schafer BJ, Bhadricha Z, Kori P, Sheldon J, Kaza N, Wang EA, Eliassi-Rad T, **Scarpino SV***, Hinton E. 2023. The COVID-19 pandemic amplified long-standing racial disparities in the United States criminal legal system. *Nature* 617:344–350.
55. Keshaviah A, Diamond MB, Wade MJ, **Scarpino SV*** on behalf of the Global Wastewater Action Group. 2023. Wastewater Monitoring Can Anchor Global Disease Surveillance Systems. *The Lancet Global Health* 11(6):e976-e981.
54. Allard A, Moore C, **Scarpino SV**, Althouse BM, Hebert-Dufresne L. 2023. The role of directionality, heterogeneity and correlations in epidemic risk and spread. *SIAM Review* 65(2):471-492.
53. Klein B, Zenteno AC, Joseph D, Zahedi M, Hu M, Copenhaver M, Kraemer MUG, Chinazzi M, Klompas M, Vespignani A, **Scarpino SV***, Salmasian H. 2023. Forecasting hospital-level COVID-19 admissions using real-time mobility data. *Nature Communications Medicine* 3(1):25-34.
52. Yang CH & **Scarpino SV***. 2023. The Ensemble of Gene Regulatory Networks at Mutation-Selection Balance. *Proc. Roy. Soc. Interface* 20(198):20220075.
51. Mercier AM, **Scarpino SV**, Moore C. 2022. Effective Resistance for Pandemics: Mobility Network Sparsification for High-Fidelity Epidemic Simulation. *PLoS Computational Biology* 18(11):e1010650.
50. Klein B, Generous N, Chinazzi M, Bhadricha Z, Gunashekar R, Kori P, Li B, McCabe S, Green J, Lazer D, Marsicano CR, **Scarpino SV**, Vespignani A. 2022. Higher education Responses to COVID-19 in the United States: Evidence for the Impacts of University Policy. *PLoS Digital Health* 1(6):e0000065.
49. Yang CH & **Scarpino SV***. 2022. A Family of Fitness Landscapes Modeled Through Gene Regulatory Networks. *Entropy* 24(5):622–646.
48. Klein B, Swain A, Byrum T, **Scarpino SV**, Fagan W. 2022. Exploring noise, degeneracy, and determinism in biological networks with the einet package. *Methods in Ecology and Evolution* 13(4):799-804.
47. McLaughlin M†, Pellé KG†, **Scarpino SV***,†, Giwa A, Mount-Finette E, Haidar N, Adamu F, Adeyoju T, Ravi N, Thompson A, Heath B, Dittrich S, Finette B. 2022. Development and validation of manually modified and supervised machine learning (ML) clinical assessment algorithms for malaria in Nigerian children. *Frontiers in Artificial Intelligence* 4:54017.
46. Kraemer MUG, Hill V, Ruis C, Dellicour S, Bajaj S, McCrone JT, Baele G, Parag KV, Lindstrom Battle A, Gutierrez B, Jackson B, Colquhoun R, O'Toole A, Klein B, Vespignani A, The COVID-19 Genomics UK (CoG-UK) consortium, Volz E, Faria NR, Aanensen D, Loman NJ, du Plessis L, Cauchemez S, Rambaut A, **Scarpino SV***, Pybus OG.

2021. Spatio-temporal invasion dynamics of SARS-CoV-2 lineage B.1.1.7 emergence. *Science* 373(6557):889–895.

45. Bedson J, Skrip LA, Pedi D, Abramowitz S, Carter S, Jalloh MF, Funk S, Gobat N, Giles-Vernick Tamara, Chowell1 G, Rangel de Almeida J, Elessawi R, **Scarpino SV**, Hammond RA, Briand S, Epstein JM, Hébert-Dufresne L, Althouse BM. 2021. A review and agenda for integrated disease models including social and behavioural factors. *Nature Human Behaviour* 5(7):834–846.

44. Hanley J, Tu HA, Dragon JA, Dickson DM, Selig N, Tighe S, Eckstrom KM, **Scarpino SV**, Whitehead SS, Durbin AP, Pierce KK, Kirkpatrick BD, Rizzo DM, Frietze S, Diehl SA. 2021. Immunotranscriptomic profiling the acute and clearance phases of a human challenge dengue virus serotype 2 infection model. *Nature Communications* 12(1):1–14.

43. Skrip LA, Selvaraj P, Hagedorn B, Ouédraogo AL, Noori N, Orcutt A, Mistry D, Bedson J, Hébert-Dufresne L, **Scarpino SV**, Althouse BM. 2021. Seeding COVID-19 across sub-Saharan Africa: an analysis of reported importation events across 40 countries. *The American Journal of Tropical Medicine and Hygiene* 104(5):1694.

42. Nande A, Sheen J, Walters EL, Klein B, Chinazzi M, Gheorghe A, Adlam B, Shinnick J, Tejeda MF, **Scarpino SV**, Vespignani A, Greenlee AJ, Schneider D, Levy MZ, Hill AL. 2021. The effect of eviction moratoria on the transmission of SARS-CoV-2. *Nature Communications* 12(1):1–13.

41. Rader B, White LF, Burns MR, Chen J, Brilliant J, Cohen J, Shaman J, Brilliant L, Kraemer MUG, Hawkins JB, **Scarpino SV**, Astley C, Brownstein JS. 2021. Mask-wearing and control of SARS-CoV-2 transmission in the USA: a cross-sectional study. *The Lancet Digital Health* 3(3):e148–e157.

40. Rader B†, **Scarpino SV***,†, Nande A, Hill A, Adlam B, Reiner RC, Pigott DM, Gutierrez B, Zarebski A, Shrestha M, open COVID-19 data working group, Brownstein JS, Castro MC, Tian H, Pybus OG, Kraemer MUG. 2020. Crowding and the shape of COVID-19 epidemics. *Nature Medicine* 26: 1829–1834.

39. Kraemer MUG, Yang CH, Gutierrez B, Wu CH, Klein B, Pigott DM, open COVID-19 data working group, Plessis LD, Faria NR, Li R, Hanage WP, Brownstein JS, Layan M, Vespignani A, Tian H, Dye C, Cauchemez S, Pybus OG, & **Scarpino SV***. 2020. The effect of human mobility and control measures on the COVID-19 epidemic in China. *Science* 368(6490): 493-497.

38. **Scarpino SV**, Scott JG, Eggo RM, Clements B, Dimitrov NB, Meyers LA. 2020. Socioeconomic bias in influenza surveillance. *PLoS Computational Biology* 16(7), e1007941.

37. Althouse BM, Wenger EA, **Scarpino SV**, Miller JC, Allard A, Hebert-Dufresne L, Hu H. 2020. Superspreading events in the transmission dynamics of SARS-CoV-2: Opportunities for interventions and control. *PLoS Biology* 18(11), e3000897.

36. Ogbunugafor B, Meszaros VA, Miller-Dickson MD, Gomez LM, Murillo AL, **Scarpino SV**. 2020. Variation in microparasite free-living survival and indirect transmission can modulate the intensity of emerging outbreaks. *Scientific Reports* 10: 20786.

35. Hébert-Dufresne L, Althouse BM, **Scarpino SV**, Allard A. 2020. Beyond R0: heterogeneity in secondary infections and probabilistic epidemic forecasting. *Proc. Roy. Soc. Interface* 17: 20200393.

34. Young JG, **Scarpino SV**, Hébert-Dufresne L. 2020. Macroscopic patterns of interacting contagions are indistinguishable from social reinforcement. *Nature Physics* 16: 426–431.

33. Xu B, Gutierrez B, Mekaru S, Sewalk K, Loskill A, Wang L, Cohn E, Hill SC, Zabreski A, Li S, Wu C-H, Hulland E, Morgan J, **Scarpino SV**, Brownstein JS, Pybus OG, Pigott DM, & Kraemer MUG. 2020. Epidemiological data from the COVID-19 outbreak: early descriptions and open release. *Nature Scientific Data* 7(106).

32. Craig R, Kunkel E, Crowcroft N, Fitzpatrick MC, de Melker H, Althouse BM, Merkel T, **Scarpino SV**, Koelle K, Friedman L, Arnold C, & Bolotin S. 2020. Asymptomatic infection and transmission of pertussis in households: a systematic review. *Clinical Infectious Diseases* 70(1): 152-161.

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30. Finette B, McLaughlin M, **Scarpino SV**, Canning J, Grunauer M, Teran E, Bahamonde M, Quizhpe E, Shah R, Swedberg E, Rahman K, Khondker H, Chakma I, Muhoza D, Seck A, Kabore A, Nibitanga S, & Heath B. 2019. Development and initial validation of a frontline health worker mHealth assessment platform (MEDSINC®) for children 2-60 months of age. *American Journal of Tropical Medicine and Hygiene*. 00(6): 1556-1565.
29. **Scarpino SV**[*,†] & Petri G[†]. 2019. On the predictability of infectious disease outbreaks. *Nature Communications* 10(1): 898.
28. Poghosyan H & **Scarpino SV**. 2019. Food insecure cancer survivors continue to smoke after their diagnosis despite not having enough to eat: implications for policy and clinical interventions. *Cancer Causes & Control* 30(3): 241-248.
27. Baltrusaitis K, Brownstein JS, **Scarpino SV**, Bakota E, Crawley A, Conidi G, Gunn J, Gray J, Zink A, & Santillana M. 2018. Comparison of crowd-sourced, electronic health records based, and traditional health-care based influenza-tracking systems at multiple spatial resolutions in the United States of America. *BMC Infectious Diseases* 8:403.
26. Shrestha M, **Scarpino SV**, Edwards EM, Greenberg LT, & Horbar JD. 2018. The interhospital transfer network for very low birth weight infants in the United States. *EPJ Data Science* 7(27).
25. El Haddad L, Ghantoji SS, **Scarpino SV**, Otero G, Harb CP, Stibich M, & Chemaly RF. 2018. Single Nucleotide Polymorphism Analyses Reveal Potential Vancomycin-Resistant Enterococci Transmission Networks between Rooms and Patients on Stem Cell Transplant and Leukemia Units. *Biology of Blood and Marrow Transplantation* 24(3): S99-S100.
24. Meyers L, Ginocchio CC, Faucett AN, Nolte FS, Gesteland PH, Leber A, Janowiak D, Donovan V, Bard JD, Spitzer S, Stellrecht KA, Salimnia H, Selvarangan R, Juretschko S, Daly JA, Wallentine JC, Lindsey K, Moore F, Reed SL, Aguero-Rosenfeld M, Fey PD, Storch GA, Melnick SL, Cook CV, Nelson RK, Jones JD, **Scarpino SV**, Althouse BM, Ririe KM, Malin BA, & Poritz MA. 2018. Automated collection of pathogen-specific diagnostic data for real-time syndromic epidemiological studies. *Journal of Medical Internet Research* 4(3):e59.
23. Allard A[†], Althouse BM[†], Hébert-Dufresne L[†], & **Scarpino SV**[†]. 2017. The risk of sustained sexual transmission of Zika is underestimated. *PLoS Pathogens* 13(9): e1006633.
22. Allard A, Althouse BM, **Scarpino SV**, & Hébert-Dufresne L. 2017. Asymmetric percolation drives a double transition in sexual contact networks. *Proceedings of the National Academy of Sciences USA* 114(34): 8969-8973.
21. Des Marais DL, Guerrero RF, Lasky JR, & **Scarpino SV***. 2017. Topological features of a gene co-expression network predict patterns of natural diversity in environmental response. *Proceedings of the Royal Society B* 284: 20170914.
20. **Scarpino SV**, Meyers LA, & Johansson MA. 2017. Design strategies for efficient arbovirus surveillance. *Emerging Infectious Diseases* 23(4): 642–644.
19. Levin DA & **Scarpino SV**. 2017. On the young age of intraspecific herbaceous taxa. *New Phytologist* 213:1513-1520.
18. **Scarpino SV***, Allard A, & Hébert-Dufresne L. 2016. The effect of a prudent adaptive behaviour on disease transmission. *Nature Physics* 12: 1042–1046.
17. Fitzpatrick MC, Wenzel NS, **Scarpino SV**, Althouse BM, Galvani AP, & Townsend JP. 2016. Cost-effectiveness of a next-generation pertussis vaccine. *Vaccine*. 34: 3405-3411.
16. DeAngelis H, **Scarpino SV**, Fitzpatrick MC, Galvani AP, & Althouse BM. 2016. Epidemiological and economic effects of priming with the whole-cell *Bordetella pertussis* vaccine. *JAMA Pediatrics*. 170(5):459-65.

15. Davies SW†, **Scarpino SV***,†, Pongwarin T, Scott J, & Matz MV. 2015. Estimating trait heritability in highly fecund species. *Genes|Genomes|Genetics*. 5(12): 2639-2645.
14. Althouse BM†, **Scarpino SV**†, and the participants of the Santa Fe Institute Workshop Next Generation Surveillance for the Next Pandemic. 2015. Enhancing disease surveillance with novel data streams. *EPJ Data Science*. 4(1): 1-8.
13. Shrestha M, **Scarpino SV**, & Moore C. 2015. A message-passing approach for recurrent-state epidemic models on networks. Physical Review E 92: 022821.
12. von Hippel P, **Scarpino SV**, & Holas I. 2015. Robust estimation of inequality from binned incomes. *Sociological Methodology* 10.1177/0081175015599807.
11. Althouse BM & **Scarpino SV**. 2015. Asymptomatic transmission and the resurgence of *Bordetella pertussis*. *BMC Medicine* 13(146): 2-12.
10. **Scarpino SV**, Iamarino A, Wells C, Yamin D, Ndeffo-Mbah M, Wenzel N, Fox SJ, Nyenswah T, Altice FL, Galvani A, Meyers LA, & Townsend JP. 2015. Epidemiological and viral genomic sequence analysis of the 2014 Ebola outbreak reveals clustered transmission. *Clinical Infectious Diseases* 60(7):1079-1082.
9. **Scarpino SV***, Levin DA, & Meyers LA. 2014. Polyploid formation shapes flowering plant diversity. *American Naturalist* 184 (4): 456-465.
8. **Scarpino SV***, Hunt PJ, Garcia-De-Leon FJ, Juenger TE, Schartl M, & Kirkpatrick M. 2013. Evolution of a genetic incompatibility in the genus Xiphophorus. *Molecular Biology and Evolution* 30 (10): 2301-2310.
7. Crews D, Gillette R, **Scarpino SV**, Manikkam M, Savenkova MI, & Skinner MK. 2012. Epigenetic transgenerational alterations to stress response in brain gene networks and behavior. *Proceedings of the National Academy of Sciences USA* 109 (23): 9143 - 9148.
6. **Scarpino SV***, Dimitrov NB, & Meyers LA. 2012. Optimizing provider recruitment for influenza surveillance networks. *PLoS Comp. Biol.* 8 (4): e1002472.
5. Otto SP, Pannell JR, Peichel CL, Ashman TL, Charlesworth D, Chippindale AK, Delph LF, Guerrero RF, **Scarpino SV**, & McAllister BF. 2011. About PAR: The distinct evolutionary dynamics of the pseudoautosomal region. *Trends in Genetics* 27(9): 358 - 367.
4. Delph LF, Andicoechea J, Steven J, Herlihy C, **Scarpino SV**, & Bell D. 2011. Environment-dependent intralocus sexual conflict in a dioecious plant. *New Phytologist* 192(2): 542-552.
3. Caillaud D, Crofoot MC, **Scarpino SV**, Jansen P, Garzon-Lopez CX, Winkelhagen A, Bohlman SA, & Walsh PD. 2010. Modeling the spatial distribution and fruiting pattern of a key tree species in a neotropical forest: methodology and potential applications. *PLoS ONE* 5(11): e15002.
2. Kirkpatrick M, Guerrero RF, & **Scarpino SV**. 2010. Patterns of neutral genetic variation on recombining sex chromosomes. *Genetics* 184: 1141-1152.
1. Pourbohloul B, Ahued A, Davoudi B, Meza R, Meyers LA, Skowronski DM, Villasenor I, Galvan F, Cravioto P, Earn DJ, Dushoff J, Fisman D, Edmunds WJ, Hupert N, **Scarpino SV**, Trujillo J, Lutzow M, Morales J, Contreras A, Chavez C, Patrick DM, & Brunham RC. 2009. Initial human transmission dynamics of the pandemic (H1N1) 2009 virus in North America. *Influenza and Other Respiratory Viruses* 3(5): 215-222.

*denotes corresponding or co-corresponding author.
†authors contributed equally to this work.

book chapters

5. Ogbunugafor CB & **Scarpino SV**. 2022. Higher-Order Interactions in Biology: the Case of Epistasis. In: Battiston F & Petri G (ed.), Higher-order systems. Understanding Complex Systems Series: Springer.
4. **Scarpino SV**. 2021. Modeling Disease Transmission & Interventions. In: Krakauer DC & West G (ed.), The Complex Alternative: Complexity Scientists on the COVID-19 Pandemic. Santa Fe Institute Press.
3. Rohani P & **Scarpino SV**. 2019. Introduction to pertussis transmission and epidemiological dynamics. In: Rohani P & Scarpino SV (ed.). Pertussis: Epidemiology, Immunology, and Evolution. Oxford University Press.
2. Althouse BM & **Scarpino SV**. 2019. Contrasting ecological & evolutionary signatures of whooping cough epidemiological dynamics. In: Rohani P & Scarpino SV (ed.). Pertussis: Epidemiology, Immunology, and Evolution. Oxford University Press.
1. **Scarpino SV***. 2016. Evolutionary Medicine IV. Evolution and Emergence of Novel Pathogens. In: Kliman, RM (ed.), Encyclopedia of Evolutionary Biology. vol. 2, pp. 77–82. Oxford: Academic Press.

perspectives, opinions, and outreach publications

27. Wastewater surveillance of pathogens can inform public health action. *In press*. Diamond MB, Keshaviah A, Bento AI, Conroy-Ben O, Driver EM, Ensor KB, Halden RU, Hopkins LP, Kuhn KG, Moe CL, Rouchka EC, Smith T, Stadler LB, Stevenson BS, Susswein Z, Vogel JR, Wolfe MK, and **Scarpino SV***. 2022. Nature Medicine.
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25. Innovations in public health surveillance: updates from a forum convened by the WHO Hub for Pandemic and Epidemic Intelligence, 2 and 3 February 2022. 2022. Morgan O, Redies I, Rioja ZBL, Brownstein J, George D, Golding J, Hanefeld J, Horby P, Lee C, Mikhailov D, Philip W, **Scarpino SV**, Tessema SK, and Ihekweazu C. 2022. Eurosurveillance.
24. Variants, Sublineages, and Recombinants: The Constantly Changing Genome of SARS-CoV-2. Houtman J, Shutlz L, Malaty Rivera J, Gilmour J, Luo D, **Scarpino SV**, Bright RA. 2022. The Rockefeller Foundation: Case Studies.
23. One outstanding path from A to B. Shugars S & **Scarpino SV**. 2021. Nature Physics.
22. Data curation during a pandemic and lessons learned from COVID-19. 2021. Kraemer MUG, **Scarpino SV**, Marivate V, Gutierrez B, Xu B, Lee G, Hawkins JB, Rivers C, Pigott DM, Katz R, Brownstein JS. Nature Computational Science.
21. Probing COVID's complexity in real time. 2020. **Scarpino SV**. Science.
20. Leading with data on the path to normalcy. 2020. **Scarpino SV**. Tableau Blog.
19. Applications of predictive modeling during the early stages of the COVID-19 epidemic. 2020. Poletto C, **Scarpino SV**, and Volz E. The Lancet Digital Health.
18. Modelling COVID-19: Realistic models require better data. 2020. Shrestha M & **Scarpino SV**. Nature Reviews Physics.
17. Sampling bias and incorrect rooting make phylogenetic network tracing of SARS-COV-2 infections unreliable. 2020. Mavian C, Pond SK, Marini S, Magalis BR, Vandamme AM, Dellicour S, **Scarpino SV**, Houldcroft C, Villabona-Arenas J, Paisie TK, Trovao NS, Boucher C, Zhang Y, Scheuermann RH, Gascuel O, Tsan-Yuk Lam T, Suchard MA, Abecasis A, Wilkinson E, de Oliveira T, Bento AI, Schmidt KA, Martin D, Hadfield J, Faria N, Grubaugh ND, Neher RA, Baele G, Lemey P, Stadler T, Albert J, Crandall KA, Leitner T, Stamatakis A, Prosperi M, and Salemi M. PNAS.

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15. Aggregated Mobility Data Could Help Fight COVID-19. 2020. Buckee CO, Balsari S, Chan J, Crosas M, Dominici F, Gasser U, Grad YH, Grenfell B, Halloran ME, Kraemer MUG, Lipsitch M, Metcalf CJE, Meyers LA, Perkins TA, Santillana M, **Scarpino SV**, Viboud C, Wesolowski A, & Schroeder A. Science.
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12. Author Reply: Development and initial validation of a frontline health worker mHealth assessment platform (MEDSINC®) for children 2-60 months of age. 2019. Finette B, McLaughlin M, **Scarpino SV**, Canning J, Grunauer M, Teran E, Bahamonde M, Quizhpe E, Shah R, Swedberg E, Rahman K, Khondker H, Chakma I, Muhoza D, Seck A, Kabore A, Nibitanga S, & Heath B. American Journal of Tropical Medicine and Hygiene.
11. Uncovering the hidden cost of bed bugs. 2019. **Scarpino SV** and Althouse BM. PNAS.
10. Why it's so difficult for scientists to predict the next outbreak of a dangerous disease. 2019. Ogbunu CM, **Scarpino SV**, and Harp R. World Economic Forum.
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2. Rivers C, Alexander K, Bellan S, Del Valle S, Drake JM, Eisenberg JN, Eubank S, Ferrari M, Halloran ME, Galvani A, Lewis BL, Lewnard J, Lofgren E, Macal C, Marathe M, Ndeffo Mbah M, Meyers LA, Meza R, Park A, Porco T, **Scarpino SV**, Shaman J, Vespignani A, & Yang W. 2014. Ebola: models do more than forecast. Nature.
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patents

US Utility Patent - Berezin AB, Birmingham JR, Robinson M, **Scarpino SV**, Simmons JW, and Smith C. 2020. Energy Deposit Discovery System and Method - US10577895B2.

grants (active)

Scarpino, SV (PI). - *In Progress* - "AI for Enhanced Decision Support and Efficiency: MCGI Genomic Tumor Boards." The Jackson Laboratory (2024).

Scarpino, SV (PI). - *In Progress* - "Generative AI Models for Pathogen Risk Assessment." Microsoft Research (2024).

Scarpino, SV (PI), Church, K (Co-PI), and Gyori, B (Co-PI) - *In Progress*. - "Generative AI models for Pandemic Preparedness and Response Planning." Center for Advanced Preparedness and Threat Response Simulation (2024).

Scarpino, SV (Co-PI). - *In Progress* - "AI-Enhanced Wastewater Metagenomics: Tracking Pathogens for Community Health Surveillance." Grand Challenges (2024-25).

Madhav, N (PI), **Scarpino, SV (Co-PI)**, and Vespignani (Co-PI). - *In Progress* - "AI enabled Measles Forecasting." Bill and Melinda Gates Foundation (2024-25).

Kraemer, M (PI), Brownstein, J (Co-PI), Aalisha, S (Co-PI), Githinji G, (Co-PI), Tegally, H (Co-PI), Morgan O (Co-PI), RÜGER, A (Co-PI), and **Scarpino, SV (Co-PI)**. - *In Progress* - "Global.health: data science and sharing for early response to emerging infectious diseases." Wellcome Trust (2024-27).

Vespignani, A (PI), Chinazzi, M (Co-PI), Lazar, D (Co-PI), Santillana, M (Co-PI), and **Scarpino, SV (Co-PI)**. - *In Progress* - "Epistorm: Center for Advanced Epidemic Analytics and Predictive Modeling Technology." US CDC (2023-28).

Bolnick, D (PI), Eliassi-Rad, T, Wang M, and **Scarpino, SV (Co-PI)**. - *In Progress* - "URofL:EN: Does re-wilding lead to re-wiring of gene expression and species interaction networks?" National Science Foundation (2022-26).

grants (completed)

Vespignani, A (PI), **Scarpino, SV (Co-I)**, & Klein B (Co-I) - *Completed* - "Toward a Teleology of Complex Networks." Templeton Foundation (2020-23).

Vespignani, A (PI), **Scarpino, SV (Co-I)**, and Chinazzi, M (Co-I) - *Completed* - "FluMod - Center for the Multiscale modeling of pandemic and seasonal flu Prevention and Control." US CDC (2020-23).

Kirkpatrick, B (PI), **Scarpino, SV (Former Co-I)**, et al. - *Completed* - "Translational Global Infectious Disease Research Center" National Institutes of Health - COBRE (2018-23).

Pespeni, M (PI), **Scarpino, SV (Co-PI)**, et al. - *Completed* - "NRT: Quantitative & Evolutionary STEM Training (QUEST): An Integrative Training Program for Versatile STEM Professionals to Solve Environmental and Global Health Problems." National Science Foundation (2017-22).

Bolnick, D (PI), Carrier, R (Co-PI), **Scarpino, SV (Co-PI)**, et al. - *Completed* - "Moore Foundation Proposal: Gut on a Chip." Gordon and Betty Moore Foundation (2020-22).

Brownstein (PI), Kraemer (PI), & **Scarpino, SV (PI)** - *Completed* - "Establishing an Open Data Platform for Digital Epidemiology." Rockefeller Foundation (2020-21).

Brownstein (PI), **Scarpino, SV (Co-PI)**, & Kraemer (Co-PI) - *Completed* - "Global.health Infrastructure and Product Development." Tides Foundation (managed for Google.org) (2020-21).

Brownstein, J (PI), Kraemer (Co-PI), **Scarpino, SV (Co-I)**, et al. - *Completed* - "COVID-19." Tides Foundation (managed for Google.org) (2020-21).

Scarpino, SV (PI) - *Completed* - "Salesforce.com Grant to Northeastern University for COVID-19 Model Project." Salesforce.com (2020) (2020-21).

Kraemer, M (PI), **Scarpino, SV (Co-I)**, et al. - *Completed* - "The Role of Connectivity to Sustain Transmission of Influenza in Cities: implications for prevention and control." Tides Foundation (managed for Google.org) (2020-21).

Scarpino, SV (PI) - *Completed* - "Machine learning and clinical decision making." IPRD Group (2019-20).

Vollmer, S (PI), **Scarpino, SV (Co-PI)**, et al. - *Completed* - "Application of Network Analyses and Machine/Deep Learning Approaches to Modern, Multi-omic Data." Northeastern University (Tier 1) (2019-20).

Scarpino, SV (PI) & Diehl, S (PI) - *Completed* - "Integrating 'omics and clinical data to study dengue infection." Biomedical Engineering Pilot Project, College of Medicine, University of Vermont (2017 - 2018).

Scarpino, SV (PI) - *Completed* - "Web Based Neural Network Tools to Forecast Antigenic Relatedness of Viruses from Genomic Sequences." Centers for Disease Control and Prevention (2016 - 2017).

Galvani, AP (PI), Meyers, LA (PI), **Scarpino, SV (consultant)**, et al. - *Completed* - "Dynamic Data-driven Decision Models for Infectious Disease Control." National Institutes of Health MIDAS U01 (2014 - 2018).

Barber, S (PI), Meyers, LA (Co-PI), **Scarpino, SV (Co-I)**, et al. - *Completed* - "Surety BioEvent App." Defense Threat Reduction Agency - Chemical and Biological Defense Program (2014–2016).

Scarpino, SV (PI) & BM Althouse (PI) - *Completed* - "Next Generation Surveillance for the Next Pandemic." Santa Fe Institute & MIDAS Center for Communicable Disease Dynamics-Harvard (2014).

Meyers, LA (PI), **Scarpino, SV (consultant)**, et al. - *Completed* - "Arbovirus Surveillance and Control: Optimizing the Detection and Mitigation of West Nile Virus, Dengue Fever, and Chikungunya Outbreaks." Texas Department of State Health Services - Public Health Emergency Preparedness Funds (2014).

Meyers, LA (PI), **Scarpino, SV (consultant)**, et al. - *Completed* - "Right Sizing Influenza Virologic Surveillance Project." Association of Public Health Laboratories (2014).

Kirkpatrick, M (PI) & **Scarpino, SV (Co-PI)** - *Completed* - "Sexually Antagonistic Selection and Speciation in the Platyfish." National Science Foundation, Doctoral Dissertation Improvement Grant (2011–2013).

awards and honors

2024	**Life Sciences Working Group Member**	Governor's AI Task Force, Governor of Massachusetts.
2024	**Expert Advisory Council Member**	Epiverse: Distributed Pandemic Tools Program, Data.org.
2023	**College of Arts and Sciences 20 under 40**	Indiana University, Bloomington, IN, USA.
2023	**Visiting Fellow**	Martin School, University of Oxford, Oxford, England.

2021	**Expert Advisory Council Member**	Epiverse: Distributed Pandemic Tools Program, Data.org.
2021	**Science-Policy Advisory Board Member**	Verena Consortium, Washington, D.C., USA.
2021	**External Faculty**	Vermont Complex Systems Center, Burlington, VT, USA.
2020	**External Faculty**	Santa Fe Institute, Santa Fe, NM, USA.
2020	**Expert Network Member**	World Economic Forum, Geneva, Switzerland.
2018	**Scientific Steering Committee Member**	Trend Surveillance, BioFire Diagnostics, Salt Lake City, UT, USA.
2017	**Fellow**	Institute for Scientific Interchange Foundation, Turin, Italy.
2017	**Junior Scientific Award - Complex Systems Society**	Recognizes extraordinary scientific achievements by a CSS researchers within 7 years of PhD completion.
2017	**Top Publication Award**	Davies and Scarpino et al. (2016) was selected by G3 as one of its top 15 articles published in 2016.
2012	**Course Transformation Fellowship**	Division of Statistics and Scientific Computation, The University of Texas at Austin
2012	**Graduate Research Fellowship**	Graduate School, The University of Texas at Austin
2008	**Analysis and Consulting Fellowship**	Division of Statistics and Scientific Computation, The University of Texas at Austin
2007	**Dean's Excellence Award**	2007 entering Ph.D. class, The University of Texas at Austin
2007	**Houston Livestock Show and Rodeo Fellowship**	2007 entering Ph.D. class, The University of Texas at Austin

editorial boards

Ongoing	**Section Editor**	PLoS Complex Systems
Ongoing	**Academic Editor**	PLoS Computational Biology
Ongoing	**Guest Academic Editor**	Science Advances
Ongoing	**Guest Academic Editor**	PLoS One
2020–22	**Academic Editor**	Complexity
2016–22	**Deputy Editor**	PLoS Neglected Tropical Diseases
2014–16	**Associate Editor**	PLoS Neglected Tropical Diseases
2016–21	**Guest Academic Editor**	PLoS Computational Biology

2014 **Guest Editor** PLoS Neglected Tropical Diseases

grant reviewer

National Institutes of Health (2024 panelist), National Institutes of Health (2023 panelist 3x); The Royal Society (2023 University Research Fellowship), University of Bern (Strategic Funding Board of the Medical Faculty 2023); US CDC (2022 pandelist); National Institutes of Health (2022 panelist); Wellcome Trust (2022 grant reviewer); National Institutes of Health (2020 panelist, 2x); National Science Foundation (2020 SBIR panelist); National Science Foundation (2019 panelist); National Council of Science and Technology (CONACYT), Science of Frontier 2019-20, Mexico; Medical Research Council, Skills Development Fellowship, UK; Medical Research Council, Research Grant, UK; Vermont Genetics Network, Research Grant.

invited keynotes, seminars, and panels - one hundred seven

2025 **Artificial Intelligence and Network Science**
Keynote, NetSci X, India, Indore

2024 **Ground-truth and Biology?**
Invited Presentation, Systems Biology of Human Disease, Vanderbilt University, Nashville, TN, USA

2024 **Application of AI & Machine Learning in Pharma./Biotechnology R&D: 2024 Update & Perspectives**
Invited Panel, Boston Biotech Summit, Boston, MA, USA

2024 **Insights From Leading Academics Driving Data and AI for Social Impact Curriculums**
Invited Panel, Accelerate Conference, Data.Org, Boston, MA, USA

2024 **Good data saves lives: But What Are Good Data?**
Invited Seminar, Lucy Family Institute for Data and Society, Notre Dame, South Bend, IN, USA

2024 **AI and Healthcare Industry**
Invited Seminar, Life Sciences MoForum, Boston, MA, USA

2024 **On the Shape of Epidemics**
Invited Seminar, Center for Non-linear Dynamics, Los Alamos National Lab, Los Alamos, NM, USA

2024 **On the Shape of Epidemics**
Invited Seminar, Network Science Society Colloquium Series, Online

2023 **Communicating Data and Science During Emergencies: Lessons from COVID-19**
Keynote Panel, Data Literacy at Scale, Harvard Data Science Initiative and The Institute for Experiential AI, Northeastern University, Boston, MA, USA

2023 **Setting the Stage: Overview of AI for Medical and Public Health Preparedness and Response**
Invited Seminar, Forum Meeting on Medical and Public Health Preparedness for Disasters and Emergencies, US National Academies of Sciences, Engineering, and Medicine, Washington, DC, USA

2023 **Advances in the Application of AI to Healthcare and Drug Discovery**
Keynote, Workshop on AI and Healthcare, Wake Forest Center for Artificial Intelligence Research, Winston-Salem, NC, USa

2023 **Laboratory Methods from qPCR to Meta-genomics to Multi-omics**
Invited Panel, Wastewater Surveillance Technical Convening, Hong Kong Jockey Club Charities Trust & The Rockefeller Foundation, Hong Kong

2023 **Genotype-to-Phenotype Mapping with Artificial Intelligence**
Invited Seminar, Dept. of Biochemistry & Quantitative Systems Biology Center, Vanderbilt University, Nashville, TN, USA

2023 **Epistemic Challenges in Contagion Modeling**
Keynote, epiDAMIK 6.0, ACM SIGKDD 2023, Long Beach, CA, USA

2023 **Public Health Policy for Pandemic Preparedness and Mitigation**
Invited Panel, Predictive Intelligence for Limiting Outbreak Threats (PILOT) Synthesis Workshop, Harvard University, Boston, MA, USA

2023 **On the Shape of Epidemics**
Invited Seminar, Pandemic Sciences Institute, University of Oxford, Oxford, UK

2023 **Pathogen Surveillance**
Invited Roundtable, Rhodes Policy Summit, Rhodes House, London, UK

2023 **Identifying Short-Term Strategies to Enhance Laboratory Capabilities, Capacities, and Coordination: Surveillance and Early Detection**
Invited Panel, Future of the Nation's Laboratory Systems for Health Emergency Response, US National Academies of Sciences, Engineering, and Medicine, Washington, DC, USA

2023 **On the Shape of Epidemics**
Invited Seminar, Simulation Games for Global Pandemic Resilience Workshop, Santa Fe Institute, Santa Fe, NM, USA

2023 **Gene Networks and Evolution**
Invited Seminar, Quantitative and Chemical Biology Program, Vanderbilt University, Nashville, TN, USA

2023 **Behavior-Induced Phase Transitions in Contagion Models on Networks.**
Invited Colloquium, Department of Mathematical Sciences, New Mexico State University, Las Cruces, NM, USA

2023 **Good Data Saves Lives: But What Are Good Data?**
Keynote panel, Disease Prevention and Control Summit, Philadelphia, PA, USA

2023 **On the Predictability of Infectious Disease Outbreaks**
Invited seminar, Algorithms for Threat Detection webinar series, National Geospatial Intelligence Agency, Online

2023 **Informing the Public: from Research Results to Public Impact.**
Invited Panel, Modeling Pandemic Intervention Acceptance for Disease Mitigation, Online

2023 **Navigating Beyond the Buzz: Putting Algorithms into Action**
Invited Seminar, Deep Dementia Phenotyping (DEMON) Network, Online

2023 **Mobility and the Shape of Epidemics**
Keynote, Privacy and Ethics in Pandemic Data Collection and Processing Workshop, Brown University, Providence, RI, USA

2022 **Pathogen Surveillance for Emergent Epidemics**
Keynote, Biocomplexity Institute, University of Virginia, Charlottesville, VA, USA

2022 **A Global Healthcare Ecosystem to Meet the Needs of the Next Pandemic**
Keynote, 36th Annual Plenary & Working Group Meeting, HL7 International, Baltimore, MD, USA

2022 **Good Data Saves Lives: But What Are Good Data?**
Keynote, Impact First Conference, Lisbon, Portugal

2022 **The Future of Pandemic Preparedness Today: Data, Models, and Multi-sector Collaboration**
Invited Seminar, Understanding COVID-19 to prepare for the next pandemic, Nature Conferences, Online

2022 **Business and Innovation for the Post-COVID Era**
Invited Seminar, Post-COVID Summit, European Parliament, Brussels

2022 **Pathogen Surveillance for Emergent Epidemics**
Invited Webinar, Rapid Acceleration of Diagnostics COVID-19 Series, US NIH, Online

2022 **Environmental Surveillance and the Future of Pandemic Prevention**
Invited Panel, Biotech Showcase, Online

2021 **Truth Seeking, Testing, Tracking, and Treating Covid-19**
Keynote, Node.Health's 5th Annual Digital Medicine Conference, Online

2021 **Building and Maintaining Disease Information Systems**
Invited Panel, Engaging public representatives in biosecurity and pandemic preparedness, Wilton Park, UK, Online

2021 **Network Science Theory and COVID-19**
Invited Seminar, Public Health Modeling Unit, School of Public Health, Yale University, New Haven, CT, USA

2021 **The Role of Behavior, Mobility, and Social-Network Structure on COVID-19 Epidemics**
Invited Seminar, National Academies Arab American Frontiers Program, Qatar, Online

2021 **Pandemic Preparedness in the Future: Role of Data, Meta-data and Global Collaboration**
Invited Panel, Pandemic Surveillance in Real Time: The Past, Present, and Future, IDWeek, Online

2021 **Equity & Health Disparities During COVID-19**
Invited presentation and panel, NSF PREPARE, SBEG: Social, behavioral, economic, and governance aspects of pandemics, Online

2021 **A Practitioner's View on ``Techno-Social" System Infrastructures and Operations for a More Responsible Use of Data in Health Emergencies**
Invited presentation, G7 Discussion on Improving Safe Data Access and Use for Health Emergencies, UK Cabinet Office & The Trinity Challenge, Online

2021 **Networked Data and COVID-19**
Keynote, GRADES-NDA Workshop, SIGMOD'21, Online

2021 **Network Science Theory and COVID-19**
Invited Plenary, Virtual Modeling Workshop on Epidemics, Quantitative Biosciences, Georgia Tech, Online

2021 **Good Data Can Save Lives, But What Does That Mean For Our Models?**
Invited Speaker, SARC-CoV-2 modeling: What have we learned from this pandemic about how (not) to model disease spread? Emory TMLS Virtual Workshop, Online

2020 **Improving Pandemic Data Readiness**
Invited Panel, COVID-19 Summit: Moving from Reacting to Managing, SwissRE COVID-19 Conference, Online

2020 **The Role of Behavior, Mobility, and Social-Network Structure on COVID-19 Epidemics**
Keynote, COVID-19: Evolving User Expectations and Behaviors, Google FACT Conference, Online

2020 **Network Theory and COVID-19**
Departmental Seminar, Ecology, Evolution, and Behavior, Yale University, Online

2020 **Fighting a Pandemic: Convergence of Expertise, Data Science and Policy**
Invited Panelist, 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining, Online

2020 **Combating COVID-19 w/ Data Analytics**
Invited Panel, eHI Virtual Roundtable, Online

2020 **Global.Health: An International Collaboration to Enable Rapid Sharing of Trusted and Open Public Health Data**
Invited Spearker, Post-COVID Summit, European Institute for Science, Media and Democracy, Online

2020 **The Effect of Crowding and Environmental Transmission on the Shape of COVID-19 Epidemic Curves**
Invited Lecture, Urban Net 2020 Satellite, NetSci 2020, Online

2020 **Network Theory and COVID-19**
Invited Lecture, EcoHealth2020 Satellite, NetSci 2020, Online

2020 **Science Communication and COVID-19**
Panelist, Mathematical Models in Understanding COVID-19, Institute for Pure and Applied Mathematics, UCLA, Online

2020 **The Effect of Crowding and Environmental Transmission on the Shape of COVID-19 Epidemic Curves**
COVID-19 Consortium Colloquium, University of Texas at Austin, Austin, TX, USA

2020 **Network Theory and COVID-19**
Invited Lecture, Understanding and Exploring Network Epidemiology in the Time of Coronavirus, University of Maryland

2020 **Speciation and Gene Network Evolution**
Departmental Seminar, Biological Sciences, Louisiana State University, Baton Rouge, LA, USA

2020 **The Power of Data Roundtable**
Panelist, World Economic Forum

2019 **Biological Networks**
Complex Networks Winter Workshop, Québec City, Québec, Canada

2019 **Real-time Data for Ground Truth: Humanitarian and Emergency Response Applications of Novel Data and New Technologies**
Keynote, Complex Systems for the Most Vulnerable, Singapore

2019 **Multiscale Eco-Evolutionary Dynamics of Biological Networks**
Keynote, Latin American Conference of Complex Networks, Cartagena, Colombia

2019 **Data for Infectious Disease Response: Challenges, Gaps, Needs, and Opportunities**
Geographic Perspectives on Infectious Diseases, Harvard University, Cambridge, MA, USA

2019 **Behaviour-Induced Phase Transitions in Contagion Models on Networks**
Scaling Limits of Dynamical Processes on Random Graphs, Banff International Research Station, Oaxaca City, Mexico

2019 **Digital Transformation and Novel Disease Surveillance Systems**
Surveillance: Getting from Data to Action, Council of State and Territorial Epidemiologists , Raleigh, NC, USA

2019 **Machine Learning and Clinical Decision Making**
Global Infectious Disease Institute Seminar Series, University of Vermont, Burlington, VT, USA

2018 **The Eco-Evolutionary Dynamics of Gene Interaction Networks**
Statistical Physics of Networks and Phase Transitions Workshop, Seoul National University, Seoul, South Korea

2018 **Speciation and Gene Network Evolution**
Biology Department Seminar, Boston University, Boston, MA, USA

2018 **Networks and Evolution**
Complex Networks Winter Workshop, Québec City, Québec, Canada

2018 **Network Heterogeneity Induces Entropy Barriers in Social Contagion**
NetSci2018, Paris, France

2018 **On the Predictability of Infectious Disease Outbreaks**
Center for Communicable Disease Dynamics Seminar, Harvard School of Public Health, Boston, MA, USA

2018 **The Risk of Sustained Sexual Transmission of Zika is Underestimated**
CompleNet18, Boston, MA, USA

2018 **Digital Health Data for Public Health: Friend or Foe?**
Debate on Big Data, Digital Health 2018, Lyon, France

2017 **On the Predictability of Complex Adaptive Systems**
Condensed Matter/Biophysics Seminar, Brown University, Providence, RI, USA

2017 **Topological Variation in Gene Expression**
Biostatistics and Computational Biology Seminar, Dana-Farber Cancer Institute, Boston, MA, USA

2017 **On the Predictability of Infectious Disease Outbreaks**
Contagion Satellite, Conference on Complex Systems, Cancun, MX

2017 **Complexity and Disease**
Young Researchers Network on Complex Systems Warm Up, Conference on Complex Systems, Cancun, MX

2017 **Entropy Barriers in Social Contagion**
Institute on Complex System, Northwestern University, Evanston, IL, USA

2017 **Panel discussion - Community Engagement and Behavior Change in Disease Modeling**
Measuring and Modeling Community Engagement in Health Emergencies, Bill & Melinda Gates Foundation, Washington, DC, USA

2017 **Network Heterogeneity Induces Entropy Barriers in Social Contagion**
Network Science Institute, Northeastern University, Boston, MA, USA

2017 **On the Unpredictability of Outbreaks: The Role of Ecology, Evolution, and Behavior**
Center for Infectious Disease Dynamics, Pennsylvania State University, State College, PA, USA

2017 **The Integrative Biology of Disease**
Biofrontiers Institute, University of Colorado Boulder, Boulder, CO, USA

2017 **Topological Features of Gene Regulatory Networks Predict Patterns of Natural Diversity in Environmental Response**
Department Seminar, Department of Biology, University of Vermont, Burlington, VT, USA

2016 **The Predictability Horizon for Infectious Diseases**
Population Models in the 21st Century, Mathematical Biosciences Institute, Columbus, OH, USA

2016 **On the Limits to Predictability, Or How Big Data Alone Can't Solve Our Problems**
New-Regime Management in the Era of Big Data, Morgan Stanley, New York City, NY, USA

2016 **A Complex Systems View of Infectious Disease Outbreaks**
Oppenheim Symposium, Oberlin College, Oberlin, OH, USA

2016 **Data Blindspots: High-tech Disease Surveillance Misses the Poor**
Disease Modeling Symposium, Institute for Disease Modeling, Bellevue, WA, USA

2016 **The Network Topology of Natural Variation in Abiotic Stress-Responsive Gene Expression**
Evolutionary Genomics Supergroup Seminar Series, Harvard University, Cambridge, MA, USA

2016 **Predicting Infectious Disease Outbreaks**
Vermont Complex Systems Speaker Series, University of Vermont, Burlington, VT, USA

2016 **Modeling Infectious Disease Outbreaks on Social Networks**
Department of Mathematics, St. Michael's College, Winooski, VT, USA

2015 **The Ecological and Evolutionary Dynamics of Whooping Cough**
Department of Ecology and Evolutionary Biology, the University of Arizona, Tucson, AZ, USA

2015 **Network Structure, Subclinical Infection, and Ebola**
Institute for Disease Modeling, Bellevue, WA, USA

2015 **Emergent Epidemics**
Complex Systems Summer School, Santa Fe Institute, Santa Fe, NM, USA

2015 **Network Structure, Subclinical Infection, and Ebola**
ISI Foundation, Turin, Italy

2015 **Asymptomatic Transmission and the Resurgence of *Bordetella pertussis***
Computational Ecology & Epidemiology Study Group, University of Georgia, Athens, GA, USA

2015 **Toward a Complex Systems Theory of Disease**
Vermont Complex Systems Center, University of Vermont, Burlington, VT, USA

2015 **The Role of Social Network Clustering in Ebola Virus Transmission**
Modeling the Spread and Control of Ebola in W. Africa, Atlanta, GA, USA

2014 **Epidemiological and Phylodynamic Analysis of the 2014 Ebola Outbreak Reveals Clustered Transmission**
Center for Computational, Evolutionary and Human Genomics, Stanford University, Stanford, CA, USA

2014 **Optimizing Outbreak Surveillance**
Healthcare Modeling, Multi–scale Challenges and Methods, MITRE, McLean, VA, USA

2014 **Using Your Digital Footprint to Track the Next Pandemic**
Santa Fe Institute Business Network Meeting, Palo Alto, CA, USA

2014 **Data-driven Modeling**
Graduate Workshop in Computational Social Science Modeling and Complexity, Santa Fe Institute, Santa Fe, NM, USA

2014 **The Evolution of Antiviral Resistance in Influenza**
Complex Systems Summer School, Santa Fe Institute, Santa Fe, NM, USA

2014 **Stronger Together: Modeling Lessons for Success--Public Health Practitioners' Collaboration with Computational Modelers**
Panel discussion at the National Association of County and City Health Officials Preparedness Summit, Atlanta, GA, USA

2014 **Goal-oriented Design of Surveillance Systems**
Centers for Disease Control and Prevention, San Juan, Puerto Rico, USA

2014 **Local and Nonlocal Information in a Traffic Network: How Important is the Horizon?**
American Mathematical Society, Joint Mathematics Meeting, Albuquerque, New Mexico, USA

2013 **Goal-oriented Design of Influenza Surveillance Systems**
Center for Nonlinear Studies, Los Alamos National Labs, Los Alamos, NM, USA

2013 **The Texas Pandemic Flu Toolkit**
Public Health Capabilities: Bridging the Gap Between Planning and Preparedness, Tyler, TX, USA

2013 **Public Health Surveillance: Network Design and Outbreak Prediction**
Network Dynamics and Simulation Science Laboratory, Virginia Tech Bioinformatics Institute, USA

2011 **Polyploidy and Diversification in Angiosperms**
Physiological Chemistry, University of Wurzburg, Biocenter, Am Hubland, Wurzburg, Germany

2010 **Effectiveness of the Influenza-Like Illness Surveillance Network (ILINet) in Texas**
Texas Department of State Health Services Influenza Surveillance Coordinators Conference, Austin, TX, USA

conference session organizer

2024 **Artificial Intelligence in Rehabilitation: Advancing the Art of Physical Therapy in the Age of Technology**
American Physical Therapy Association, Combined Sections Meeting, Boston, MA, USA

2021 **Big Data for Pandemic Response: Ethical, Legal, and Regulatory Responsibilities**
IMED 2021, Online

2020 **Diversify NetSci**
NetSci, Online

2019 **Diversify NetSci**
NetSci, Burlington, VT, USA

2018 **Contagion on Networks II**
NetSci, Paris, France

2017 **Contagion on Networks**
NetSci, Indianapolis, IN, USA

2015 **The Evolutionary Importance of Polyploidy**
Botany Society of America, Edmonton, Alberta, Canada

2014 **Next Generation Decision Support for the Next Pandemic**
INFORMS, San Francisco, CA, USA

professional presentations - sixty six

2023 **Artificial Intelligence in Rehabilitation: Advancing the Art of Physical Therapy in the Age of Technology**
Panel Workshop, American Physical Therapy Society, Combined Sections Meeting, Boston, MA, USA

2023 **Stopping Pandemics with Network Science**
Seminar, Network Science Institute, Northeastern University London, London, UK

2023 **Gene Networks and Evolution**
Seminar, AccelNet-MultiNet webinar series, Online

2023 **Ground-truth and Biology?**
Seminar, Institute for Experiential AI, Northeastern University, Boston, MA

2021 **On the Shape of Epidemics**
Seminar, Santa Fe Institute, Santa Fe, NM, USA

2021 **Crowding and the Shape of COVID-19 Epidemics**
Podium presentation at the Joint Network Science Society and Sunbelt Meeting, Networks 2021, Online

2021 **The Importance of Heterogeneity and Adaptivity in Collective Human Behavior During Epidemics**
Podium presentation at the SIAM Conference on Dynamical Systems, Online

2021 **The Effect of Spatial Hierarchy and Meta-Population Structure on the Shape COVID-19 of Epidemics**
Podium presentation at The American Society of Naturalists' Virtual Asilomar Conference, Online

2020 **The Role of Behavior, Mobility, and Social Networks in Shaping the COVID-19 Pandemic**
Podium presentation at the COVID19 Dynamics & Evolution Meeting, Online

2020 **The Unintended Consequences of Inconsistent Pandemic Control Policies**
Podium presentation at the Network Science Institute Seminar Series, Online

2019 **Interacting Contagions are Indistinguishable from Social Reinforcement**
Podium presentation at the Conference on Complex Systems, Singapore

2019 **Big Data, Big Responsibilities**
Panel discussion at MERL Tech, Washington DC, USA

2019 **Speciation and Gene Network Evolution**
Podium presentation at Evolution, Providence, RI, USA

2019 **Real-time Data from the Front Lines: Humanitarian Uses of New Technology**
Podium presentation at ICT4D, Kampala, Uganda

2019 **Crowdsourced Community Health Surveillance During Emergencies Using Web-based Cloud Technology**
Podium presentation at Data Science For Social Good, San Francisco, CA, USA

2018 **The Risk of Sustained Sexual Transmission of Zika is Underestimated**
Podium presentation at NetSci X, Santiago, Chile

2018 **Empowering Robust and Effective Local Public Health Infrastructure and Governance Through Cloud and Mobile-based Technology**
Podium presentation at NACCHO Public Health Informatics, Atlanta, GA, USA

2018 **Hard Talk: Will Technology and Big Data Replace Monitoring Evaluation, Research and Learning?**
Podium presentation at MERL Tech DC 2018, Washington, D.C., USA

2018 **Real-time Phenotype Prediction From Unaligned Whole Genome Sequencing Data Using Deep Learning**
Podium presentation at the Society for Molecular Biology and Evolution Annual Meeting, Yokohama, Japan

2018 **On the Predictability of Infectious Disease Outbreaks**
Podium presentation at the Center for the Ecology of Infectious Diseases, University of Georgia, Athens, GA, USA

2018 **On the Predictability of Infectious Disease Outbreaks**
Podium presentation at the American Naturalist 150th Anniversary Meeting, Asilomar, CA, USA

2017 **Data Blindspots: High-tech Disease Surveillance Misses the Poor**
Podium presentation at the Data and Algorithm Bias Conference 2017, Singapore

2017 **The Interhospital Transfer Network for Very Low Birth Weight Infants in the United States**
Podium presentation at the Conference on Complex Systems 2017, Cancun, Mexico

2017 **The Interhospital Transfer Network for Very Low Birth Weight Infants in the United States**
Podium presentation at Pediatric Academic Societies 2017, San Francisco, CA, USA

2017 **Topological features of gene regulatory networks predict patterns of natural diversity in environmental stress response**
Podium presentation at NetSci X, Tel Aviv, Isreal

2016 **On the Unpredictability of Outbreaks**
Podium presentation at the Conference on Complex Systems 2016, Amsterdam, Netherlands

2016 **Universal Limits to Predictability of Infectious Disease Outbreaks**
Podium presentation at the Limits to Prediction in Complex Systems Workshop, Santa Fe, NM, USA

2016 **A Prudent Adaptive Behaviour Accelerates Disease Transmission on Networks**
Podium presentation at the Contagion'16 CCS Satellite, Amsterdam, Netherlands

2016 **The Network Topology of Natural Variation in Abiotic Stress-Responsive Gene Expression**
Podium presentation at Evolution 2016, Austin, TX, USA

2016 **On the Unpredictability of Outbreaks**
Podium presentation in Mathematics & Foundation of Complex Systems seminar series, Turin, Italy

2016 **A Prudent Behavior Accelerates Disease Transmission on Networks**
Podium presentation at NetSci 2016, Seoul, South Korea

2016 **The Coalescent and Infectious Diseases**
Podium presentation in the Mathematics Colloquium Series, Burlington, VT, USA

2016 **The Resurgence and Persistence of Whooping Cough**
Podium presentation at the Infectious Disease Research Conference, College of Medicine, University of Vermont, Burlington, VT, USA

2016 **A Prudent Behavior Accelerates Disease Transmission**
Podium presentation in the IGERT Smart Grid Seminar Series, Burlington, VT, USA

2016 **The Network Topology of Natural Variation in Abiotic Stress-Responsive Gene Expression**
Podium presentation in the EEEB Seminar Series, Burlington, VT, USA

2016 **The Resurgence of Whooping Cough**
Podium presentation at the American Society of Naturalists Meeting, Asilomar, CA, USA

2015 **Data Blindspots: High-tech Disease Surveillance Misses the Poor**
Podium presentation at the International Society for Disease Surveillance, Denver, CO, USA

2015 **Social Network Clustering and Ebola Virus Transmission**
Podium presentation at Ecology & Evolution of Infectious Diseases, Athens, GA, USA

2015 **Designing Multifaceted Dengue Surveillance Systems**
Podium presentation at the International Symposium on Mathematical Programming, Pittsburgh, PA, USA

2015 **Polyploid Formation Shapes Flowering Plant Diversity**
Podium presentation at Evolution, Sao Paulo, Brazil

2015 **Data Blindspots: High-tech Disease Surveillance Misses the Poor**
Webinar presentation to the NIH MIDAS MISSION, Pittsburgh, PA, USA

2015 **Enhancing Disease Surveillance with Novel Data Streams**
Podium presentation at 3rd International Digital Disease Detection Conference , Florence, Italy

2015 **Polyploid Formation Shapes Flowering Plant Diversity**
Podium presentation at Botany, Edmonton, Alberta, Canada

2014 **A Primer on Network Epidemiology**
Podium presentation at Dynamics Of and On Networks, Santa Fe, NM, USA

2014 **An Integrative Surveillance System for Influenza-associated Hospitalizations in at Risk Populations**
Podium presentation at INFORMS, San Francisco, CA, USA

2014 **Evolution of a Genetic Incompatibility in the Genus *Xiphophorus***
Podium presentation at Evolution, Raleigh, NC, USA

2014 **Goal-Oriented Optimization of Surveillance Systems**
Podium presentation at the National Association of County and City Health Officials Preparedness Summit, Atlanta, GA, USA

2014 **The Texas Pandemic Influenza Preparedness Toolkit**
Podium presentation at the National Association of County and City Health Officials Preparedness Summit, Atlanta, GA, USA

2013 **Interactive Pandemic Exercise Toolkit**
Podium presentation at the American Public Health Association Annual Meeting, Boston, MA, USA

2013 **Within Host Evolution of Antiviral Resistance**
Podium presentation at the National Evolutionary Synthesis Center, Durham, NC, USA

2013 **Optimizing Provider Recruitment for Public Health Surveillance Networks**
Podium presentation at the INFORMS Annual Operations Research Meeting, Minneapolis, MN, USA

2013 **The Texas Pandemic Influenza Preparedness Exercise Toolkit**
Podium presentation at the NIH MIDAS Mission Meeting, Austin, TX, USA

2012 **Forecasting Influenza Hospitalizations**
Podium presentation at the NIH MIDAS Network Meeting, Washington, DC, USA

2012 **The Texas Pandemic Influenza Preparedness Toolkit**
Podium presentation at the NIH MIDAS Mission Meeting, Washington, DC, USA

2012 **The Evolution of a Cancer Suppressor in the Genus *Xiphophorus***
Podium presentation at Evolution, Ottawa, Canada

2011 **Optimizing Provider Recruitment for Public Health Surveillance Networks**
Podium presentation at Epidemics^3 - Third International Conference on Infectious Disease Dynamics, Boston, MA, USA

2011 **Optimizing Provider Recruitment for Influenza Surveillance Networks**
Podium presentation at Influenza 2011, Oxford, UK

2011 **Polyploidy and Diversification in Angiosperms**
Podium presentation in the Department of Ecology and Evolution, University of Lausanne, Lausanne, Switzerland

2010 **Computational Models for Designing Optimal Influenza Surveillance Networks**
Podium presentation at the INFORMS Annual Operations Research Meeting, Austin, TX, USA

2010 **Polyploidy and Speciation in Angiosperms**
Podium presentation at Evolution, Portland, OR, USA

2010 **Geographic Optimization of Influenza Surveillance Networks**
Podium presentation at the NIH MIDAS Network Meeting, Washington, DC, USA

2010 **The Polyploidy Ratchet: Using ABC to Estimate Rates of Speciation and Hybridization in Angiosperms**
Podium presentation in Population Biology Seminar Series, The University of Texas at Austin, Austin, TX, USA

2009 **The Polyploidy Ratchet: Using ABC to Estimate Rates of Speciation and Hybridization in Angiosperms**
Podium presentation at Evolution, Moscow, ID, USA

outreach - hundreds

2021 **Begining in 2021, I moved media interviews and outreach tracking to my webpage**
https://scarpino.github.io

2021 **Preventing the Next Wave: Spotting, Tracking, and Responding to Covid Variants**
RF Breakthrough, The Rockefeller Foundation, Online

2021 **The Role of Data in Pandemic Response**
Trinity Challenge Roundtable, Online

2021 **Behavioral Digital Trace Data in Response to the COVID-19 Pandemic**
Instructor, Social ComQuant Summer School, Online

2021 **Mobility and the Spread of COVID-19**
Independent Scientific Advisory Group, Ireland, Online

2021 **The Role of Non-Pharmaceutical Interventions in and the Control of COVID-19**
Independent Scientific Advisory Group, Ireland, Online

2020 **Panel Discussion: Reducing Complex COVID-19 Information For a General Audience**
Journalism Under Fire, Santa Fe Council on International Relations, Online

2020 **Panel Discussion: Understanding a Pandemic: Global Diseases**
END Initiative, Northeastern University, Online

2020 **COVID-19 and Complex Systems**
Science Cafe, NU Marine Science Center, Online

2020 **COVID-19 Became a Pandemic Because It's a Complex System**
DataBeers, Belgium, Online

2020 **Coastal Universities Coalition web briefing on Dual Disasters: Coastal Storm Season in the time of COVID-19**
Congressional Roundtable, Coastal Universities Coalition, Online

2020 **The Epidemiology of COVID-19**
Invited lecture, Pop-up course on BioEngineering and COVID-19, Northeastern University, Online

2020 **The Epidemiology of COVID-19**
Invited lecture, Pop-up course on COVID-19, Northeastern University, Online

2020 **The Role of Data in Fighting COVID-19**
Advancement Division Town Hall, Northeastern University, Boston, MA, USA

2020 **What We Know and What We Need to Know About COVID-19**
Network Science Institute, Northeastern University, Boston, MA, USA

2020 **Network and Complex Systems Analyses for Modeling Outbreaks, Famine, and Food Systems**
Tufts Nutrition Data Summit: Analytics without Borders, Boston, MA, USA

2019 **Big Data, AI, and MERL**
Responsible Data Workshop, MERL Tech 2019, Washington, DC, USA

2019 **Humanitarian Uses of Emerging Technology**
DME for Peace, M&E Thursday Talk, Washington, DC, USA

2019 **World Water Week Panel Discussion**
Office of Sustainability, Northeastern University, Boston, MA, USA

2018 **Real-time Phenotype Prediction From Unaligned Whole Genome Sequencing Data Using Deep Learning**
US Centers for Disease Control and Prevention, Atlanta, GA, USA

2018 **Paper Unwind: The Real Story Behind the Moose of Isle Royale National Park**
NetSci Graduate Student Symposium, Northeastern University, Boston, MA, USA

2018 **Advisor**
Hack for Humanity, Brown University, Providence, RI, USA

2017 **Cascading Information Enhances Network-Constrained Routing in Real-World Traffic Systems**
Data science team, Lyft, San Francisco, CA, USA

2017 **The Social Computome and Fractal Foraging** Salon, Blue Cat Wine Bar, Burlington, VT, USA

2017 **The Predictability of Complex Systems** Gund Institute research “slam”, University of Vermont, Burlington, VT, USA

2016 **Poverty and Public Health** Gund Institute for Ecological Economics, University of Vermont, Burlington, VT, USA

2016 **Data Blindspots: High-tech Disease Surveillance Misses the Poor** Data Science Meetup, Burlington, VT, USA

2016 **Data Modeling for Disease Prediction and Surveillance in [R]**
International Society of Disease Surveillance, Public Health R Working Group, Online Webinar

2016 **A Complex Systems Approach to Disease**
Board of Advisors Meeting, College of Engineering & Mathematical Sciences, University of Vermont, Burlington, VT, USA

2015 **Evolution and the Emergence of Novel Pathogens**
Computational Biology Seminar Series for Undergraduates, Louisiana State University, Baton Rouge, LA, USA

2015 ***On Immunity: an Inoculation* by Eula Biss**
I590 - Special Seminar in the Cognitive and Social Sciences, Indiana University, Bloomington, IN, USA

2015 **The Complexity of Disease** Complexity: Out of the Box Thinking: Touching the World with Today’s Science, Santa Fe, NM, USA

2015	**Methods for Designing Efficient and Effective Disease Surveillance Networks**	State of New Mexico Quarterly Epidemiology Meeting, Santa Fe, NM, USA
2015	**Forecasting Infectious Diseases**	Business Network Meeting, Santa Fe, NM, USA
2015	**Horror of Dracula**	Science on the Screen, Santa Fe, NM, USA
2015	**The Science of Data-Driven Decisions**	EE Ford Summer Leadership Session, Santa Fe, NM, USA
2015	**Poverty and Disease**	Creative Mornings, Santa Fe, NM, USA
2014-15	**Science Fair Judge**	Santa Fe Public Schools, Santa Fe, NM, USA
2013-15	**Advisory board member**	Art Science Gallery, UT Austin, USA
2014	**Income Inequality and Influenza**	American Philosophical Society, Santa Fe Institute, Santa Fe, NM, USA
2014	**Complexity Science and Ebola**	Santa Fe Radio Cafe - KSFR, Santa Fe, NM, USA
2014	**Fighting Ebola with Math**	Science Cafe for Young Thinkers - Santa Fe, NM, USA
2014	**The Ongoing Ebola Outbreak**	Rotary Club Lecture Series - Santa Fe, NM, USA
2014	**Evolutionary and Population Dynamics of the Ongoing Ebola Outbreak**	Public Seminar Series - Santa Fe Institute, USA
2014	**Mathematical Modeling for Public Health**	N.S.F. - Mentoring through Critical Transitions in Mathematics, University of New Mexico, USA
2014	**The Ongoing Ebola Outbreak**	Rotary Club Lecture Series - Los Alamos,NM, USA
2014	**What Inspired Me to Pursue Science**	High School Prize for Scientific Excellence award ceremony, Santa Fe Institute, USA
2014	**Evolution of Antiviral Resistance in Influenza**	Biology 472 Seminar Series, Northern New Mexico College, USA
2014	**Surveillance for Antiviral Resistant Influenza**	Slice of Science, Santa Fe Institute, USA
2013	**Genes, Cancer, and Evolution**	UT FORUM Osher Lifelong Learning Institute, UT Austin, USA
2012	**Cancerous Fish in Mexico: How Evolutionary Biologists Study Cancer**	O'Henry Middle School, Austin, TX, USA
2011	**Sexual Conflict and the Evolution of Sex Chromosomes**	St Edwards University, Austin, TX, USA
2011	**Zombies: Mathematical Epidemiology and Popular Culture**	Science in the Pub, Austin, TX, USA
2010	**Influenza Biology and Transmission**	Science Under the Stars, Brackenridge Field Laboratory, The University of Texas at Austin

2010	**Influenza in Texas**	She Blinded Me With Science, KVRX 91.7FM, Austin, TX, USA
2009	**Zombies: Mathematical Epidemiology and Popular Culture**	Science Study Break, University of Texas Life Sciences Library
2009	**Land Use Patterns and Disease Emergence**	Nerd Nite, Austin, TX, USA
2009	**SPORE: The Science Behind the Video Game**	Charles Darwin's 200th Birthday, University of Texas Libraries

mentoring

High School: Nitish Kaza (Northeastern), Meghan Hill (SFI), Sergio Mata (SFI), & John Chan (UT Austin).

Undergraduate: Tamara Hadzic (Northeastern), Daisha Joseph (Northeastern), Georgia Christensen (Northeastern), Ezra Levy (Northeastern), Sophia Novarre (UVM), George Chrisafis (UVM), Haedi DeAngelis (SFI), Cody O'Ferrall (SFI), Gilia Patterson (SFI), Patrick Hunt (UT Austin), & Garrett Johnson (UT Austin).

Graduate: Jesseba Fernando (Northeastern), Sharaj Kunjar (Northeastern), Tamanna Urmi (Northeastern), Jim Sheldon (Northeastern), Mohammad Mehdi Zahedi (Northeastern), Wan He (Northeastern), Chia-Hung Yang (Northeastern), Deven Gokhale (UVM), & Tandin Dorji (UVM).

Thesis Committees: Ayan Chatterjee (Network Science - Northeastern), Andrew Liu (Bioinformatics and Integrative Genomics - Harvard), Harrison Hartle (Network Science - Northeastern), Anjalika Nande (Physics - Harvard), Jessica Davis (Network Science - Northeastern), Brecia Douglas (Marine and Environmental Sciences - Northeastern), Yanchen Liu (Network Science - Northeastern), Xinyue Xiong (Network Science - Northeastern), Dina Mistry (Physics - Northeastern), Brennan Klein (Network Science - Northeastern), Timothy LaRock (Network Science - Northeastern), Syed Haque (Network Science - Northeastern), Lauren Ash (Biology - UVM), & Andy Reagan (Mathematical Sciences - UVM).

Postdoctoral: Brennan Klein (Northeastern) & Munik Shrestha (Northeastern & UVM).

Research Scientist: Arzu Tugce Guler (Northeastern), Shantanu Jain (Northeatern), Ayan Paul (Northeastern), & Brennan Klein (Northeastern).

teaching

Complex Systems Summer School: Contagion on Networks. Santa Fe Institute.

Winter Workshop on Complex Networks: Contagion on Networks. University of Laval.

PHYS 5126: Contagion on Networks. Northeastern University.

ENVR 2500: Biostatistics. Northeastern University.

ENVR 2900: Networks and Biology. Northeastern University.

STAT 201: Computational Statistics and Data Analysis. University of Vermont.

CS/STAT 295a: Introduction to Statistical Learning. University of Vermont.

reviewer - sixty two unique venues

American Journal of Botany, American Naturalist, American Society of Tropical Medicine and Hygiene, Annals of Applied Statistics, Annals of Internal Medicine, Applied Network Science, BMC Bioinformatics, BMC Medicine, BMC infectious diseases, Bulletin of Mathematical Biology, Chaos: An Interdisciplinary Journal of Nonlinear Science, Chapman and Hall, eLife, Environmental Biology of Fishes, EPJ Data Science, Eurosurveillance, Evolution, Genetics, iScience, IEEE Transactions on Control Systems Technology, Informatics in Medicine Unlocked, Interdisciplinary Perspectives on Infectious Disease, International Journal of Epidemiology, International Journal of Infectious Diseases, Journal of Mathematical Biology, Journal of Medical Entomology, Journal of Medical Internet Research, Journal of Theoretical Biology, Lancet Infectious Diseases, Molecular Biology & Evolution, Molecular Ecology, Nature, Nature Communications, Nature Human Behavior, Nature Physics, Nature Scientific Data, Nature Scientific Reports, Network Science, PeerJ, Physica A, PLoS Biology, PLoS Computational Biology, PLoS Medicine, PLoS Neglected Tropical Diseases, PLoS One, PLoS Pathogens, Physical Review E, Physical Review Letters Physical Review X, Predictive Medicine, Preventing Chronic Disease, Preventative Medicine, Proceedings of the National Academy of Sciences USA, Proceedings of the Royal Society B, Journal of The Royal Society Interface, Royal Society Open Science, Science, Science Advances, Springer Nature, Systematic Biology, Vaccine, Wellcome Open Research, Journal of Wildlife Management and Wildlife Monographs.

developed code

multiDimBio: An R Package for the Design, Analysis, and Visualization of Systems Biology Experiments. CRAN

binequality: An R Package for Performing Multimodel Estimation of Inequality from Binned Incomes. CRAN

Miscellaneous code associated with publications can be found on my website and group GitHub

preprints (not published elsewhere)

Klein B, Hartle H, Shrestha M, Zenteno AC, Barros Sierra Cordera D, Nicolas-Carlock JR, Bento AI, Althouse BM, Gutierrez B, Escalera-Zamudio M, Reyes-Sandoval A, Pybus OG, Vespignani A, Diaz-Quiñonez JA, **Scarpino SV***, Kraemer MUG.Spatial scales of COVID-19 transmission in Mexico. arXiv.

Susswein Z, Johnson KE, Kassa R, Parastaran M, Peng V, Wolansky L, **Scarpino SV**, Bento AI. Early risk-assessment of pathogen genomic variants emergence. medRxiv.

Chinazzi M, Davis JT, MU K, Pastore y Piontti A, Perra N, **Scarpino SV**, Vespignani A. Preliminary estimates of the international spreading risk associated with the SARS-CoV-2 VUI 202012/01. MOBS Lab Report.

Yang CH & **Scarpino SV**. Reproductive Barriers as a Byproduct of Gene Network Evolution. bioRxiv.

Klein B, LaRock T, McCabe S, Torres L, Privitera F, Lake B, Kraemer MUG, Brownstein JS, Lazer D, Eliassi-Rad T, **Scarpino SV**, Chinazzi M, and Vespignani A. Assessing changes in commuting and individual mobility in major metropolitan areas in the United States during the COVID-19 outbreak. Pre-print.

Althouse BM, Weinberger DM, **Scarpino SV**, Pitzer VE, Ayers JW, Wenger W, Chun-Hai Fung I, Dredze M, & Hu H. Google searches accurately forecast RSV hospitalizations. bioRxiv.

Otero G, Althouse BM, McTavish EJ, **Scarpino SV***. Analysis of clinical *Bordetella pertussis* isolates using whole genome sequences reveals novel genomic regions associated with recent outbreaks in the United States. bioRxiv.

Scarpino SV*, Guerrero RF, Scarpino, PV. The moose of Isle Royale: An unnatural condition? bioRxiv.

Scarpino SV*, Gillette R, Crews D. multiDimBio: An R package for the design, analysis, and visualization of systems biology experiments. arXiv.

working groups and workshops (*organizer*)

2020	**COVID19: After the First Wave**	Santa Fe Institute
2016	**Re-emerging Infectious Diseases: The Challenge of Pertussis**	Santa Fe Institute
2016	**Non-Equilibrium Versus Optimization Approaches to the Origin of Social Groups**	IMeRA - Aix Marseille Universite
2015	**Molecular Networks and Evolution Across Biological Scales**	Santa Fe Institute
2015	**EpiHack: Analytics**	Skoll Global Threats Fund
2015	**Dynamic Primate Contact Networks and Disease Risk**	Santa Fe Institute
2014	**Next Generation Surveillance for the Next Pandemic**	Santa Fe Institute
2014	**Molecular Network Topology and Local Adaptation**	Santa Fe Institute

working groups and workshops (*participant*)

2023	**AccelNet-MultiNet Workshop**	AccelNet-MultiNet Program
2023	**Predictive Intelligence for Limiting Outbreak Threats Synthesis Workshop**	National Science Foundation
2023	**LIFE: Leveraging Innovation From Evolution workshop**	National Science Foundation
2023	**Creating a Positive Legacy from the Pandemic: breaking the cycle of panic to neglect with an 'Always On' approach** Rhodes Policy Summit	
2023	**NSF-Simons MathBioSys Annual Meeting**	Simons Foundation
2023	**Simulation Games for Global Pandemic Resilience**	Santa Fe Institute
2023	**Dynamics of Interacting Contagions**	Santa Fe Institute
2023	**Workshop on Privacy and Ethics in Pandemic Data Collection and Processing**	Brown University
2022	**Quantitative Tools and Data Opportunities for Pandemic Surveillance and Response**	Harvard TH Chan School of Public Health
2022	**Future Directions in Multilayer Network Science**	Northeastern University
2022	**National Science Foundation Workshop on Integrating Social & Behaviorial Sciences into EEID**	Emory University
2020	**Experiential Innovation Workshop**	Northeastern University

2020	**Digital communications and IT industry response to COVID-19**	World Economic Forum
2019	**Improving Healthcare with AI**	Google and Deep Mind
2019	**EPI-BRAIN**	World Health Organization
2019	**Scaling Limits of Dynamical Processes on Random Graphs**	BIRS - Casa Matematica Oaxaca
2018	**Data Innovations for Epidemic Readiness**	World Economic Forum
2018	**Digital Economy and Society Community Meeting**	World Economic Forum
2017	**Measuring and Modeling Community Engagement in Health Emergencies**	Bill and Melinda Gates Foundation
2017	**Cyber-Social Learning Systems Workshop 3**	Computing Community Consortium
2016	**Cyber-Social Learning Systems Workshop 2**	Computing Community Consortium
2016	**Limits to Prediction**	Santa Fe Institute
2016	**Population Models in the 21st Century**	Mathematical Biosciences Institute
2016	**The Future of Digital Data for Use in Disease Detection**	Chatham House
2015	**NIH Disaster Research Response Project Exercise**	The University of Texas Health Science Center
2014	**Dynamics Of and On Networks**	Santa Fe Institute
2014	**Network on Inequality, Complexity & Health**	Santa Fe Institute
2013	**From Co-Infection to Cultural Dissonance: New Challenges for Biological and Cultural Evolution**	Santa Fe Institute
2013	**Gateways to Emergence**	Santa Fe Institute
2013	**Influenza and Twitter Hackathon**	NIH MIDAS Mission Group
2012	**Evolution of Sex-Determination Mechanisms**	Universitaire de Suisse Occidentale, La Sage, Switzerland
2010	**Emergence of Gender and Sex Chromosomes: Evolutionary Insights from a Diversity of Taxa**	National Evolutionary Synthesis Center
2009	**Investigative Workshop on Modeling Transmission Dynamics of Bovine Tuberculosis**	National Institute for Mathematical and Biological Synthesis
2008–10	**Efficient Wildlife Vaccination**	National Center for Ecological Analysis and Synthesis

service

- Search committee member, tenure-track faculty hire in Health Sciences/COE Computational/AI drug discovery, Northeastern University (2023-24).
- Steering Committee, Public Health Technologies Initiatve, Bouve College of Health Sciences, Northeastern University (2023-24).
- Faculty Leadership Committee, Institute for Experiential AI, Northeastern University (2023-24).
- Scientific Review Committee for Global Health Security 2024 (2023-24).
- Chair of Student Fellowship Committee, Faculty Leadership Committee, Institute for Experiential AI, Northeastern University (2023-24)
- Reviewer of the report to evaluate the quality of the 2020 US Census, DBASSE/Committee on National Statistics at the National Academies of Sciences, Engineering, and Medicine (2023).
- Program Committee, Collective Intelligence: Foundations and Radical Ideas, Santa Fe Institute (2023).
- Graduate Admissions Committee, Network Science Institute, Northeastern University (2023).
- COVID19 Modeling Task Force, Office of the Senior Vice Provost for Research, Northeastern University (2020-21).
- Program Committee for the ACM International WSDM Conference, Jerusalem (2021).
- SACNAS Faculty Mentor (2020).
- Advisory Board for the Tableau Coronavirus Data Hub (2020).
- Selection Committee. Google Cloud Platform Research (GCPR) Awards to accelerate COVID-19 research. Harvard Global Health Institute (2020).
- SciLine COVID-19 “Office hours.” American Association for the Advancement of Science (2020).
- Graduate Admissions Committee, Network Science Institute, Northeastern University (2019-2022).
- Graduate Education Committee, Marine & Environmental Sciences, Northeastern University (2019-2022).
- Seminar Committee, Marine & Environmental Sciences, Northeastern University (2019-2022).
- Experiential AI focus group, College of Science, Northeastern University (2019-2020).
- Program Committee for Data Science for Social Good Workshop, Taipei, Taiwan (2020).
- Roux Institute Discovery Meeting: IDEXX, Northeastern University (2020).
- Program Committee for Web Conference’s Health Track, Taipei, Taiwan (2020).
- Scientific Committee for CompleNet 2019, Tarragona, Catalonia, Spain (2019).
- Conference Program Committee: NERCCS 2019, Binghamton, NY, USA (2019).
- School Organizing Committee: NetSci, Burlington, VT, USA (2019).
- Conference Program Committee: NERCCS 2019, Binghamton, NY, USA (2019).
- Program Committee for Web Conference’s Health Track, San Francisco, CA, USA (2019).
- Delphi Panel: Epidemic Forecasting Reporting Guideline, Johns Hopkins Center for Biosecurity (2019).
- Conference Program Committee: ICCS 2018, Boston, MA, USA (2018).
- Conference Workshop Program Committee: SIAM Network Science Workshop, Portland, OR, USA (2018).
- Conference Program Committee: NERCCS 2018, Binghamton, NY, USA (2018).
- Conference Program Committee: NetSci, Indianapolis, IN, USA (2017).

- Complex Systems Society Governing Council (2017–2019).
- Conference Workshop Program Committee: SIAM Network Science Workshop, Pittsburgh, PA, USA (2017).
- Statistics undergraduate and graduate curriculum committees, University of Vermont (2017).
- Search committee member, Four Tenure-Track Hires in Complex Systems, University of Vermont (2016).
- Health Service Research Center Steering Committee, College of Medicine, University of Vermont (2016-17).
- Bioinformatics Working Group, College of Medicine, University of Vermont (2016-17).
- Conference Session Reviewer: Computational health track, 26th WWW Conference, Perth, Australia (2016).
- Conference Session Reviewer: Contagion 2015, Conference on Complex Systems, Tempe, AZ, USA (2015).
- Slice of Science seminar series chair, Santa Fe Institute (2014-15).
- Organizing committee: Integrative Biology Graduate Research Symposium (2008-13).
- Research and Educational Technology Committee (2009-13).
- Graduate Student Assembly and Center for Teaching and Learning TA/AI Panel (2013).
- Regent's outstanding teaching award committee (2011-12).
- University Health Services Committee (2011-12).
- Parking and Transportation Services Appeals Committee (2010-11).
- Provost's Student Advisory Committee (2010-11).
- Dean of the Graduate Schools Student Advisory Committee (2010-11, 2011-12).
- Graduate Student Assembly - Student Affairs Director (2010-11).
- Graduate Student Assembly - Department Representative (2009-10, 2011-12).

organization membership

American Association for the Advancement of Science, American Society of Naturalists, American Physical Society, Complex Systems Society, Network Science Society, and Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS).