

CURRICULUM VITAE of Nicholas G. Reich ¹

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EDUCATION

Ph.D. in Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2010
Thesis title: *Statistical methods for incomplete data from infectious disease outbreaks*
Thesis advisor: [Ron Brookmeyer](#)
B.A. in English, Carleton College, 2001, *magna cum laude*

PROFESSIONAL EXPERIENCE

2021 - Professor, Department of Biostatistics and Epidemiology
University of Massachusetts, Amherst
2019 - 2020 Visiting Faculty and Humboldt Research Fellow, Institut für Statistik,
Ludwig-Maximilians-Universität, Munich, Germany
2017 - 2021 Associate Professor, Department of Biostatistics and Epidemiology
University of Massachusetts, Amherst
2013 - 2017 Assistant Professor, Department of Biostatistics and Epidemiology
University of Massachusetts, Amherst
2011 - 2013 Research Assistant Professor, Department of Biostatistics and Epidemiology
University of Massachusetts, Amherst
2010 - 2011 Post-doctoral fellow, Department of Epidemiology & Department of Hospital
Epidemiology and Infection Control, Johns Hopkins University
2006 - 2010 Research Assistant, Department of Biostatistics, Johns Hopkins University
2005 Research Assistant, Framingham Heart Study, Boston, MA

HONORS AND AWARDS

2021 [Chancellor's Medal and Distinguished Faculty Lecture Series](#), UMass-Amherst
2019 Alexander von Humbolt Fellowship for Experienced Researchers
2019 Paper nominated for Shepard Science Award, CDC (Reich et al., 2018, *SciRep*)
2019 Director's Award, 3rd year extension to funded DARPA Young Faculty Award
2019 Nominated for College Outstanding Teacher Award, UMass-Amherst SPHHS
2015 1st place, Outstanding Research Articles in Biosurveillance, Intl Soc of Dis Surv.
2015 Nominated for College Outstanding Teacher Award, UMass-Amherst SPHHS
2013 Honorable Mention for coarseDataTools R package, [Open Source Software Initiative](#)
2012 Open Education Initiative Award, Provost's Office and Libraries at UMass-Amherst
2010 Statistics in Epidemiology Young Investigator Award, ASA Stat in Epi. Section
2010 First prize, Student Research Competition, APHA, Statistics Section
2009 [Helen Abbey Award](#) for excellence in teaching, Dept of Biostatistics, JHBSPPH

¹Last updated November 20, 2023

ORIGINAL RESEARCH

Full citation list at [Google Scholar](#)

Under review, under revision, or submitted

---- = mentored student author

80. Wadsworth S, Niemi J, **Reich NG**. Mixture distributions for probabilistic forecasts of disease outbreaks. [[preprint](#)]
79. Howerton E, Contamin L, Mullany LC, Qin M, **Reich NG**, ... Viboud C, Lessler J. Informing pandemic response in the face of uncertainty. An evaluation of the U.S. COVID-19 Scenario Modeling Hub [[preprint](#)]
78. Lopez V, Cramer EY, Pagano R, ... Biggerstaff M, **Reich NG**, Johansson MA. Challenges of COVID-19 Case Forecasting in the US, 2020-2021. [[preprint](#)]
77. Bi Q, Cummings DAT, **Reich NG**, Keegan LT, Kaminsky J, Salje H, Clapham H, Doung-ngern P, Iamsirithaworn S, Lessler J. Seasonal patterns of dengue incidence in Thailand across the urban-rural gradient. [[preprint](#)]
76. Ray EL, [Wattanachit N](#), Niemi J, [Kanji AH](#), [House K](#), [Cramer EY](#), Bracher J, Zheng A, Yamana TK, Xiong X, Woody S, Wang Y, Wang L, Walraven RL, Tomar V, Sherratt K, Sheldon D, Reiner RC, Prakash BA, Osthus D, Li ML, Lee EC, Koyluoglu U, Keskinocak P, Gu Y, Gu Q, George GE, España G, Corsetti S, Chhatwal J, Cavany S, Biegel H, Ben-Nun M, Walker J, Slayton R, Lopez V, Biggerstaff M, Johansson MA, **Reich NG**, on behalf of the COVID-19 Forecast Hub Consortium. Ensemble Forecasts of Coronavirus Disease 2019 (COVID-19) in the U.S. [[preprint](#)]
75. [Lauer SA](#), **Reich NG**, Balzer LB. The covariate-adjusted residual estimator and its use in both randomized trials and observational settings. [[preprint](#)]
74. [Kusiak C](#), Santillana M, Lessler J, Iamsirithaworn S, **Reich NG**. Real-time dengue forecasting in Thailand: a comparison of penalized regression approaches using internet search data.

Published

73. **Reich NG**, Wang Y, Burns M, Ergas R, [Cramer EY](#), Ray EL (9999). Assessing the utility of COVID-19 case reports as a leading indicator for hospitalization forecasting in the United States *Epidemics* 45: 100728. [[preprint](#) ; [html](#)]
72. Sherratt K, Gruson H, Grah R, ... Gibson GC, Ray EL, **Reich NG**, Sheldon D, Wang Y, [Wattanachit N](#), ... Bracher J, Funk S. Predictive performance of multi-model ensemble forecasts of COVID-19 across European nations. *eLife*. 2023. 12: e81916. [[preprint](#) ; [html](#)]
71. [Wattanachit N](#), Ray EL, McAndrew TC, **Reich NG**. Comparison of Combination Methods to Create Calibrated Ensemble Forecasts for Seasonal Influenza in the U.S. *Statistics in Medicine*. 2023. [[preprint](#) ; [html](#)]
70. Borchering RK, Mullany LC, Howerton E, Chinazzi M, Smith CP, Qin M, **Reich NG**, ... Viboud C, Lessler J. Impact of SARS-CoV-2 vaccination of children ages 5-11 years on COVID-19 disease burden and resilience to new variants in the United States, November 2021-March 2022: a multi-model study. *Lancet Regional Health-Americas*. 2023. 17: 100398. [[preprint](#) ; [html](#)]
69. [Gibson GC](#), **Reich NG**, Sheldon D. Real-time Mechanistic Bayesian Forecasts of COVID-19 Mortality. *Ann. Appl. Stat.* 2023. 17(3): 1801-1819. [[preprint](#) ; [html](#)]
68. McAndrew TC, **Reich NG**. An expert judgment model to predict early stages of the COVID-19 outbreak in the United States. *PLoS Comput Biol*. 2022. 18(9); e1010485. [[preprint](#) ; [html](#)]

67. Nixon K, Jindal S, Parker F, **Reich NG**, Ghobadi K, Lee EC, Truelove S, Gardner L. An evaluation of prospective COVID-19 modelling studies in the USA: from data to science translation. *Lancet Digital Health*. 2022. 4(10); E738-E747. [[preprint](#) ; [html](#)]
66. Ray EL, Brooks LC, Bien J, Biggerstaff M, Bosse NI, Bracher J, Cramer EY, Funk S, Gerding A, Johansson MA, Rumack A, Wang Y, Zorn M, Tibshirani RJ, **Reich NG**. Comparing trained and untrained probabilistic ensemble forecasts of COVID-19 cases and deaths in the United States. *Intl J Forecasting*. 2023. 39(3); 1366-1383. [[html](#) ; [preprint](#)]
65. Cramer EY, Huang Y, Wang Y, Ray EL, Cornell M, Bracher J, Brennen A, Castro Rivadeneira AJ, Gerding A, House K, Jayawardena D, Kanji AH, Khandelwal A, Le K, Niemi J, Stark A, Shah A, Wattanachit N, Zorn MW, **Reich NG**. The United States COVID-19 Forecast Hub dataset. *Scientific Data*. 2022. 9(462). [[html](#) ; [preprint](#)]
64. Cramer EY, Ray EL, Lopez VK, ..., **Reich NG**. Evaluation of individual and ensemble probabilistic forecasts of COVID-19 mortality in the US. *PNAS*. 2022. 119(15): e2113561119. [[html](#) ; [preprint](#)]
63. McAndrew T, **Reich NG**. Adaptively stacking ensembles for influenza forecasting with incomplete data. *Stats in Medicine*. 2021. 40(30):6931-6952. [[html](#) ; [preprint](#)]
62. Pollett S, Johansson MA, **Reich NG**, Brett-Major D, Del Valle SY, Venkatramanan S, et al. Recommended reporting items for epidemic forecasting and prediction research: The EPIFORGE 2020 guidelines. *PLOS Med* 2021. 18(10): e1003793. [[html](#)]
61. Bessesen MT, Rattigan S, Frederick J, Cummings DAT, Gaydos CA, Gibert CL, Gorse GJ, Nyquist AC, Price CS, **Reich NG**, Simberkoff MS, Brown AC, Radonovich LJ, Perl TM, Rodriguez-Barradas MC. Outpatient healthcare personnel knowledge and attitudes towards infection prevention measures for protection from respiratory infections. *American Journal of Infection Control*. 2021. [[html](#)]
60. Los J, Gaydos CA, Gibert CL, Gorse GJ, Lykken J, Nyquist AC, Price CS, Radonovich LJ Jr, Rattigan S, **Reich NG**, Rodriguez-Barradas M, Simberkoff M, Bessesen M, Brown AC, Cummings DAT, Perl TM; ResPECT Study Team. Take-home kits to detect respiratory viruses among healthcare personnel: Lessons learned from a cluster randomized clinical trial. *Am J Infect Control*. 2021. 49(7):893-899. [[html](#)]
59. Simberkoff M, Rattigan S, Gaydos C, Gibert C, Gorse G, Nyquist A, Price CS, **Reich NG**, Rodriguez-Barradas MC, Bessesen M, Brown AC, Cummings DAT, Radonovich LJ, Perl TM. (2021). Impact of mandatory vaccination of healthcare personnel on rates of influenza and other viral respiratory pathogens. *Infection Control & Hospital Epidemiology*. [[html](#)]
58. Borchering RK, Viboud C, Howerton E, Smith CP, Truelove S, Runge MC, **Reich NG**, ..., Lessler J. Modeling of future COVID-19 cases, hospitalizations, and deaths by vaccination and nonpharmaceutical interventions scenarios – United States, April-September 2021. *MMWR Morb Mortal Wkly Rep*. 2021. 70:719-724. [[html](#)]
57. Snyder T, Ravenhurst J, Cramer EY, **Reich NG**, Balzer L, Alfandari D, Lover AA. Serological surveys to estimate cumulative incidence of SARS-CoV-2 infection in adults (Sero-MAss study), Massachusetts, July-August 2020: a mail-based cross-sectional study. *BMJ Open*. 2021. 11:e051157. [[html](#)]
56. Bracher J, Ray EL, Gneiting T, **Reich NG**. Evaluating epidemic forecasts in an interval format. *PLOS Comp Bio*. 2021. 17(2): e1008618. [[html](#) ; [preprint](#)]
55. Gibson GC, Moran K, **Reich NG**, Osthus D. Improving Probabilistic Infectious Disease Forecasting Through Coherence. *PLOS Comp Bio*. 2021. 17(1): e1007623. [[html](#) ; [preprint](#)]
54. **Reich NG**, Cornell M, Ray EL, House K, Le K. The Zoltar forecast archive: a tool to facilitate standardization and storage of interdisciplinary prediction research. *Scientific Data*. 2021. 8:59. [[html](#) ; [preprint](#)]

53. Weinberger DM, Chen J, Cohen T, Crawford FW, Mostashari F, Olson D, Pitzer VE, **Reich NG**, Russi M, Simonsen L, Watkins A, Viboud C. Estimation of Excess Deaths Associated With the COVID-19 Pandemic in the United States, March to May 2020. *JAMA Intern Med.* 2020. 180(10):1336-1344. [[html](#)]
52. Cummings DAT, Radonovich LJ, Gorse GJ, Gaydos CA, Bessesen MT, Brown AC, Gibert CL, Hitchings MDT, Lessler J, Nyquist AC, Rattigan SM, Rodriguez-Barradas MC, Price CS, **Reich NG**, Simberkoff MS, Perl TM. Risk Factors for Healthcare Personnel Infection with Endemic Coronaviruses (HKU1, OC43, NL63, 229E): Results from the Respiratory Protection Effectiveness Clinical Trial (ResPECT). *Clinical Infectious Diseases.* 2020. [[html](#)]
51. Lauer SA, Grantz KH, Bi Q, Jones FK, Zheng Q, Meredith H, Azman AS, **Reich NG**, Lessler J. The incubation period of 2019-nCoV from publicly reported confirmed cases: estimation and application. *Annals of Internal Medicine.* 2020. 172(9):577-582. [[html](#)]
50. Al Hossain F, Lover A, Corey G, **Reich NG**, Rahman T. FluSense: A Contactless Sensing Platform for Patient Counts and Influenza-Like-Illness Surveillance in Hospital Waiting Areas. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies.* 2020. 4(1): 1. [[html](#)]
49. Brown AC, Lauer SA, Robinson CC, Nyquist AC, Rao S, **Reich NG**. Evaluating the ALERT algorithm for local outbreak onset detection in seasonal infectious disease surveillance data. *Stat Med.* 2020. 39(8):1145-1155. [[html](#) ; [preprint](#)]
48. **Reich NG**, McGowan C, Yamana T, Tushar A, Ray EL, Osthus D, Kandula S, Brooks L, Moore E, Crawford-Crudell W, Gibson GC, Moore E, Silva R, Biggerstaff M, Johansson MA, Rosenfeld R, Shaman J. Accuracy of real-time multi-model ensemble forecasts for seasonal influenza in the U.S. *PLOS Comp Bio.* 2019. 15(11): e1007486. [[html](#) ; [preprint](#)]
47. Johansson MA, . . . , **Reich NG**, Brown AC, Lauer SA, Ray EL, Sakrejda K, Meng X, . . . et al. Advancing probabilistic epidemic forecasting through an open challenge: The Dengue Forecasting Project. *PNAS.* 2019. [[pdf](#) ; [html](#)]
46. **Reich NG**, Brooks L, Fox S, Kandula S, McGowan C, Moore E, Osthus D, Ray EL, Tushar A, Yamana T, Biggerstaff M, Johansson MA, Rosenfeld R, Shaman J. A collaborative multiyear, multimodel assessment of seasonal influenza forecasting in the United States *PNAS.* 2019. 116(8): 3146-3154. [[preprint](#) ; [html](#)]
45. Radonovich LJ, Simberkoff MS, Bessesen MT, Brown AC, Cummings DAT, Gaydos C, Los J, Krosche AE, Gibert CL, Gorse GJ, Nyquist AC, **Reich NG**, Rodriguez-Barradas MC, Price CS, Perl TM. N95 Respirators vs Medical Masks for Preventing Influenza Among Health Care Personnel A Randomized Clinical Trial. *JAMA.* 2019. 322(9): 824-833. [[html](#)]
44. McGowan C, Biggerstaff M, Johansson M, Apfeldorf K, Ben-Nun M, Brooks L, Convertino M, Erraguntla M, Farrow D, Freeze J, Ghosh S, Hyun S, Kandula S, Lega J, Liu Y, Michaud N, Morita H, Niemi J, Ramakrishnan N, Ray EL, **Reich NG**, Riley P, Shaman J, Tibshirani R, Vespignani A, Zhang Q, Reed C. Collaborative efforts to forecast seasonal influenza in the United States, 2015-2016. *Sci Rep.* 2019, 9(683). [[html](#)] * **Paper nominated for 2019 Shepard Science Award, CDC.**
43. Lauer SA, Sakrejda K, Ray EL, Suangtho P, Hinjoy S, Iamsirithaworn S, Suthachana S, Cummings DAT, Lessler J, **Reich NG**. Prospective forecasts of annual dengue hemorrhagic fever incidence in Thailand, 2010-2014. *PNAS.* 2018, 115(10) : E2175-E2182 [[html](#)]
42. **Reich NG**, Lessler J, Varma JK, Vora NM. Quantifying the Risk and Cost of Active Monitoring for Infectious Diseases. *Nat Sci Rep.* 2018, 8: 1093. [[html](#) ; [preprint](#)]
* **Paper nominated for 2018 Shepard Science Award, CDC.**
41. Ray EL, **Reich NG**. Prediction of infectious disease epidemics via weighted density ensembles. *PLOS Comp Bio.* 2018, 14(2): e1005910. [[html](#) ; [preprint](#)]

40. Frederick J, [Brown AC](#), Cummings DAT, Gaydos CA, Gibert CL, Gorse GJ, Los JG, Nyquist AC, Perl TM, Price CS, Radonovich LJ, **Reich NG**, Rodriguez-Barradas MC, Bessesen MT, Simberkoff MS, for the ResPECT Team. Protecting Healthcare Personnel in Outpatient Settings: The Influence of Mandatory Versus Nonmandatory Influenza Vaccination Policies on Workplace Absenteeism During Multiple Respiratory Virus Seasons. *Infect Control Hosp Epidemiol*. 2018. [[html](#)]
39. Wang X, **Reich NG**, Horton N. Enriching Students' Conceptual Understanding of Confidence Intervals: An Interactive Trivia-based Classroom Activity. *American Statistician*. 2018. [[preprint](#)]
38. Freeman JR, Whitcomb BW, Roy A, Bertone-Johnson ER, **Reich NG**, Healy AJ. A pilot longitudinal study of anti-Müllerian hormone levels throughout gestation in low risk pregnancy. *Health Science Reports*. 2018, e53.
37. [Ray EL](#), [Sakrejda K](#), [Lauer SA](#), Johansson MA, **Reich NG**. Infectious disease prediction with kernel conditional density estimation. *Statistics in Medicine*. 2017. 36(30): 4908-4929. [[html](#); [preprint](#)]
36. [Tushar A](#), **Reich NG**. flusight: interactive visualizations for infectious disease forecasts. *The Journal of Open Source Software*. 2017, 2(13). [[html](#)]
35. **Reich NG**, [Lauer SA](#), [Sakrejda K](#), Iamsirithaworn S, Hinjoy S, Suangtho P, Suthachana S, Clapham H, Salje H, Cummings DAT, Lessler J. Challenges in real-time prediction of infectious disease: a case study of dengue in Thailand. *PLOS Neglected Tropical Diseases*. 2016, 10(6): e0004761. [[html](#); [pdf](#)]
34. **Reich NG**, Lessler J, [Sakrejda K](#), [Lauer SA](#), Iamsirithaworn S, Cummings DAT. Case studies in evaluating time series prediction models using the relative mean absolute error. *American Statistician*. 2016, 70(3):285-292. [[html](#); [pdf](#)]
33. Lessler J, Ott CT, Carcelen AC, Konikoff JM, Williamson J, Bi Q, **Reich NG**, Cummings DAT, Kucirka LM, Chaisson LH. Time to Key Events in the Course of Zika Infection and their Implications for Surveillance: A Systematic Review and Pooled Analysis. *Bulletin of the World Health Organization*. 2016, 94:841-849. [[pdf](#)]
32. Johansson MA, **Reich NG**, Hota A, Brownstein JS, Santillana M. Evaluating the performance of infectious disease forecasts: A comparison of climate-driven and seasonal dengue forecasts for Mexico. *Scientific Reports*. 2016, 6: 33707. [[html](#) ; [pdf](#)]
31. Radonovich LJ, Bessesen M, Cummings DAT, Eagan A, Gaydos C, Gibert C, Gorse G, Nyquist C, **Reich NG**, Rodriguez-Barradas M, Savor-Price C, Shaffer R, Simberkoff M, Perl TM. The Respiratory Protection Effectiveness Clinical Trial (ResPECT): A Cluster-Randomized Comparison of Respirator and Medical Mask Effectiveness against Respiratory Infections in Healthcare Personnel. *BMC Infectious Diseases*. 2016. 16:243. [[html](#) ; [pdf](#)]
30. Hart V, Sturgeon SR, **Reich NG**, Sievert LL, Crawford SL, Gold EB, Avis NE, Reeves KW. Menopausal vasomotor symptoms and incident breast cancer risk in the Study of Women's Health Across the Nation. *Cancer Causes & Control*. 2016, 27(11):1333-1340. [[html](#)]
29. Silveira M, Wexler L, Chamberlain J, Straubaur KM, Spencer R, **Reich NG**, Bertone-Johnson ER. Seasonality of Suicide Behavior in Northwest Alaska: 1990-2009. *Public Health*. 2016, 137: 35-43. [[html](#) ; [pdf](#)]
28. **Reich NG**, Cummings DAT, [Lauer SA](#), Zorn M, Robinson C, Nyquist AC, Price CS, Simberkoff M, Radonovich LJ, Perl TM. Triggering Interventions for Influenza: The ALERT Algorithm. *Clinical Infectious Diseases*. 2015, 60(4): 499-504. [[html](#) ; [pdf](#)]
27. [Lauer SA](#), Kleinman KP, **Reich NG**. The Effect of Cluster Size Variability on Statistical Power in Cluster Randomized Trials. *PLoS ONE*. 2015, 10(4): e0119074 [[html](#) ; [pdf](#)]

26. Hart V, Reeves KW, Sturgeon SR, **Reich NG**, Sievert LL, Kerlikowske K, Ma L, Shepherd J, Tice J, Sprague BL. The effect of weight change on volumetric measures of mammographic density. *Cancer Epidemiol Biomarkers Prev.* 2015, 24(4):761. [[html](#)]
25. Barney LE, Dandley EC, Jansen LE, **Reich NG**, Mercurio AM, Peyton SR. Integrin Expression and Phenotype Predict Breast Cancer Metastasis. *Integrative Biology.* 2015, 7: 198-212. [[html](#) ; [pdf](#)]
24. Elfawal M, Towler MJ, **Reich NG**, Weathers PJ, Rich SM. Dried whole plant *Artemisia annua* slows evolution of malaria drug resistance and overcomes resistance to artemisinin. *PNAS.* 2015, 112(3): 821–826. [[html](#) ; [pdf](#)]
23. Hart V, Reeves KW, Sturgeon SR, **Reich NG**, Sievert LL, Kerlikowske K, Ma L, Shepherd J, Tice J, Mahmoudzadeh AP, Malkov S, Sprague BL. The effect of change in body mass index on volumetric measures of mammographic density. *Cancer Epi Biomarkers Prev.* 2015, 24:1724-1730. [[html](#) ; [pdf](#)]
22. **Reich NG**, Shrestha S, King AA, Rohani P, Lessler J, Kalayanaroj S, Yoon IK, Gibbons RV, Burke DS, Cummings DAT. Interactions between serotypes of dengue highlight epidemiological impact of cross-immunity. *Journal of the Royal Society Interface.* 2013, 10 (86), 20130414. [[html](#) ; [pdf](#)]
21. Milstone AM, **Reich NG**, Advani S, Yuan G, Bryant K, Coffin SE, Huskins C, Livingston R, Saiman L, Smith PB, Song X. Catheter Dwell Time and CLABSIs in Neonates with PICCs: A Multicenter Cohort Study. *Pediatrics.* 2013, 132(6): 21609-e1615. [[html](#) ; [pdf](#)]
20. Lee RM, Lessler J, Lee RA, Rudolph KE, **Reich NG**, Perl TM and Cummings DAT. Incubation periods of viral gastroenteritis: a systematic review. *BMC Infectious Diseases.* 2013, 13: 446. [[html](#) ; [pdf](#)]
19. Milstone AM, Elward A, Song X, Zerr DM, Orscheln R, Speck K, Obeng D, **Reich NG**, Coffin SE, Perl TM for the Pediatric SCRUB Trial Study Group. Daily Chlorhexidine Bathing To Reduce Bacteremia in Critically Ill Children: a Multicenter, Cluster-Randomized, Two-Period Crossover Trial. *The Lancet.* 381 (9872), 1099-1106. [[html](#) ; [pdf](#)]
18. Passaretti CL, Otter JA, **Reich NG**, Myers JA, Shepard J, Howard T, Carroll KC, Lipsett P, Perl TM. Environmental decontamination with hydrogen peroxide vapor reduces the risk of patient acquisition of multidrug-resistant organisms. *Clinical Infectious Diseases.* 2013, 56(1): 27-35. [[html](#) ; [pdf](#)]
17. Jumani K, Advani S, **Reich NG**, Gosey L, Milstone AM. Complications Associated with Peripherally Inserted Central Venous Catheters in Children. *JAMA Pediatrics.* 2013, 167 (5): 429–435. [[html](#) ; [pdf](#)]
16. Xu G, Wesker J, White C, Campbell J, **Reich NG**, Rich SM. Detection and heterogeneity of *Borrelia burgdorferi* in Ixodes ticks by culture-dependent and culture-independent methods. *Journal of Clinical Microbiology.* 2013, 51(2): 615-617. [[html](#) ; [pdf](#)]
15. Popoola V, Tamma P, **Reich NG**, Perl TM, Milstone AM. Risk Factors for Persistent MRSA Colonization in Children with Multiple Intensive Care Unit Admissions. *Infection Control and Hospital Epidemiology.* 2013, 34(7): 748–750.[[html](#)]
14. Popoola VO, Carroll KC, Ross T, **Reich NG**, Perl TM and Milstone AM. Impact of Colonization Pressure and Strain Type on MRSA Transmission in Children. *Clinical Infectious Diseases.* 2013, 57(10): 1458–1460. [[html](#) ; [pdf](#)]
13. Rock C, Harris AD, **Reich NG**, Johnson JK, Thom KA. Is hand hygiene before donning non-sterile gloves in the ICU a waste of health care worker time? A randomized controlled trial. *American Journal of Infection Control.* 2013, 41(11): 994–996. [[html](#) ; [pdf](#)]
12. **Reich NG**, Myers JA, Obeng D, Milstone AM, Perl TM. Empirical power and sample size calculations for cluster-randomized and cluster-randomized crossover studies. *PLoS ONE* 2012, 7(4): e35564. [[html](#) ; [pdf](#)]

11. **Reich NG**, Lessler J, Cummings DAT, Brookmeyer R. Estimating absolute and relative case fatality ratios from infectious disease surveillance data. *Biometrics*. 2012, 68(2): 598-606. [[html](#) ; [pdf](#)]
10. Elfawal M, Towler MJ, **Reich NG**, Golenbock D, Weathers PJ, Rich SM. Dried Whole Plant *Artemisia annua* as an Antimalarial Therapy. *PLoS ONE*. 2012, 7(12): e52746. [[html](#) ; [pdf](#)]
9. Huntington I, Shrestha S, **Reich NG**, Hagopian A. Career intentions of Nepali medical students: A survey-based cross-sectional study. *Health Policy and Planning*. 2012, 27(5): 417-428. [[html](#) ; [pdf](#)]
8. **Reich NG**, Lessler J, Perl TM, Cummings DAT. Visualizing clinical evidence: citation networks for the incubation periods of respiratory viral infections. *PLoS ONE*. 2011, 6(4): e19496. [[html](#) ; [pdf](#)]
7. An M, **Reich NG**, Crawford SO, Brookmeyer R, Louis TA, Nelson KE. Stochastic simulation of a blood product donation environment with demand spikes and supply shocks. *PLoS ONE* 2011, 6(7): e21752. [[html](#); [pdf](#)]
6. Advani S, **Reich NG**, Sengupta A, Gosey L, Milstone AM. Central Line Associated Bloodstream Infections in Hospitalized Children with Peripherally Inserted Central Venous Catheters. *Clinical Infectious Diseases*. 2011, 52(9): 1108-1115. [[html](#); [pdf](#)]
5. **Reich NG**, Lessler J, Cummings DAT, Brookmeyer R. Estimating incubation periods with coarse data. *Statistics in Medicine*. 2010, 28(22): 2769–2784. [[html](#);pdf]
4. Lessler J, Brookmeyer R, **Reich NG**, Nelson KE, Cummings DAT, Perl TM. Identifying Probable Sources of Infection for Respiratory Viruses. *Infection Control and Hospital Epidemiology*. 2010, 31(8): 809-15. [[html](#);pdf]
3. Lessler J, **Reich NG**, Cummings DAT and The DOHMH Swine Influenza Investigation Team. Outbreak of 2009 Pandemic Influenza A (H1N1) at a New York City School. *New England Journal of Medicine*. 2009, 361(27): 2628-2636. [[html](#);pdf]
2. Lessler J, **Reich NG**, Brookmeyer R, Perl TM, Nelson KE, Cummings DAT. A systematic review of the incubation periods of acute respiratory viral infections. *Lancet Infectious Diseases*. 2009, 9(5): 291–300. [[html](#);pdf]
1. Crawford SO, **Reich NG**, An M, Brookmeyer R, Louis TA, Nelson KE, Notari EP, Trouern-Trend J, and Zou S. Regional and temporal variation in American Red Cross blood donations, 1995–2005. *Transfusion*. 2009, 48: 1576-1583. [[html](#);pdf]

COMMENTARIES, LETTERS & REVIEWS

16. Nixon K, Jindal S, Parker F, Marshall M, **Reich NG**, Ghobadi K, Lee EC, Truelove S, Gardner L. An evaluation of prospective COVID-19 modelling studies in the USA: from data to science translation. *Lancet Digital Health*. 4(10), E738-E747. [[html](#)]
15. Nixon K, Jindal S, Parker F, Marshall M, **Reich NG**, Ghobadi K, Lee EC, Truelove S, Gardner L. Real-time COVID-19 forecasting: challenges and opportunities of model performance and translation. *Lancet Digital Health*. 2022 4(10); E699-E701. [[html](#)]
14. **Reich NG**, Lessler J, Funk S, Viboud C, Vespignani A, Tibshirani RJ, Shea K, Schienle M, Runge MC, Rosenfeld R, Ray EL, Niehus R, Johnson HC, Johansson MA, Hochheiser H, Gardner L, Bracher J, Borchering RK, Biggerstaff M. Collaborative Hubs: Making the Most of Predictive Epidemic Modeling. *AJPH*. 2022. [[html](#)]
13. **Reich NG**, Ray EL. Collaborative modeling key to improving outbreak response. **PNAS**. 2022. 119(14): e2200703119. [[html](#)]

12. McAndrew T, Wattanachit N, Gibson GC, **Reich NG**. Aggregating predictions from experts: a scoping review of statistical methods, experiments, and applications. *WIREs Comp Stat*. 2020. [[preprint](#); [html](#)]
11. Pollett S, Johansson MA, Biggerstaff M, Morton L, Bazaco S, Major DB, Stewart-Ibarra A, Pavlin J, Mate S, Sippy R, Hartman L, **Reich NG**, Berry IM, Chretien JP, Althouse B, Meyer D, Viboud C, Rivers C. Identification and evaluation of epidemic prediction and forecasting reporting guidelines: a systematic review and a call for action. *Epidemics*. 2020. 33: 100400. [[html](#)]
10. Biggerstaff M, Dahlgren FS, Fitzner J, George D, Hammond A, Hall I, Haw D, Imai N, Johansson MA, Kramer S, McCaw JM, Moss R, Pebody R, Read JM, Reed C, **Reich NG**, Riley S, Vandemaele K, Viboud C, Wu JT. Coordinating the real-time use of global influenza activity data for better public health planning. *Influenza and Other Respiratory Viruses*. 2020. 14(2): 105-110. [[html](#)]
9. Kazemi A, Kennedy C, Silverman G, **Reich NG**. Opioids in the USA: Disparities in addiction and incarceration. *Significance*. 2019. 16(5):6-7. * **Invited contribution for the first-place team in the 2018 ASA Public Health Data Challenge** [[html](#)]
8. **Reich NG**, Osthus D, Ray EL, Yamana TK, Biggerstaff M, Johansson MA, Rosenfeld R, and Shaman J. Reply to Bracher: Scoring probabilistic forecasts to maximize public health interpretability. *PNAS*. 2019. [[html](#)] ***Invited response to letter to editor**.
7. George DB, Taylor W, Shaman J, Rivers C, Paul B, O'Toole T, Johansson MA, Hirschman L, Biggerstaff M, Asher J, **Reich NG**. Technology to advance infectious disease forecasting for outbreak management. *Nat Comm*. 2019. 10(3932). [[html](#)]
6. Rivers C, Chretien JP, Riley S, Pavlin J, Woodward A, Brett-Major D, Berry IB, Morton L, Jarman RG, Biggerstaff M, Johansson MA, **Reich NG**, Meyer D, Snyder MR, Pollett S. Using "outbreak science" to strengthen the use of models during epidemics. *Nat Comm*. 2019. 10(3932). [[html](#)]
5. Johansson MA, **Reich NG**, Myers LA, Lipsitch M. Preprints: An underutilized mechanism to accelerate outbreak science. *PLOS Medicine*. 2018, 15(4) : e1002549. [[html](#)]
4. **Reich NG**, Milstone AM. Improving efficiency in cluster-randomized study design and implementation: taking advantage of a crossover. *Open Access Journal of Clinical Trials*. 2014, 6: 11-15. [[pdf](#)]
3. Shardell M, **Reich NG**, Perencevich EN. Commentary: Back to the future with Sir Bradford Hill: statistical analysis with hospital-acquired infections. *International Journal of Epidemiology*. 2013, 42(5): 1509-1510. [[html](#) ; [pdf](#)]
2. Bessesen MT, Savor-Price C, Simberkoff M, **Reich NG**, Pavia AT, Radonovich LJ. 95 Respirators or Surgical Masks to Protect Healthcare Workers Against Respiratory Infections: Are We There Yet? *American Journal of Respiratory and Critical Care Medicine*. 2013, 187(9): 904-905. [[html](#) ; [pdf](#)]
1. **Reich NG**, Lessler J, Chu H, Cole S. Commentary: Identification of the asymptomatic ratio. *Epidemiology*. 2011, 22(3): 333-335. [[html](#)]

BOOK CHAPTERS

1. Lauer SA, Brown AC, **Reich NG**. "Infectious Disease Forecasting for Public Health." *Population biology of vector borne diseases*, edited by John M. Drake, Michael Strand, and Michael Bonsall. Oxford University Press. 2020. [[chapter preprint](#)]

PUBLISHED DATA RESOURCES & WEB APPS

7. **Reich NG** et al. COVID-19 Forecast Hub. March 2020. <https://covid19forecasthub.org/>
6. Cornell M, **Reich NG**. Zoltar: a forecast archive. July 2019. <https://zoltardata.com>
5. Tushar A, **Reich NG**. FluSight. November 2016. <http://dx.doi.org/10.5281/zenodo.192509>.
4. **Reich NG**. Determining Durations for Active Monitoring. July 2016. <http://iddynamics.jhsph.edu/apps/shiny/activemonitr/>.
3. CDCepi, Johansson MA, **Reich NG**, Rivers C, Yu Z, Chen D. zika: Data repository of publicly available Zika data. February 2016. <http://dx.doi.org/10.5281/zenodo.46717>
2. **Reich NG**, Ray EL. Predictions from CDC influenza prediction competition, 2015-2016. March 2016. <http://dx.doi.org/10.5281/zenodo.46840>.
1. Lauer SA, **Reich NG**. The ALERT Algorithm. November 2014. <http://iddynamics.jhsph.edu/apps/shiny/ALERT/>.

GRANTS AND CONTRACTS

Ordered by project end date.

CDC, Center for Forecasting and Outbreak Analytics (\$3.7m Total Costs) Sept 2023 - Aug 2028
Center for Implementation in Outbreak Analytics and Disease Modeling: Multi-Scale Outbreak Decision-Support Tools
co-PI: Reich. This is a cooperative agreement with CDC. Prime institution is UT-Austin where co-PI Lauren Meyers is based. Total project costs: \$27m.

NIH, R35 research grant, R35GM119582 (\$2.15m Total Costs) Sept 2021 - Aug 2026
Methods for real-time forecasting and inference during infectious disease outbreaks
PI: Reich. The R35 mechanism is the NIGMS-sponsored Maximizing Investigators' Research Award.

CDC, Influenza Forecasting Center of Excellence, U01IP001122 (\$3m Est. Total Costs) Sept 2019 - Aug 2024
Influenza Forecasting Center of Excellence at University of Massachusetts Amherst
PI: Reich. This is a cooperative agreement with CDC, advertised to fund 5 years at \$750K per year. First year was awarded for \$600K. Only two centers were funded.

CDC, COVID-19 Forecasting Supplement (\$1.3m Est. Total Costs) May 2020 - Aug 2023
COVID-19 Supplemental Funding
PI: Reich. This is a supplemental contract to the Center of Excellence to support COVID-19 forecasting work.

NIGMS, U24 (effort covered under R35) April 2019 - March 2024
MIDAS Coordinating Center
The Goal of the MIDAS Coordinating Center is to increase the use of MIDAS resources for new research and discovery. Dr. Reich serves as a Co-I on the project, with effort supported by his R35.
PI: Wilbert van Pahuus (UPitt).
Co-Is: Dr. Nicholas Reich (UMass), Dr Elizabeth Halloran (UWash), Dr. Lauren Meyers (UT Austin).

CDC CFA, Modeling Hub Software Development (\$435K Total Costs) Aug 2022 - Aug 2023
Support Translational and Operational Science and Technology Advances to Improve CDC's use of Forecasting, Modeling, and Analytical Approaches to Inform Public Health Policy Development
PI: Reich. Contract to build software to support modeling activities.

CDC, Ensemble forecasting contract (\$480K Est. Total Costs) Feb 2021 - Jan 2022
Urgent COVID-19 need to aggregate forecasts created by dozens of leading infectious disease modeling teams from around the globe of COVID-19 cases at the United States county-level
PI: Reich. Contract to build collaborative, multi-team county-level ensemble forecasts of COVID-19 cases.

NIH, R35 research grant (\$1.9m Total Costs) Sept 2016 - Aug 2021
Statistical methods for real-time forecasts of infectious disease: dynamic time-series and machine learning approaches
PI: Reich. The R35 mechanism is the NIGMS-sponsored Maximizing Investigators' Research Award.

NIH, R35 research supplement (\$315K Total Costs) May 2020 - Aug 2021
Statistical methods for real-time forecasts of infectious disease: expanding dynamic time-series and machine learning approaches for pandemic scenarios
PI: Reich. Supplemental funding for R35 grant to support COVID-19 forecast modeling.
Co-Is: Dr. Andrew Lover (UMass Epidemiology), Dr. Dan Sheldon (UMass CS).

DARPA, Young Faculty Award (\$590K TC) Sept 2016 - Jan 2020
Optimal Infectious Disease Prediction with Multi-Scale Ensemble Models
PI: Reich.

CDC/VA, IPA contract (\$200K TC) Sept 2011 – Aug 2018
The Respiratory Protection Effectiveness Clinical Trial (The ResPECT Study).
 PIs of ResPECT: Trish Perl (Johns Hopkins) and Lew Radonovich (Gainesville VA).
 PI of subcontract to VA: Reich. He serves as the Senior Biostatistician for this cluster-randomized trial.

NIH, R01 research grant (\$2.5m TC) Feb 2013 – Jan 2018
Methods for reducing spatial uncertainty and bias in disease surveillance.
 PI: Justin Lessler (JHSPH). Co-Is: Reich, Derek Cummings (JHSPH), Sopon Iamsirithaworn (Thailand MoPH).
 Lessler, Reich, and Cummings contribute equally to modeling efforts on this grant.
 Reich is PI of subcontract (\$650K TC, 25% of total).

NIH, R21 research grant (\$450K TC) Dec 2014 – Nov 2016
Inference for interacting pathogens with mechanistic and phenomenological models.
 PI: Reich

NSF, PESO (\$590K TC) Sept 2012 – Aug 2015
Materials and Multivariable Models to Predict Tissue Tropism in Metastasis.
 PI: Shelly Peyton, co-PI: Reich. Reich responsible for 100% of the statistical modeling effort (10% of award).

NIH, R21 research grant (\$390K TC) Aug 2012 - May 2014
Premenstrual syndrome and subsequent hypertension.
 PI: Dr. Elizabeth Bertone-Johnson. co-I: Reich.

CLASSROOM INSTRUCTION

Categorical Data Analysis (BIOSTATS 743)
 Fall '17, '18 Graduate-level course (3 credits). [[course website](#)]

Biostat Methods 2: Applied Regression Modeling (BIOSTATS 690NR)
 Spring '14 - '16 Graduate-level course in linear regression (3 credits). Core requirement for Biostatistics graduate students. [[course website](#)]

Telling Stories with Data: Statistics, Modeling, and Visualization (PUBHLTH 490ST)
 Spr '16, '21-23, Undergraduate-level course in linear regression and data visualization (3 credits).
 Fall '16-'18, '23 [[course website](#)]

Introduction to Statistical Computing using R (BIOSTATS 597D)
 Fall 2014 Graduate introductory course in statistical computing (1 credit).

Introduction to Statistical Computing and Data Visualization (BIOSTATS 590F)
 Fall 2012 Sponsored by the Open Education Initiative at UMass, this course was being designed to introduce upper-level undergraduate and graduate students to the world of open-source computing for public health and other scientific research. This course was taught as a hands-on, project-based data analysis workshop.

MENTORSHIP & ADVISING

First placement after training in the lab indicated after names, when known.

Post-doctoral fellows

Tom McAndrew, 2018-2020: tenure-track faculty at Lehigh

Alexandria Brown, 2015-2018: research scientist at UMass
Evan Ray, 2015-2017: tenure-track faculty at Mt Holyoke College
Krzysztof Sakrejda, 2015-2017: post-doctoral research fellow at UMass

PhD thesis advisees

Stephen Lauer, Biostatistics PhD, 2014-2019: post-doctoral research fellow at Johns Hopkins SPH
Graham Casey Gibson, Biostatistics PhD, 2017-2021: post-doc at UT-Austin
Xi Meng, Biostatistics PhD, 2015-2022
Nutch Wattanachit, Biostatistics PhD, 2018-2023

MS thesis advisees

Justin Baldwin, Biostatistics MS, 2016-2017: Fulbright Scholar
Coco Kusiak, Biostatistics MS, 2017-2018: employed by Google Verily
Li Shandross, Biostatistics MS, 2022-2023: employed by Reich Lab

Undergraduate Honors thesis advisees

Kristina Yamkovoy, 2017-2018: Biostatistics PhD student, Boston University
Li Shandross, 2021-2022: Biostatistics MS student, UMass
Quinn White (Smith College), 2022-2023

MS and PhD thesis committees

Jonvia Chamberlain, Epidemiology MS, 2011-2012
Nikki Nixon, Epidemiology MS, 2012-2013
Vicki McLaughlin, Epidemiology PhD, 2012-2014
Eric Cohen, Biostatistics MS, 2013-2014
Charlie Curtsinger, Computer Science PhD, 2014-2016
Mark Hagemann, Civil and Environmental Engineering PhD, 2015-2016
Alex Bogdan, Biostatistics MS, 2016: MassMutual Data Science
David Arbour, Computer Science PhD, 2015-2017: Facebook
Sangsoo Park, Kinesiology PhD, 2015-2019
Sra Sontisirikit, Computer Science, Asian Institute of Technology, 2015-2018 (role: expert advisor)
Angus Kin On Wong, Biostatistics MS, 2020

Graduate research assistants and programmers (not PhD advisees)

Guoshu Yuan (2012-2013), Emily Ramos (fall 2014), Sangsoo Park (summer 2014), Krzysztof Sakrejda (2014-2015), Abhinav Tushar (2016-2018), Katie House (2018-2020), Yukun Li (2019), Abdul Hannan Kanji (2020), Estee Cramer (2020), Ariane Stark (2020).

statsTeachR.org curriculum developers (2013-2014)

Eric Cohen, Harrel Blatt, Eric Reed, Sara Nuñez, Emily Ramos.

Undergraduate research assistants

Eric Doty (Spring 2012), Courtney Yannace (Fall 2014), Harley Jean (Summer 2016 - Spring 2017), Evan Moore (Spring 2018), Justin Stott (Spring 2019), Ayush Khandelwal (Summer 2020), Dasuni Jayawardena (Summer 2020-Spring 2021).

Undergraduate Interns

Summer 2017	Lily Rithichoo (Mt Holyoke)
Winter 2017	Jordan Aron, Dean Gladish, Will Thomspson (Carleton College)
Summer 2018	Rebecca Silva (Amherst College), Willow Crawford-Crudell (Smith College), Dean Gladish (Carleton College)
Summer 2021	Richa Jain, Trust Okorie, Li Shandross (all from UMass Amherst)

WORKSHOPS & DATAFESTS

- Five College DataFest (Amherst, MA)
2014-19 UMass team coordinator: responsible for recruiting teams of undergraduate students to compete in weekend-long data competition. [[datafest website](#)]
- HackHer413 (Amherst, MA)
February 2019 Data Science Judge for all women and non-binary student hackathon. [[website](#)]
- HackEbola (UMass-Amherst)
November 2014 Co-organized three-day [HackEbola hackathon/datafest](#) at UMass with Graduate Researchers interested in Data student group.
- Data Sciences for the Life Sciences in a High Performance Computing Environment (Holyoke, MA)
February 2014 Directed and taught a one-day hands-on high-performance statistical computing workshop for researchers. Workshop held at the [MGHPCC](#).
- Data Analysis and Visualization using R, Social and Demographic Research Institute (UMass)
July 2012 Designed and taught a two-day hands-on data analysis workshop for researchers.
- Outbreak investigation workshops, Thai Ministry of Public Health (Bangkok, Thailand)
March 2009 and March 2012 Designed and taught a three-day workshop on statistical modeling of outbreaks for field epidemiologists with Justin Lessler from the Johns Hopkins Epidemiology Dept. The workshop was sponsored by the NIH Fogarty International Center.

SOFTWARE & COMPUTING

- General software development from Reich Lab: see [lab webpage](#).
- COVID-19 software packages and tools: [covidHubUtils](#), [covidData](#), [covidEnsembles](#)
- R package development: [coarseDataTools](#) and [clusterPower](#), R packages (available on CRAN)
- Open source teaching curricula: Co-founder of [statsTeachR.org](#)

SELECTED PRESS & MEDIA COVERAGE

- Links to press coverage of the COVID-19 Forecast Hub are available [here](#).
- Links to press coverage of the COVID-19 Expert Surveys project are available [here](#).
- "Herd Immunity Is Humanity's Great Hope, and It's Proving Elusive". *Business Week*. 22 April 2021.
- "We're skating on a knife's edge right now': Scientists worry US could be headed for yet another COVID-19 surge". *USA Today*. 30 March 2021.
- "Balance of Power: Concerns Over New Covid-19 Wave". *Bloomberg: Balance of Power* (live radio program/podcast). 24 March 2021.
- "What will cold-and-flu season mean for the coronavirus pandemic?". *The New Yorker*. 1 October 2020.
- "COVID-19 pandemic is not 'fading' in the United States". *Associated Press*. 6 August 2020.
- "The Health 202: Why individual models of coronavirus deaths are often wrong". *Washington Post*. 5 August 2020.
- "How Disease Modeling Can Help Inform Public Health Decision Making, with Dr. Nick Reich". *The IQT Podcast*. 4 August 2020.
- "Off The Record with Paul Hodes". New Hampshire Talk Radio. 17 July 2020.
- "UMass model projects 833 more COVID-19 deaths in state by 4th of July. *WCVB, Channel 5, ABC*. 9 June 2020.
- "Early projections of covid-19 in America underestimated its severity". *The Economist*. 23 May 2020.
- "What computer-based models can tell us about coronavirus-and what they can't". *PBS NewsHour*. 20 May 2020.
- "In It Together: live broadcast". *WGBH*. 20 May 2020.

“How To Make Sense of All The COVID-19 Projections? A New Model Combines Them”. *NPR Morning Edition*. 13 May 2020.

“UMass professor develops ensemble forecast for coronavirus pandemic; projects 103,000 deaths nationwide by end of May”. *Boston Globe*. 7 May 2020.

“US milestone of 100,000 coronavirus deaths likely by June”. *Agence France Press*. 5 May 2020.

“Where The Latest COVID-19 Models Think We’re Headed ? And Why They Disagree”. *FiveThirtyEight*. 1 May 2020.

“In It Together: live broadcast”. *WGBH*. 27 April 2020.

“Surveys of infectious disease experts aim to predict COVID-19’s toll”. *Science News*. 23 April 2020.

“What 5 Coronavirus Models Say the Next Month Will Look Like”. *NY Times*. 22 April 2020.

“‘Did I already have coronavirus?’: People wonder if they previously had COVID-19, but the answer isn’t easy”. *Mashable*. 8 April 2020.

“‘Flu-like’ data might help track coronavirus spread. Why did Florida stop publishing it?”. *Miami Herald*. 7 April 2020.

“The hard choices covid policymakers face”. *The Economist*. 4 April 2020.

“Here’s How More Than 20 Infectious-Disease Experts See Coronavirus Playing Out in the U.S.” *Rolling Stone*. 19 March 2020.

“Real Number of U.S. Coronavirus Cases Could Be as High as 150,000, New Estimates Suggest”. *Gizmodo*. 19 March 2020.

“UMass professor to receive \$3M from CDC to help predict flu outbreaks” *WWLP Channel 22*. 9 Oct 2019.

“Flu tracker: UMass biostatistician lands \$3M to forecast flu” *Daily Hampshire Gazette*. 9 Oct 2019.

“UMass Researcher Gets CDC Money To Forecast The Flu Better” *New England Public Radio*. 8 Oct 2019.

“Real-time flu tracking” *Nature Outlook*. 18 Sep 2019.

“Under The Weather? New Flu ‘Forecast’ Aims To Predict Activity” *NEPR*. 28 Jan 2019.

“Flu season escalating earlier than normal” *WCVB (TV interview)*. 10 Jan 2018.

“UMass researcher helps predict the timing and the peak of the flu” *Boston Globe*. 2 Jan 2018.

“Letter to editor: critical of measles headline for down-playing risks” *Daily Hampshire Gazette*. 11 Feb 2015.

“Flu Season Made Easy With New Tool.” *New England Public Radio*. 24 Nov 2014.

“HackEbola at UMass aids fight against West African epidemic ” *Daily Hampshire Gazette*. 22 Nov 2014.

“Understanding the Protective Side of Dengue Virus.” *New York Times*. 9 July 2013.

INVITED TALKS

1. “Supporting modeling hubs across the globe.” European CDC RespiCast Hub Launch event. (virtual meeting) 20 November 2023.
2. **Plenary session panelist:** “Infectious Disease Forecasting: Looking Back to Look Forward.” CSTE/CDC Infectious Disease Forecasting Workshop. Atlanta, GA. 18 September 2023.
3. “Probabilistic epidemic forecasts in the context of public health decision-making.” Boston University Biostatistics Seminar. 15 June 2023.
4. “How predictable is COVID-19? Insights from the COVID-19 Forecast Hub.” Westfield State University, Biology Department Seminar. 14 April 2023.
5. “Developing open-source tools for collaborative modeling hubs.” Royal Society Infectious Disease Forecasting Satellite meeting. Maidenhead, UK. 15 March 2023.
6. **Plenary session panelist:** “Infectious Disease Forecasting – Looking Back to Look Forward.” CSTE/CDC Infectious Disease Forecasting Workshop. Atlanta, GA. 25 October 2022.
7. **Plenary session panelist:** “Sustaining and Expanding Forecasting, Projection modeling, and Hubs.” Scenario Modeling Hub 2022 Meeting. (virtual meeting) 16 September 2022.

8. "Assessing the utility of COVID-19 case data to improve short-term forecasts of hospitalizations." NIH MIDAS Network Annual Meeting. Bethesda, MD. 8 September 2022.
9. **Plenary session panelist:** "Coordinated outbreak modeling across academia, government and industry." NIH MIDAS Network Annual Meeting. Bethesda, MD. 7 September 2022.
10. "How predictable is COVID-19? Insights from the COVID-19 Forecast Hub." UMass Medical School Center for Clinical and Translational Science Research Symposium. (virtual meeting) 10 June 2022.
11. "Using ensemble forecasts to support public health decision-making." NSF PREPARE Panel Discussion. (virtual meeting) 30 March 2022. [[video](#)]
12. "How to Forecast a Pandemic: Lessons from COVID-19." [UMass-Amherst Distinguished Faculty Lecture Series](#). (virtual) 5 October 2021. [[video](#)]
13. "The past, present, and future of infectious disease forecasting." National Academies of Science, Engineering and Medicine. Committee on Applied and Theoretical Statistics symposium entitled "[Data Collection and Integration to Enhance Public Health: Making Sense of a Patchwork of Data](#)". (virtual meeting) 10 June 2021.
14. **Keynote Address:** "The computational science of infectious disease forecasting." 41st International Symposium on Forecasting. Virtual and Local Hubs. (virtual meeting) June 2021.
15. **Keynote Address:** "Building the COVID-19 Forecast Hub, a collaborative network to improve infectious disease forecasting." 2nd International Workshop on Forecasting for Social Good. (virtual meeting) June 2021. [[website](#)]
16. "Modeling global outbreaks: Challenges and opportunities." ASPPH Annual Meeting. (virtual meeting) 24 March 2021.
17. "The US COVID-19 Forecast Hub: operations, research, and a few anecdotes." Presentation to the European CDC Forecasting Group (virtual). 23 February 2021
18. "The COVID-19 Forecast Hub: using statistics and data science to support decision-making in a pandemic." Harvard Center for Health Decision Science Seminar. 8 December 2020.
19. "Smart models: COVID-19 ensemble models." [session: Black Swan ? Outsmarting the Virus.] Virtual Interservice/Industry Training, Simulation and Education Conference (vI/ITSEC). 1 December 2020
20. **Keynote Session Invited Speaker:** "How Predictable is COVID-19? Insights from the COVID-19 Forecast Hub." 6th Seattle Symposium in Biostatistics: Precision Health in the Age of Data Science. 24 Nov 2020. [[website](#)]
21. **Keynote Address:** "Methods and motives for infectious disease models – the tale of COVID-19." ASTMH Committee on Global Health Pre-Meeting Course: Modeling for Disease Outbreaks, Practical Approaches to Understanding and Using Models. 11 Nov 2020.
22. **Plenary session panelist:** COVID-19 panel. INFORMS Virtual Annual Meeting. 9 Nov 2020.
23. **Keynote Address:** "A Critical Evaluation of COVID-19 Pandemic Forecasts." 1st ACM SIGSPATIAL International Workshop on Modeling and Understanding the Spread of COVID-19. In conjunction with the ACM SIGSPATIAL 2020 conference. 3 Nov 2020.
24. **Invited Panelist and Session Chair:** COVID-19 Forecasting. International Symposium on Forecasting: Virtual ISF 2020. 26 Oct 2020.
25. "Data Science Zoominar: COVID-19 Prediction Models." Harvard University Dana Farber Cancer Institute, Department of Data Science. 21 July 2020. [[YouTube](#)]

26. "The COVID-19 Forecast Hub: using statistics and data science to support decision-making in a pandemic." American Statistical Association and Journal of Data Science Webinar Series: Data Science in Action in Response to the Outbreak of COVID-19. UConn. 17 July 2020. [[video](#)]
27. "The Computational Science of Real-time Influenza Forecasting." Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Erlangen, Germany. 26 November 2019.
28. "Statistical considerations for probabilistic ensemble forecasts of infectious disease outbreaks." Seminar for the Center of Mathematics in Sciences, Engineering, and Economics, Karlsruher Institut für Technologie (KIT), Karlsruhe, Germany. 22 October 2019.
29. "The Computational Science of Real-time Influenza Forecasting." Heidelberg Institute for Theoretical Studies (HITS) Colloquium, Heidelberg, Germany. 21 October 2019. [[YouTube](#)]
30. "Influenza Forecasting for Public Health." Massachusetts Department of Public Health Seminar, Boston, MA. 20 May 2019.
31. "Collaborative Influenza Forecasting in the US." 7th Annual Conference to Increase Diversity in Mathematical Modeling and Public Health, Harvard University, Boston, MA. 30 November 2018.
32. "Forecasting infectious disease epidemics via weighted density ensembles." ZüKoSt: Seminar on Applied Statistics, ETH Zürich, Switzerland. 17 May 2018.
33. "Forecasting infectious disease epidemics via weighted density ensembles." LMU Statistics Colloquium, Munich, Germany. 14 May 2018.
34. "Building a Collaborative Ensemble to Forecast Influenza in the US." MIDAS Network Meetings, Bethesda, MD. 3 April 2018.
35. "Forecasting Infectious Disease Transmission." Symposium on the Population Biology of Vector-borne Diseases, Center for the Ecology of Infectious Diseases, University of Georgia, Athens, GA. 24 February 2018.
36. "Algorithm Soup: Improving Influenza Forecasting in the US using Ensemble Learning." COBRE Center for Computational Biology of Human Disease Seminar Series, Brown University, Providence, RI. 24 January 2018.
37. "Collaborative Influenza Forecasting in the U.S." WHO Influenza Incidence Analytics Group. Virtual presentation. 20 December 2017.
38. "Comparison of ensemble methods for forecasting influenza in the United States." Epidemics6 Conference, Barcelona, Spain. 28 November 2017.
39. "Forecasting Infectious Disease Outbreaks." UMass Molecular and Cellular Biology Seminar Series, Amherst, MA. 31 October 2017.
40. "Forecasting Infectious Disease Outbreaks via Weighted Density Ensembles." Yale Public Health Modeling Concentration Seminar Series, New Haven, CT. 2 October 2017.
41. "Building a Collaborative Ensemble to Forecast Influenza in the US." CDC, Atlanta, GA. 29 August 2017.
42. "Prediction of Infectious Disease Epidemics via Weighted Density Ensembles." MIDAS Network Meetings, Atlanta, GA. May 2017.
43. "Analytical approaches for illuminating Zika and Dengue transmission dynamics." CDC Dengue Branch, San Juan, Puerto Rico. 24 February 2017.
44. "Real-time Prediction of Infectious Disease Outbreaks." Johns Hopkins Biostatistics Seminar Series, Baltimore, MD. 3 October 2016.

45. "New Approaches for Predicting Outbreaks." Pandemic Prediction and Forecasting Working Group, White House Office of Science and Technology Policy, Washington DC. 9 February 2016.
46. "Estimating Population Susceptibility in Dynamic Models of Infectious Disease." Boston University Biostatistics Seminar Series, Boston, MA. 14 May 2015.
47. "Estimating Population Susceptibility in Dynamic Models of Infectious Disease." New England Statistics Symposium. University of Connecticut, Storrs, CT. 25 April 2015.
48. **Keynote Address:** "Predicting Dengue Fever Outbreaks in Thailand." Massachusetts Undergraduate Research Conference. Amherst, MA. 24 April 2015.
49. "Estimating Population Susceptibility in Dynamic Models of Infectious Disease." Computational Social Science Institute Seminar Series, UMass-Amherst. Amherst, MA. 17 April 2015.
50. "Statistical Challenges in Real-Time Infectious Disease Forecasting." Quantitative Methods Core Methods Seminar, UMass-Worcester Medical School. Worcester, MA. 7 April 2015.
51. "statsTeachR: Open Resources for Teaching Statistics." New England Statistics Symposium. Boston, MA. 26 April 2014.
52. "Open Resources for Teaching Statistics." Department of Mathematics and Statistics, University of Massachusetts. Amherst, MA. 7 April 2014.
53. "Estimating case fatality ratios from infectious disease surveillance data." American Public Health Association Annual Conference. Boston, MA. 4 November 2013.
54. "Estimating case fatality ratios from infectious disease surveillance data." Joint Conference by the International Chinese Statistical Association and the International Society for Biopharmaceutical Statistics (ICSA-ISBS), Washington DC. 10 June 2013.
55. "Social coding with RStudio and GitHub." Pioneer Valley and Five College R Statistical Meetup. 13 February 2013.
56. "Drawing inference about interactions between pathogens in infectious disease systems." Department of Mathematics and Statistics, University of Massachusetts. 26 March 2012.
57. "Making inferences about infection using the incubation period." Center for Quality of Care Research, Baystate Medical Center. Springfield, MA. 16 November 2011.
58. "Making inferences about infection using the incubation period." Department of Epidemiology and Public Health Seminar Series, University of Maryland. 21 April 2011.

GRANT REVIEW ACTIVITIES

NIH Study Section and Council service

- 2021-2022 IRAP Study Section member
- 2020 COVID-19 Pandemic: Epidemiology and Analytics study section, ad hoc member
- 2017 NIGMS Advisory Council, ad hoc member
- 2016 IRAP ad hoc member
- 2015 NEI Clinical and Epidemiological Applications: Uveitis, Cornea and Refractive Error, ad hoc

Medical Research Council UK Peer Reviewer

- 2016 Review of a single application.

MEMBERSHIPS

2019- International Institute of Forecasters
2017- New England Statistical Society
2014- Foundation for Open Access Statistics
2011- UMass Center for Clinical and Translational Science
2008- American Statistical Association
2008- International Biometric Society (ENAR)

EDITORIAL ACTIVITIES

Founding Editor, *PLOS Disease Forecasting and Surveillance Channel*, 2017-2020

Statistical Advisory Board Member, *PLOS Medicine*, 2016-2017

Review Board Member, *PLOS Currents: Outbreaks*, 2015-2018

Editorial Board Member, *PLOS ONE*, 2013-2017

Guest Editor, *PLOS Neglected Tropical Diseases*, 2016.

Reviewer

Science

JAMA

Biostatistics

Statistics in Medicine

American Statistician

American Journal of Epidemiology

International Journal of Forecasting

Nature Communications

PLOS Medicine

PLOS Computational Biology

The Lancet Infectious Diseases

Epidemiology

British Medical Journal

PLoS Currents: Outbreaks

Epidemics

American Journal of Tropical Medicine and Hygiene

Clinical Trials

PeerJ

Emerging Infectious Diseases

Proceedings of the Royal Society B: Biological Sciences

BMC Public Health

PLOS ONE

Scientific Reports

Demography

Medical Decision Making

Influenza and Other Respiratory Viruses

Environmental Health

International Journal of Health Geographics

SERVICE

Faculty Searches

- 2013-2014 Member, Assistant Lecturer Search Committee
- 2014-2015 Member, Open-rank Tenure Track Search Committee
- 2014-2015 Chair, Assistant/Associate Tenure Track Search Committee
- 2016-2017 Member, Assistant Professor Tenure Track Search Committee
- 2017-2018 Member, Institute for Applied Life Sciences, Assistant Professor for Large Data Analytics
- 2017-2018 Member, Biostatistics and Epidemiology Department Chair Search Committee
- 2018-2019 Member, Assistant Professor Tenure Track Search Committee, Biostatistics

Department of Biostatistics and Epidemiology, UMass School of Public Health and Health Sciences

- 2011-2012 Co-organizer for Department's seminar series
- 2012-2013 Co-organizer for Department's seminar series
Chair, Biostatistics Curriculum Committee
- 2013-2014 Member, Biostatistics Curriculum Committee
Chair, Biostatistics Admissions and Student Outreach Committee
Representative, Five College Statistics Program
- 2014-2015 Member, Biostatistics Curriculum Committee
Member, Biostatistics Admissions and Student Outreach Committee
Representative, Five College Statistics Program
- 2015-2016 Chair, Biostatistics Curriculum Committee
Member, Biostatistics Admissions and Student Outreach Committee
Chair, Biostatistics Accelerated MS program
Representative, Five College Statistics Program
- 2016-2017 Member, Biostatistics Curriculum Committee
Chair, Biostatistics Admissions and Student Outreach Committee
Chair, Biostatistics Accelerated MS program
Representative, Five College Statistics Program
- 2017-2018 Member, Biostatistics Curriculum Committee
Member, Biostatistics Admissions and Student Outreach Committee
Chair, Biostatistics Accelerated MS program
Representative, Five College Statistics Program
- 2018-2019 Chair, Biostatistics Admissions and Student Outreach Committee
Chair, Biostatistics Accelerated MS program
Member, Biostatistics Graduate Program Coordination Committee
Representative, Five College Statistics Program
- 2019-2020 on sabbatical
- 2020-2021 Chair, Biostatistics Admissions Committee
Chair, Biostatistics Outreach Committee
Representative, Five College Statistics Program
- 2021-2022 Chair, Biostatistics Admissions Committee
Chair, Biostatistics Outreach Committee
Member, Graduate Affairs Committee
- 2022-2023 Chair, Tenure-track search committee
Chair, Biostatistics Outreach Committee
Member, Graduate Affairs Committee
- 2023-2024 Chair, Tenure-track search committee
Chair, Biostatistics Outreach Committee

UMass School of Public Health and Health Sciences and campus-wide service

- 2014-2015 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group
- 2015-2016 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group
Member, UMass IT Strategic Planning Research Committee
Member, ad hoc Computing committee
- 2015-2016 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group
Member, ad hoc Computing committee
- 2017-2018 Faculty Advisor, Graduate Researchers interested in Data (GRiD) student group
Member, School Personnel Committee
- 2018-2019 Member, School Personnel Committee
- 2019-2020 on sabbatical
- 2023-2024 Member, School Personnel Committee

Other Professional Service

- 2013-2014 Co-organizer, Western Mass Data Science, Stats, and R Meetup
Chair, Biostatistics Admissions and Student Outreach Committee
UMass Biostatistics representative, Five College Statistics Program
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2014-2015 Organizer, Western Mass Data Science, Stats, and R Meetup
Member, Biostatistics Admissions and Student Outreach Committee
UMass Biostatistics representative, Five College Statistics Program
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2015-2016 Organizer, Western Mass Data Science, Stats, and R Meetup
Member, Biostatistics Admissions and Student Outreach Committee
Chair, Biostatistics Accelerated MS program
UMass Biostatistics representative, Five College Statistics Program
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2016-2017 Organizer, Western Mass Data Science, Stats, and R Meetup
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
- 2017-2018 Organizer, Western Mass Data Science, Stats, and R Meetup
Secretary and Treasurer, Five College Statistics Program
Vice President for Scientific Program, New England Statistical Society
Organizing Committee, 2018 New England Statistical Symposium
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
Steering Committee Member, NIH MIDAS Network
- 2018-2019 Organizer, Western Mass Data Science, Stats, and R Meetup
Chair, Five College Statistics Program
Predoctoral mentor, [The Math Alliance for Doctoral Studies](#)
Steering Committee Member, NIH MIDAS Network
- 2019-2020 Member, Program Committee, useR!2020 Satellite Conference (Munich, July 2020)
co-Chair, US CDC Coronavirus Forecasting Working Group
- 2020-2021 co-Chair, US CDC Coronavirus Forecasting Working Group
- 2022-2023 co-Organizer, Royal Society Discussion meeting (London, Mar 2023): “Forecasting natural and social systems” and satellite meeting “Epidemiological forecasting of infectious disease for public health”