

Natalie Exner Dean

Curriculum Vitae

CONTACT INFORMATION

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EDUCATION

Ph.D. Biostatistics, Harvard University	2014
<i>“Surveillance methods for monitoring HIV incidence & drug resistance”</i>	
A.M. Biostatistics, Harvard University	2011
B.A. Mathematics/Statistics, Biology, Boston University, <i>summa cum laude</i>	2009

PROFESSIONAL EXPERIENCE

Assistant Professor, Dept of Biostatistics & Bioinformatics, Emory University	2021–Present
Assistant Professor, Dept of Epidemiology (secondary), Emory University	2021–Present
Courtesy Faculty, Dept of Biostatistics, University of Florida	2021–Present
Assistant Professor, Dept of Biostatistics, University of Florida	2017–2021
Postdoctoral Associate, Dept of Biostatistics, University of Florida	2015–2017
External Statistical Consultant, HIV Dept, World Health Organization	2014–2015

RESEARCH INTERESTS

Infectious disease epidemiology, Emerging pathogens, Public health surveillance, Vaccine evaluation, Clinical trial design, Test negative designs

PUBLICATIONS

Refereed Journal Articles

1. Galler JR, Bryce CP, Waber D, Hock RS, **Exner N**, Eaglesfield D, Fitzmaurice G, Harrison R (2010). Early childhood malnutrition predicts depressive symptoms at ages 11-17. *Journal of Child Psychology and Psychiatry* 51(7): 789-798.

2. Galler JR, Bryce CP, Zichlin ML, Waber DP, **Exner N**, Fitzmaurice GM, Costa PT (2013). Malnutrition in the first year of life and personality at age 40. *Journal of Child Psychology and Psychiatry* 54(8): 911-919.
3. Russo GS, Ferrucci AM, Miller CP, Dean EW, Strohbehn GW, **Dean NE**, Sharkey MS (2015). Factors associated with the transfer of pediatric patients with supracondylar humerus fractures to a level I pediatric trauma center. *Connecticut Medicine* 79(8): 461-466.
4. Ebola ça suffit ring vaccination trial consortium (coauthor **Dean NE**) (2015). The ring vaccination trial: a novel cluster randomised controlled trial design to evaluate vaccine efficacy and effectiveness during outbreaks, with special reference to Ebola. *British Medical Journal* 351: h3740.
5. Henao-Restrepo A-M, Longini IM, Egger M, **Dean NE**, Edmunds WJ, Camacho A, Carroll MW, Doumbia M, Duraffour S, Enwere G, Grais R, Gunther S, Hossmann S, Kondé MK, Kone S, Kuisma E, Levine M, Mandal S, Norheim G, Riveros X, Soumah A, Trelle S, Vicari AS, Watson CH, Draguez B, Kéïta S, Røttingen J-A, Kieny M-P (2015). Efficacy and effectiveness of an rVSV-vectored vaccine expressing Ebola surface glycoprotein: interim results from the Guinea ring vaccination cluster-randomised trial. *The Lancet* 386(9996): 857-866. *International Society for Vaccines 2015 Paper of the Year*.
6. **Dean NE**, Pagano M (2015). Evaluating Confidence Interval Methods for Binomial Proportions in Clustered Surveys. *Journal of Survey Statistics and Methodology* 3(4): 484-503.
7. Fang LQ, Yang Y, Jiang JF, Yao H, Kargbo D, Li X, Jiang BG, Kargbo B, Tong YG, Wang YW, Liu K, Kamara A, Dafaie F, Kanu A, Jiang RR, Sun Y, Sun RX, Chen WJ, Ma M, **Dean NE**, Thomas H, Longini IM, Halloran ME, Cao WC (2016). Transmission Dynamics of Ebola Virus Disease and Intervention Effectiveness in Sierra Leone. *Proceedings of the National Academy of Sciences* 113(16): 4488-4493.
8. **Dean NE**, Halloran ME, Yang Y, Longini IM (2016). Transmissibility and Pathogenicity of Ebola Virus: A Systematic Review and Meta-analysis of Household Secondary Attack Rate and Asymptomatic Infection. *Clinical Infectious Diseases* 62(10): 1277-1286.
9. Rojas DP, **Dean NE***, Yang Y*, Kenah E, Quintero J, Tomasi S, Ramirez EL, Kelly Y, Castro C, Carrasquilla G, Halloran ME, Longini IM (2016). The epidemiology and transmissibility of Zika virus in Girardot and San Andres Island, Colombia, September 2015 to January 2016. *Eurosurveillance* 21(28): pii=30283.
10. Ajelli M, Merler S, Fumanelli L, Pastore Y Piontti A, **Dean NE**, Longini IM, Halloran ME, Vespignani A (2016). Spatiotemporal dynamics of the Ebola epidemic in Guinea and implications for vaccination and disease elimination: a computational modeling analysis. *BMC Medicine* 14: 130.
11. Merler S, Ajelli M, Fumanelli L, Parlamento S, Pastore Y Piontti, **Dean NE**, Putoto G, Carraro D, Longini IM, Halloran ME, Vespignani A (2016). Containing Ebola at the source with

- ring vaccination. *PLoS Neglected Tropical Diseases* 10(11): e0005093.
12. Mutenda N, Bukowski A, Nitschke AM, Nakanyala T, Hamunime N, Mekonen T, Tjituka F, Mwinga S, Mazibuko G, Mbirizi D, Sagwa E, **Dean N**, Jordan MR, Hong SY (2016). HIV Drug Resistance Early Warning Indicators in Main and Decentralized Outreach Antiretroviral Therapy Sites in Namibia. *PLoS ONE* 11(12): e0166649.
 13. Henao-Restrepo AM, Camacho A, Longini IM, Watson CH, Edmunds WJ, Egger M, Carroll MW, **Dean NE**, Doumbia M, Draguez B, Duraffour S, Enwere G, Grais R, Gunther S, Gsell PS, Hossmann S, Kondé MK, Kéïta S, Kone S, Kuisma E, Levine M, Mandal S, Mauget T, Norheim G, Rivreros X, Soumah A, Trelle S, Vicari AS, Røttingen J-A, Kieny MP (2017). Efficacy and effectiveness of an rVSV-vectored vaccine in preventing Ebola virus disease: final results from the Guinea ring vaccination, open-label, cluster-randomised trial (Ebola Ça Suffit!). *The Lancet* 389(10068): 505-518.
 14. Zhang Q, Sun K, Chinazzi M, Pastore-Piontti A, **Dean NE**, Rojas DP, Merler S, Mistry D, Poletti P, Rossi L, Bray M, Halloran ME, Longini IM, Vespignani A (2017). Spread of Zika virus in the Americas. *Proceedings of the National Academy of Sciences* 114(22): E4334-E4343.
 15. Wilder-Smith A, Longini I, Zuber P, Bärnighausen T, Edmunds WJ, **Dean NE**, Masseray-Spicher V, Benissa MR, Gessner BG (2017). The public health value of vaccines beyond efficacy: methods, measures and outcomes. *BMC Medicine* 15: 138.
 16. Gsell P, Camacho A, Kucharski A, Watson CH, Bagayoko A, Danmadji S, **Dean NE**, Diallo A, Djidonou H, Doumbia M, Fallah M, Enwere G, Higgs ES, Mauget T, Mory D, Riveros X, Thierno Oumar F, Toure A, Vicari AS, Longini IM, Edmunds WJ, Henao-Restrepo AM, Kéïta S (2017). Ring vaccination of adults and children with rVSV-ZEBOV in response to an outbreak of Ebola virus disease in Guinea, 2016: an operational and vaccine safety report. *Lancet Infectious Diseases* 17(12): 1276-1284.
 17. **Dean NE**, Halloran ME, Longini IM (2018). Design of Vaccine Trials during Outbreaks with and without a Delayed Vaccination Comparator. *Annals of Applied Statistics* 12(1): 330-347.
 18. Ma MJ, Zhao T, Chen SH, Xia X, Yang XX, Wang GL, Fang LQ, Ma GY, Wu MN, Qian YH, **Dean NE**, Yang Y, Lu B, Cao WC (2018). Avian Influenza A Virus Infection among Workers at Live Poultry Markets, China, 2013-2016. *Emerging Infectious Diseases* 24(7): 1246-1256.
 19. Sun K, Zhang Q, Pastore-Piontti A, Chinazzi M, Mistry D, **Dean NE**, Rojas DP, Merler S, Poletti P, Rossi L, Halloran ME, Longini IM, Vespignani A (2018). Quantifying the risk of local Zika virus transmission in the contiguous US during the 2015–2016 ZIKV epidemic. *BMC Medicine* 16: 195.
 20. Hunt GM, Ledwaba J, Kalimashe M, Salimo A, Cibane S, Singh B, Puren A, **Dean NE**, Morris L, Jordan MR (2019). Provincial and national prevalence estimates of HIV-1 drug resistance in South Africa measured using two WHO-recommended methods. *Antiviral Therapy*

- 24, 203-210.
21. Ding AA, Wu SS, **Dean NE**, Zahigian RS (2019). Two-stage Adaptive Enrichment Design for Testing an Active Factor. *Journal of Biopharmaceutical Statistics*
doi: 10.1080/10543406.2019.1609015.
 22. **Dean NE**, Gsell PS, Brookmeyer R, De Gruttola V, Donnelly CA, Halloran ME, Jasseh M, Nason M, Riveros X, Watson C, Henao-Restrepo AM, Longini IM (2019). Considerations for the design of vaccine efficacy trials during public health emergencies. *Science Translational Medicine* 11(499): eaat0360.
 23. Bellan SE, Eggo RM, Gsell PS, Kucharski A, **Dean NE**, Donohue R, Zook M, Odhiambo F, Longini I, Brisson M, Mahon B, Edmunds WJ, Henao-Restrepo AM (2019). An online decision tree for vaccine trial design during infectious disease epidemics: The InterVax-Tool. *Vaccine* 37(31): 4376-4381.
 24. **Dean NE**, Gsell PS, Brookmeyer R, Crawford F, Donnelly C, Ellenberg S, Fleming T, Halloran ME, Horby P, Jaki T, Krause P, Longini I, Mulangu S, Muyembe-Tamfum JJ, Nason M, Smith PG, Wang R, Henao-Restrepo AM, De Gruttola V (2020). Creating a framework for conducting randomized clinical trials during disease outbreaks. *New England Journal of Medicine* 382: 1366-1369.
 25. **Dean NE**, Halloran ME, Longini IM (2020). Temporal Confounding in the Test Negative Design. *American Journal of Epidemiology* 189 (11): 1402-1407.
 26. Jing QL, Liu MJ, Yuan J, Zhang ZB, Zhang AR, **Dean NE**, Luo L, Ma MM, Longini IM, Kenah E, Lu Y, Ma Y, Jalali N, Fang LQ, Yang ZC, Yang Y (2020). Household secondary attack rate of COVID-19 and associated determinants in Guangzhou, China: a retrospective cohort study. *Lancet Infectious Diseases* 20 (10): 1141-1150.
 27. Kimmel SE, Califf RM, **Dean NE**, Goodman SN, Ogburn EL (2020). COVID-19 clinical trials: a teachable moment for improving our research infrastructure and relevance. *Annals of Internal Medicine* 173 (8): 652-653.
 28. Cardel M, **Dean N**, Montoya-Williams D (2020). Preventing a secondary epidemic of lost early career scientists: effects of COVID-19 pandemic on women with children. *Annals of the American Thoracic Society* 17 (11): 1366-1370.
 29. Aleta A, Martin-Corral D, Pastore y Piontti A, Ajelli M, Litvinova M, Chinazzi M, **Dean NE**, Halloran ME, Longini I, Merler S, Pentland A, Vespignani A, Moro E, Moreno Y (2020). Modeling the impact of testing, contact tracing and household quarantine on second waves of COVID-19. *Nature Human Behaviour* 4: 964-971.
 30. Jordan MR, Hamunime N, Bikinesi L, Sawadogo S, Agolory S, Shiningavamwe AN, Negussie T, Fischer Walker CL, Raizes EG, Mutenda M, Hunter CJ, **Dean NE**, Steegen K, Kana V, Carmona S, Yang C, Tang AM, Parkin N, Hong SY (2020). High levels of HIV drug resistance among adults failing second-line antiretroviral therapy in Namibia. *Medicine* 99

(37): e21661.

31. **Dean NE**, Pastore y Piontti A, Madewell ZJ, Cummings DAT, Hitchings MDT, Joshi K, Kahn R, Vespignani A, Halloran ME, Longini IM (2020). Ensemble forecast modeling for the design of COVID-19 vaccine efficacy trials. *Vaccine* 38 (46): 7213-7216.
32. Krause P, Fleming TR, Longini I, Henao-Restrepo A, Peto R, for the World Health Organization Solidarity Vaccines Trial Expert Group (**Dean NE**, Halloran ME, Huang Y, Gilbert PB, De Gruttola V, Gsell P, Janes HE, Nason MC, Riveros X, Smith P) (2020). COVID-19 vaccine trials should seek worthwhile efficacy. *The Lancet* 396 (10253): 741-743.
33. Manrique-Saide P, **Dean NE**, Halloran ME, Longini IM, Collins MH, Waller LA, Gomez-Dantes H, Lenhart A, Hladish TJ, Che-Mendoza A, Kirstein OD, Romer Y, Correa-Morales F, Palacio-Vargas J, Mendez-Vales R, Pérez PG, Pavia-Ruz N, Ayora-Talavera G, Vazquez-Prokopec GM (2020). The TIRS trial: protocol for a cluster randomized controlled trial assessing the efficacy of preventive targeted indoor residual spraying to reduce *Aedes*-borne viral illnesses in Merida, Mexico. *Trials* 21: 839.
34. Lipsitch M, **Dean NE** (2020). Understanding COVID-19 vaccine efficacy (2020). *Science* 370 (6518): 763-765.
35. Madewell ZJ, Yang Y, Longini IM, Halloran ME, **Dean NE** (2020). Household transmission of SARS-CoV-2: a systematic review and meta-analysis of secondary attack rate. *JAMA Network Open* 3(12) e2031756-e2031756.
36. Li F, Li Y-Y, Liu M-J, Fang L-Q, **Dean NE**, Wong GWK, Yang X-B, Longini I, Halloran ME, Wang H-J, Liu P-L, Pang Y-H, Yan Y-Q, Liu S, Xia W, Lu, X-X, Liu Q, Yang Y, Xu S-Q (2021). Household transmission of SARS-CoV-2 and risk factors for susceptibility and infectivity in Wuhan: a retrospective observational study. *Lancet Infectious Diseases* doi: 10.1016/S1473-3099(20)30981-6.
37. Giovanetti M, Cella E, Benedetti F, Magalis BR, Fonseca V, Fabris S, Campisi G, Ciccozzi A, Angeletti S, Borsetti A, Tambone V, Sagnelli C, Pascarella S, Riva A, Ceccarelli G, Marcello A, Azarian T, Wilkinson E, de Oliveira T, Alcantara LCJ, Cauda R, Caruso R, **Dean NE**, Browne C, Lourenco J, Salemi M, Zella D, Ciccozzi M (2021). SARS-CoV-2 shifting transmission dynamics and hidden reservoirs potentially limit efficacy of public health interventions in Italy. *Communications Biology* 4(489) doi: 10.1038/s42003-021-02025-0.
38. Lewnard JA, Patel MM, Jewell NP, Verani JR, Kobayashi M, Tenforde M, **Dean NE**, Cowling BJ, Lopman BA (2021). Theoretical framework for retrospective studies of the effectiveness of SARS-CoV-2 vaccines. *Epidemiology* 32(4): 508-517.
39. Hitchings MDT, **Dean NE**, Garcia-Carreras B, Hladish TJ, Huang AT, Yang B, Cummings DAT (2021). The usefulness of SARS-CoV-2 test positive proportion as a surveillance tool. *American Journal of Epidemiology* 190(7): 1396-1405.

40. Madewell ZJ, Pastore y Piontti A, Zhang Q, Burton N, Yang Y, Longini IM, Halloran ME, Vespignani A, **Dean NE** (2021). Using simulated infectious disease outbreaks to guide the design of individually randomized vaccine trials. *Clinical Trials* 18(5): 630-638.
41. Madewell ZJ, Yang Y, Longini IM, Halloran ME, **Dean NE** (2021). Factors Associated With Household Transmission of SARS-CoV-2: An Updated Systematic Review and Meta-analysis. *JAMA Network Open* 4(8) e2122240-e2122240.
42. Madewell ZJ, **Dean NE**, Berlin JA, Coplan PM, Davis KJ, Struchiner CJ, Halloran ME (2021). Challenges of evaluating and modeling vaccination in emerging infectious diseases. *Epidemics* 37: 100506.
43. Davis JT, Chinazzi M, Perra N, Mu K, Pastore y Piontti A, Ajelli M, **Dean NE**, Gioannini C, Litvinova M, Merler S, Rossi L, Sun K, Xiong X, Longini IM, Halloran ME, Viboud C, Vespignani A (2021). Cryptic transmission of SARS-CoV-2 and the first COVID-19 wave. *Nature* 600(7887): 127-132.
44. Dat VC, Anh NTL, Nghia KV, Linh NT, Thu HHK, Tam TTM, Ton T, Anh LQ, Phuc ND, Huong PTT, Nhan DT, Hai NH, Bertagnolio S, Crisp A, Inzaule S, **Dean NE**, Jordan MR, Nguyen VTT (2022). The prevalence of pre-treatment and acquired HIV drug resistance in Vietnam: a nationally representative survey, 2017-2018. *Journal of the International AIDS Society* 25(2): e25857.
45. **Dean NE**, Longini IM (2022). The ring vaccination trial design for the estimation of vaccine efficacy and effectiveness during infectious disease outbreaks. *Clinical Trials* 19(4): 402-406.
46. Koelle K, Martin MA, Antia R, Lopman B, **Dean NE** (2022). The changing epidemiology of SARS-CoV-2. *Science* 375(6585): 1116-1121.
47. Dean EW, **Dean NE**, Wright TW, Hao KA, Schoch BS, Farmer KW, Struk AM, King JK (2022). Clinical outcomes related to glenosphere overhang in reverse shoulder arthroplasty using a lateralized humeral design. *Journal of Shoulder and Elbow Surgery* 31(10): 2106-2115.
48. Cerqueira-Silva T, Andrews JR, Boaventura VS, Ranzani OT, de Araújo Oliveira V, Paixão ES, Bertoldo Júnior J, Mota Machado T, Hitchings MDT, Dorion M, Lind ML, Penna GO, Cummings DAT, **Dean NE**, Loureiro Werneck G, Pearce N, Barreto ML, Ko AI, Croda J, Barral-Netto M (2022). Effectiveness of CoronaVac, ChAdOx1 nCoV-19, BNT162b2, and Ad26. COV2. S among individuals with previous SARS-CoV-2 infection in Brazil: a test-negative, case-control study. *Lancet Infectious Diseases* 22(6): 791-801. *Published with invited commentary.*
49. Madewell ZJ, Yang Y, Longini IM, Halloran ME, **Dean NE** (2022). Household Secondary Attack Rates of SARS-CoV-2 by Variant and Vaccination Status: An Updated Systematic Review and Meta-analysis. *JAMA Network Open* 5(4):e229317.

50. Hitchings MDT, Lewnard JA, **Dean NE**, Ko AI, Ranzani OT, Andrews JR, Cummings DAT (2022). Use of recently vaccinated individuals to detect bias in test-negative case-control studies of COVID-19 vaccine effectiveness. *Epidemiology*. 33(4): 450-456.
51. Aleta A, Martin-Corral D, Bakker MA, Pastore y Piontti A, Ajelli M, Litvinova M, Chinazzi M, **Dean NE**, Halloran ME, Longini IM, Pentland A, Vespignani A, Moreno Y, Moro E (2022). Quantifying the importance and location of SARS-CoV-2 transmission events in large metropolitan areas. *Proceedings of the National Academy of Sciences* 119(26): e2112182119.
52. Hitchings MDT, Ranzani OT, Lind ML, Dorion M, D'Agostino TL, de Paula RC, de Paula OFP, de Moura Villela EF, Torres MSS, de Oliveira SB, Schulz W, Almiron M, Said R, de Oliveira D, da Silva PV, de Arujo WN, Gorinchteyn JC, **Dean NE**, Andrews JR, Cummings DAT, Ko AI, Croda J (2022). Change in covid-19 risk over time following vaccination with CoronaVac: test negative case-control study. *British Medical Journal* 377:e070102.
53. Ranzani OT, Hitchings ODT, de Melo RL, de Franca GVA, Fernandes CDF, Lind ML, Torres MSS, Tshua DH, David LCS, Said RFC, Almiron M, de Oliveira RD, Cummings DATC, **Dean NE**, Andrews JR, Ko AI, Croda J (2022). Effectiveness of an inactivated COVID-19 vaccine with homologous and heterologous boosters against Omicron in Brazil. *Nature Communications* 13(1): 5536.
54. Lind ML, Robertson J, Silva J, Warner F, Coppi AC, Price N, Duckwall C, Sosensky P, Di Giuseppe EC, Borg R, Fofana MO, Ranzani OT, **Dean NE**, Andrews JR, Croda J, Iwasaki A, Cummings DAT, Ko AI, Hitchings MDT, Schulz WL (2022). Association between primary or booster COVID-19 mRNA vaccination and Omicron lineage BA.1 SARS-CoV-2 infection in people with a prior SARS-CoV-2 infection: A test-negative case-control analysis. *PLOS Medicine* 19(12): e1004136.
55. Hao KA, Dean EW, Hones KM, King JJ, Schoch BS, **Dean NE**, Farmer KW, Struk AM, Wright TW (2022). Influence of humeral lengthening on clinical outcomes in reverse shoulder arthroplasty. *Orthopaedics & Traumatology: Surgery & Research*, 103502.
56. Crisp A, Halloran ME, Longini I, Vazquez-Prokopec G, **Dean NE** (2023). Covariate-Constrained Randomization with Cluster Selection and Substitution. *Clinical Trials* 20(3): 284-292.
57. Rich SN, Richards V, Mavian C, Magalis BR, Grubaugh N, Rasmussen SA, Dellicour S, Vrancken B, Carrington C, FiskHoffman R, DansoOdei D, Chacreton D, Shapiro J, Seraphin MN, Hepp C, Black A, Dennis A, Trovão, Vandamme AM, Rasmussen A, Lauzardo M, **Dean NE**, Salemi M, Prosperi M (2023). Application of Phylodynamic Tools to Inform the Public Health Response to COVID-19: Qualitative Analysis of Expert Opinions. *JMIR Formative Research* 7(1): e39409.
58. Hao KA, Dean EW, Hones KM, King JJ, Schoch BS, **Dean NE**, Farmer KW, Struk AM, Wright TW (2023). Influence of humeral lengthening on clinical outcomes in reverse shoulder arthroplasty. *Orthopaedics & Traumatology: Surgery & Research* 109(4): 103502.

59. Gozzi N, Chinazzi M, **Dean NE**, Longini IM, Halloran ME, Perra N, Vespignani A (2023). Estimating the impact of COVID-19 vaccine inequalities: a modeling study. *Nature Communications* 14(1): 3272.
60. Madewell ZJ, Yang Y, Longini IM, Halloran ME, Vespignani A, **Dean NE** (2023). Rapid review and meta-analysis of serial intervals for SARS-CoV-2 Delta and Omicron variants. *BMC Infectious Diseases* 23(1): 429.
61. Madewell Z, Wang LP, **Dean NE**, Zhang HY, Wang YF, Zhang XA, Liu W, Yang WZ, Longini IM, Gao GF, Li ZJ, Fang LQ, Yang Y, The Chinese Centers for Disease Control and Prevention (CDC) Etiology of Respiratory Infection Surveillance Study Team (2023). Interactions among acute respiratory viruses in Beijing, Chongqing, Guangzhou, and Shanghai, China, 2009-2019. *Influenza and other Respiratory Viruses* 17(11): e13212.
62. Grieve R, Yang Y, Abbott S, Babu GR, Bhattacharyya M, **Dean N**, Evans S, Jewell N, Langan SM, Lee W, Molenberghs G, Smeeth L, Williamson E, Mukherjee B (2023). The importance of investing in data, models, experiments, team science, and public trust to help policymakers prepare for the next pandemic. *PLOS Global Public Health* 3(11): e0002601.
63. Meyer AD, Guerrero SM, **Dean NE**, Anderson KB, Stoddard ST, Perkins TA (2023). Model-based estimates of chikungunya epidemiological parameters and outbreak risk from varied data types. *Epidemics* 45: 100721.
64. Wang R, Cen M, Huang Y, Qian G, **Dean N**, Ellenberg S, Fleming T, Lu W, Longini I (2024). Methods for the estimation of direct and indirect vaccination effects by combining data from individual- and cluster-randomized trials. *Statistics in Medicine* 43(8): 1627-1639.

* denotes equal contribution. Underline denotes postdoctoral or student trainee.

Editorials and Commentaries

1. Longini IM, Egger M, **Dean NE**, Edmunds WJ, Henao-Restrepo AM, on behalf of the study steering group (2015). Ebola vaccination – Authors’ reply. *The Lancet* 386(10012): 2480.
2. **Dean NE** (2019). Letter to the Editor. RE: ”Measurement of vaccine direct effects under the test-negative design.” *American Journal of Epidemiology* 188 (4), 806-810.
3. Ogburn EL, Bierer BE, Brookmeyer R, Choirat C, **Dean NE**, De Gruttola V, Ellenberg SS, Halloran ME, Hanley DF, Lee JK, Wang R, Scharfstein DO (2020). Aggregating data from COVID-19 trials. *Science* Jun 12;368(6496): 1198-1199.
4. **Dean NE** (2021). COVID vaccination studies: plan now to pool data, or be bogged down in confusion. *Nature* 591(7849): 179.
5. **Dean NE** (2021). Statistical successes and failures during the COVID-19 pandemic: Comments on Ellenberg and Morris. *Statistics in Medicine* 40(11): 2515-2517.

6. **Dean NE** (2021). Hospital admissions due to COVID-19 in Scotland after one dose of vaccine. *The Lancet* 397(10285): 1601-1603.
7. **Dean NE***, Hogan JW*, Schnitzer ME* (2021). Covid-19 vaccine effectiveness and the test-negative design. *New England Journal of Medicine*. DOI: 10.1056/NEJMe2113151.
8. **Dean NE**, Yang Y (2021). Discussion of “Regression Models for Understanding COVID-19 Epidemic Dynamics with Incomplete Data.” *Journal of the American Statistical Association* 116(536): 1587-1590.
9. **Dean NE** (2022). Tracking COVID-19 infections: time for a change. *Nature* 602(85).
10. **Dean NE**, Halloran ME (2022). Protecting the herd with vaccination. *Science* 375(6585): 1088-1089.
11. **Dean NE**, Howard DH, Lopman, BA (2023). Serological studies and the value of information. *American Journal of Public Health* 113(5): 517-519.

Pre-Prints

Yang Y, Lu Q, Liu M, Wang Y, Zhang A, Jalali N, **Dean N**, Longini I, Halloran ME, Xu B, Zhang X, Wang L, Liu W, Fang L (2020). Epidemiological and clinical features of the 2019 novel coronavirus outbreak in China. *medRxiv*. doi: 10.1101/2020.02.10.20021675.

Shapiro J, **Dean NE**, Madewell ZJ, Yang Y, Halloran ME, Longini IM (2021). Efficacy estimates for various COVID-19 vaccines: What we know from the literature and reports. *medRxiv*. doi: 10.1101/2021.05.20.21257461.

Other Publications

World Health Organization (coauthor **Dean NE**) (2014). HIV Drug Resistance Concept Note – Surveillance of HIV drug resistance in adults receiving antiretroviral therapy (acquired HIV drug resistance). <https://www.who.int/publications/i/item/9789241507073>

World Health Organization (coauthor **Dean NE**) (2014). HIV Drug Resistance Concept Note – Surveillance of HIV drug resistance in adults initiating antiretroviral therapy (pretreatment HIV drug resistance). <https://www.who.int/publications/i/item/9789241507196>

World Health Organization (coauthor **Dean NE**) (2016). Global report on early warning indicators of HIV drug resistance: Technical report. <https://apps.who.int/iris/handle/10665/246219>

World Health Organization (coauthor **Dean NE**) (2017). Guidance for sampling ART clinics in countries combining surveillance of pre-treatment HIV drug resistance and acquired HIV drug resistance at 12 and 48+ months. <https://apps.who.int/iris/handle/10665/259740>

World Health Organization (coauthor **Dean NE**) (2017). Surveillance of HIV drug resistance in children newly diagnosed with HIV by early infant diagnosis - Concept note.
<https://www.who.int/publications/i/item/9789241512541>

World Health Organization (lead author **Dean NE**) (2017). Informing Vaccination Programs: A Guide to the Design and Conduct of Dengue Serosurveys.
<https://apps.who.int/iris/handle/10665/255650>

Software & Technical Tools

World Health Organization (developed by **Dean NE**) (2014). Excel-based sample size calculators to design pre-treatment HIV drug resistance (PDR) surveys.

World Health Organization (developed by **Dean NE**) (2014). Excel-based sample size calculators to design acquired HIV drug resistance (ADR) surveys.

World Health Organization (developed by **Dean NE**) (2014). Excel-based sample size calculators to design concurrent PDR and ADR surveys.
<http://www.who.int/hiv/topics/drugresistance/protocols/en/>

HONORS AND AWARDS

Winner, Joint Policy Board for Mathematics Communications Award	2024
Leadership Academy, Committee of Presidents of Statistical Societies	2022
Finalist, Early Career Award for Public Engagement with Science, AAAS	2021
Winner, Provost's Excellence Award for Assistant Professors, University of Florida	2020
50 Experts to Trust in a Pandemic, Elemental by Medium	2020
Winner, Do-Bui Travel Award, Caucus for Women in Statistics	2019
Recipient, Travel Award, Women in Statistics & Data Science Conference, NSF	2016
Winner, Edward C. Bryant scholarship for an outstanding student in survey statistics, American Statistical Association	2013
Honorable Mention, Gertrude M. Cox scholarship for women students in statistics, American Statistical Association	2013
Recipient, Department of Biostatistics Certificate of Distinction in Teaching, Harvard University	2012
Overall and Student Winner, Modeling & Prediction RAB Poster Award, ENAR Spring Meeting, Washington DC	2012

Winner, John E. Alman Award in Statistics, Department of Mathematics & Statistics, Boston University	2009
Inductee, Phi Beta Kappa Society, Boston University	2009
Trustee Scholar (full-tuition merit scholarship), Boston University	2005-2009
Corporate National Merit Scholar, Osram Sylvania	2005-2009
College Scholar, College of Arts & Sciences, Boston University	2008
Distinguished Sophomore, College of Arts & Sciences, Boston University	2006

FUNDED RESEARCH GRANTS & CONTRACTS

Current Projects

R01-AI139761 (PI Dean NE), NIH/NIAID

“Design and Analysis of Vaccine Trials for Emerging Infectious Disease Threats”

08/2018 – 07/2023 (in NCE)

Role: Principal Investigator

Insight Network Center Grant (MPI Lopman B, Dean N, Koelle K, Chamberlain A, Piantadosi A), CDC Center for Forecasting and Outbreak Analytics

“Emory Center for Infectious Disease Modeling and Analytics and Training Hub”

09/2023 – 09/2028

Role: Co-Principal Investigator

U01-AI148069 (PI Vazquez-Prokopec G), NIH/NIAID

“Quantifying the Epidemiological Impact of Targeted Indoor Residual Spraying on Aedes-borne Diseases”

04/2020 – 03/2025

Role: Co-Investigator

Cooperative Agreement (PI Chamberlain A), CDC

07/2022 – 07/2024

“COVID-19 vaccine effectiveness among children and adolescents in the Atlanta Public School System”

Role: Co-Investigator

Peer-Reviewed Medical Research Program (PI Bavarian Nordic), Department of Defense

09/2023 – 09/2026 *“Evaluation of the Safety and Efficacy of a Viruslike Particle Vaccine for Prevention of Chikungunya Virus Disease”*

Role: Emory Subcontract PI & Co-Investigator

(MPI Rogawski-McQuade E, Lopman B), Bill and Melinda Gates Foundation
11/2023 – 10/2026
“Optimizing the evaluation of combination vaccines for enteric pathogens”
Role: Co-Investigator

Completed Projects

R56-AI148284 (MPI Halloran ME, Longini IM, Vespignani A), NIH/NIAID
“Mathematical and Statistical Methods for the Control of Global Infectious Disease Threats”
09/2020 – 08/2021
Role: Co-Investigator

Award 2028221 (PI Prosperi M), NSF
“RAPID: Dynamic Identification of SARS-COV-2 Transmission Epicenters in Presence of Spatial Heterogeneity (COV-DYNAMITE)”
04/2020 – 03/2021
Role: Co-Principal Investigator

Contract (PI Dean NE), World Health Organization
“Vaccine Clinical Evaluation in Public Health Emergencies”
07/2017 – 09/2017
Role: Principal Investigator

Contract (PI Dean NE), World Health Organization
“Dengue Vaccine Seroprevalence Surveys”
08/2016 – 01/2017
Role: Principal Investigator

U54-GM111274 (PI Halloran ME), NIH/NIGMS
“Modeling of Infectious Disease Agent Study Centers for Excellence Center for Statistics and Quantitative Infectious Diseases”
2017 – 2018
Role: Postdoctoral Associate

R37-AI032042 (PI Halloran ME), NIH/NIAID
“Methods for Evaluating Vaccine Efficacy”
2015 – 2018
Role: Postdoctoral Associate

Contract (PI Longini IM), World Health Organization
“Statistical analysis of the Ebola ring vaccine trial in Guinea”
2015 – 2016
Role: Postdoctoral Associate

R01-AI097015 (PI Pagano M), NIH/NIAID
“*Accurate and Efficient Measures for HIV Incidence*”
2013 – 2014
Role: Graduate Student Trainee

T32-AI007358 (PI Pagano M), NIH/NIAID
“*Biostatistics/Epidemiology Training Grant in AIDS*”
2009 – 2013
Role: Graduate Student Trainee

TEACHING EXPERIENCE

Emory University

BIOS522: Survival Analysis Methods	2022–2023
BIOS581: Statistical Practice I	2023

University of Florida

PHC6059: Introduction to Applied Survival Analysis	2018–2020
STA6177/PHC6937: Applied Survival Analysis	2017
PHC4094: Intro to Biostatistics for Health Science and Public Health	2016

Harvard University (as graduate teaching assistant)

Problem Solving in Advanced Statistics	2012–2013
BIO210: Analysis of Rates and Proportions	2013
BIO287: Public Health Surveillance	2013
BIO507: Quantitative Methods for Monitoring & Evaluation	2012
BIO206: Introductory Statistics for Medical Research	2012
BIO201: Introduction to Statistical Methods	2010–2011

Short Courses

ENAR Tutorial, “Statisticians & the Media: Find Your Voice, Build Your Network”	2023
JSM Roundtable, “Statisticians on Social Media”	2022
ENAR Tutorial, “How to Measure Vaccine Effectiveness”	2021

ADVISING

Postdoctoral Associate Supervised at Emory University

1. Avnika Amin (2021-Present)

Masters Student Theses Supervised at Emory University

1. Claire Pearsall (MPH, Biostatistics, active)
2. Chiara Antonioli (MPH, Biostatistics, active)
3. Evelyn Shi (MSPH, Biostatistics, 2023)
4. Erica Noltemeyer (Executive MPH, Applied Epidemiology, 2023)

Doctoral Committees at Emory University

1. Nicole Hood (PhD, Epidemiology, active)
2. Jhanel Chew (PhD, Global Health, active)

External Doctoral Committees while at Emory University

1. Wesley Billings (PhD, Epidemiology, University of Georgia, active)

Postdoctoral Associate Supervised at University of Florida

1. Zachary Madewell (2020-2021)

Doctoral Student Dissertations Supervised at University of Florida

1. Amy Crisp (PhD, Biostatistics, 2022)
2. Yanan Huo (PhD, Biostatistics, 2021)

Masters Student Theses Supervised at University of Florida

1. Daniel Stone (MS, Biostatistics, 2021)
2. Yancheng Li (MS, Biostatistics, 2019)

Doctoral Committees at University of Florida

1. Rachel Zahigian (PhD, Biostatistics, 2019)
2. Neda Jalali (PhD, Biostatistics, 2021)
3. Ashton Creasy (PhD, Environmental & Global Health, 2022)

PRESENTATIONS

Invited Seminars

Wake Forest University, Greensboro, NC (<i>Future</i>).	2024
Penn State, Center for Infectious Disease Dynamics, State College, PA (<i>Future</i>).	2024
University of North Carolina, Department of Biostatistics, Chapel Hill, NC.	2022
Johns Hopkins University, Department of Biostatistics, Baltimore, MD.	2022

University of Massachusetts Amherst, Department of Biostatistics & Epidemiology, Virtual.	2022
Fred Hutch Cancer Center, Vaccine & Infectious Disease Division, Virtual.	2021
Cincinnati Children's Hospital, Divisions of Biomedical Informatics, Biostatistics & Epidemiology, Virtual.	2021
University of Pennsylvania, Department of Biostatistics, Epidemiology & Informatics, Virtual.	2021
National Institute of Allergy & Infectious Diseases, Biostatistics Branch, Virtual.	2021
Florida International University, Department of Biostatistics, Virtual.	2021
Emory University, Department of Biostatistics & Bioinformatics, Virtual.	2021
McGill University, Department of Epidemiology, Biostatistics & Occupational Health, Virtual.	2021
University of Florida, Division of Infectious Diseases & Global Medicine, Virtual.	2021
University of Florida, Emerging Pathogens Institute, Virtual.	2020
Yale University, Department of Epidemiology of Microbial Diseases, Virtual.	2020
New York University Skirball Institute of Biomolecular Medicine, Virtual. (<i>Trainee-nominated speaker</i>)	2020
University of Florida, Informatics Institute, Virtual.	2020
Dana Farber Cancer Institute, Department of Data Science, Virtual.	2020
Brown University, Data Science Initiative, Virtual.	2020
Harvard University, Center for Communicable Disease Dynamics, Boston, MA.	2019

Selected Symposia

Universidad Autónoma de Yucatán Simposio Internacional, Mérida, Mexico.	2022
Boston University, Public Health Conversations, Boston, MA.	2022
London School of Hygiene & Tropical Medicine Symposium, Virtual.	2022
Isaac Newton Institute for Mathematical Sciences, Challenges Series, Virtual.	2021
NISS & Merck Meetup on the Design of COVID Vaccine Trials, Virtual.	2021

National Academies Workshop on Allocation of COVID-19 Monoclonal Therapies and Other Novel Therapeutics, Virtual.	2020
Sixth Seattle Symposium in Biostatistics, University of Washington, Virtual.	2020
Molecular Biotechnology Training Program Symposium, North Carolina State, Virtual.	2020
Dana Farber Cancer Institute, Marvin Zelen Zoomposium, Virtual.	2020

Conference Invited Presentations

Joint Statistical Meetings, Toronto, Canada.	2023
Joint Statistical Meetings, Invited JASA Paper Discussant, Virtual.	2021
13th Annual Conference on Statistical Issues in Clinical Trials, University of Pennsylvania, Virtual.	2021
COVID-19 Dynamics and Evolution Virtual Conference, UC San Diego, Virtual.	2020
ENAR Spring Meeting, Virtual.	2021
NFID Annual Conference in Vaccinology, Virtual.	2020
Joint Statistical Meetings, Denver, CO.	2019
MIDAS Network Annual Meeting, Bethesda, MD.	2019
IISA International Conference on Statistics, Gainesville, FL.	2018
MIDAS Annual Network Meeting, Reston, VA.	2016
ENAR Spring Meeting, Austin, TX.	2016

Conference Contributed Presentations

ENAR Spring Meeting, Philadelphia, PA.	2019
Joint Statistical Meetings, Chicago, IL.	2016
Epidemics 5, Clearwater, FL.	2015
ENAR Spring Meeting, Baltimore, MD	2014
Joint Statistical Meetings, Montreal, Canada	2013
ENAR Spring Meeting, Orlando, FL	2013

Selected Events on Science Communication

Joint Policy Board for Mathematics 2024 Communications Award Lecture, Joint Mathematical Meetings, San Francisco, CA.	2024
Harvard Data Science Institute Annual Conference, Boston, MA.	2022
Ecology and Evolution of Infectious Diseases Conference, Atlanta, GA.	2022
Wake Forest Conference on Analytics Impact, Virtual.	2022
NISS Graduate Student Research Conference, Virtual.	2022
STAT News, STAT Summit, Virtual.	2021
Joint Statistical Meetings, Invited Panel, Virtual.	2021
Society for Benefit-Cost Analysis Annual Conference, Invited Panel, Virtual.	2021
ENAR Webinar Series, Role of Statisticians in a Pandemic, Virtual.	2020
University Research Magazine Association Conference, Virtual.	2020

Selected Other Presentations

Emory University Board of Visitors, Virtual.	2021
WHO Blueprint Consultation on Clinical Trial Design, Geneva, Switzerland.	2018
WHO IVIR-AC Meeting, Annecy, France.	2017
WHO HIV Drug Resistance Surveillance Regional Training Events.	
- Geneva, Switzerland.	2015
- Port of Spain, Trinidad and Tobago.	2014
- Brasilia, Brazil.	2013
- Kunming, China.	2013

PROFESSIONAL SERVICE

Editorial Service

Statistical Editorial Board, Nature Medicine	2024-Present
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Peer Review

Journal Reviewer, Statistics: *Biometrics*; *Biostatistics*; *Clinical Trials*; *Communications in Statistics - Simulation and Computation*; *JASA*; *Statistical Methods in Medical Research*; *Statistics in Medicine*

Journal Reviewer, Applied: *BMJ; JAMA; The Lancet; Nature; NEJM; Science; AIDS Research and Human Retroviruses; American Journal of Epidemiology; Annals of Global Health; BMC Medicine; BMC Public Health; BMJ Open; Cell; Clinical Infectious Diseases; Clinical Trials; Current Drug Targets; Emerging Infectious Diseases; Epidemiology; Epidemiology & Infection; Health Security; International Journal of Epidemiology; Journal of Clinical Medicine; The Lancet Infectious Diseases; Nature Communications; Nature Medicine; Parasites & Vectors; PNAS; PLOS Neglected Tropical Diseases; Science Translational Medicine; Transactions of the Royal Society of Tropical Medicine and Hygiene; Vaccine*

Book Reviewer: *CRC Press, Wiley*

External Grant Review

Analytics and Statistics for Population Research Panel B (ASPB) Study Section, <i>NIH</i>	2023
Grant review, <i>UK Medical Research Council</i>	2023
Epidemiology & Public Health Special Emphasis Panel, <i>NIH</i>	2022
BMRD Study Section, <i>NIH</i>	2021
COVID-19 Rolling Call, <i>UK Medical Research Council</i>	2020
IRAP Infectious Disease Epidemiology, <i>NIH</i>	2020
NIAID Special Emphasis Panel, <i>NIH</i>	2019
Peer Reviewed Medical Research Program, <i>Department of Defense</i>	2018

Internal Grant Review

MP3 Initiative Seed Grants, <i>Emory University</i>	2022
I3 Rapid Synergy Awards, <i>Emory School of Medicine</i>	2022

Service to the Profession

Member, Excellence in Statistical Reporting Award Committee, <i>ASA</i>	2024–Present
Member, Communications Committee, Justice, Equity, Diversity and Inclusion (JEDI) Outreach Group, <i>ASA</i>	2021–Present
Member, HIVResNET Monitoring & Surveillance Working Group, <i>WHO</i>	2018–Present
Chair, Leadership Webinar Series Organizing Committee, <i>COPSS-NISS</i>	2023–2024

Member, R&D Blueprint for Action to Prevent Epidemics Clinical Trials Working Group, WHO	2016-2020
Advisory Board, COVID Tracking Project	2020-2021
COVID-19 Data Science Webinar Organizing Committee, COPSS-NISS	2020-2021
Member, Newcomb Cleveland Prize Award Committee, AAAS	2020
Chair, Working Group on Dengue Serosurveillance for Vaccination, WHO	2017

University Service

Co-Director, Emory Alliance for Vaccine Epidemiology (EAVE)	2021-Present
BIOS Department Representative, Faculty Council Committee, Emory Rollins	2022-Present
Member, Department of Biostatistics & Bioinformatics Qualifying Exam Committee, Emory University	2022-Present
Member, Department of Biostatistics & Bioinformatics Diversity, Equity & Inclusion Committee, Emory University	2022-Present
Organizer, Center for Statistics & Quantitative Infectious Diseases Seminar Series, University of Florida	2015-2022
Member, Department of Biostatistics Committee on Diversity, Equity & Inclusion, University of Florida	2020-2021
Member, Department of Biostatistics Committee on Space, University of Florida	2018-2021
Member, Strategic Planning Committee - Connecting our Undergraduate Students to our Advanced Degree Programs, University of Florida	2018
Judge, Florida Statewide Graduate Student Research Symposium, Gainesville, FL	2016
Judge, Three Minute Thesis (3MT), University of Florida	2016
Judge, Graduate Student Research Day, University of Florida	2015
Co-Coordinator, HIV Working Group Seminar Series, Department of Biostatistics, Harvard University	2012-2013
Chair, Department of Biostatistics Student Committee, Harvard University	2012-2013
Member, Department of Biostatistics Student Committee, Harvard University	2009-2012

PUBLIC ENGAGEMENT

Selected Community Outreach

Phillips Academy Andover, Virtual.	2023
Emory Rollins Infectious Disease Webinar for Prospective Students, Virtual.	2021
UF Undergraduate Public Health Association, Virtual.	2021
UF Public Health Pathway Scholars Program, Virtual.	2020-2021
Retired Faculty of the University of Florida, Virtual.	2021
Waterford High School Medical Careers Club, Virtual.	2018-2019
UF CPET Program for High School Students in STEM, Gainesville, FL.	2019, 2021
UF CATALySES Program for High School STEM Teachers, Gainesville, FL.	2017-2019
UF HealthStreet Interactive Town Hall on Zika, Gainesville, FL.	2017

Published Perspectives

Amin A, **Dean NE** (April 1, 2022). Florida's recommendation against the COVID-19 vaccine for kids was based on data. But that data was flawed. *Slate*.

Seung KJ, **Dean NE** (August 19, 2021). To vaccinate more Americans, lean into outbreaks *Stat News*.

Dean NE, Madewell Z (March 5, 2021). Understanding the spectrum of vaccine efficacy measures. *BMJ Opinion*.

Dean NE (November 16, 2020). COVID-19 Data Dives: Vaccine Efficacy: A Biostatistician's Primer. *Medscape*.

Dean NE (August 3, 2020). I'd Need Evidence Before I'd Get a Covid-19 Vaccine. It Doesn't Exist Yet. *New York Times*.

Dean NE (July 30, 2020). Steps to a Better COVID-19 Response. *Boston Review Magazine*.

Dean NE (July 17, 2020). The 'low' daily death rate for covid won't last. *Washington Post*.

Rivers CM, **Dean NE** (July 6, 2020). Covid-19 in the US: We're not getting full value from our data. *BMJ Opinion*.

Dean NE (June 26, 2020). COVID-19 Data Dives: Three Reasons Why Median Age of COVID Infection is Dropping. *Medscape*.

Dean NE (June 26, 2020). COVID-19 Data Dives: Asymptomatic Transmission? We Just Don't Know. *Medscape*.

Dean NE (May 28, 2020). COVID-19 Data Dives: Why Don't We Have a Vaccine for SARS or MERS? *Medscape*.

Dean NE (May 4, 2020). COVID-19 Data Dives: The Takeaways From Seroprevalence Surveys. *Medscape*.

Bergstrom C, **Dean NE** (May 1, 2020). What the proponents of 'natural herd immunity' don't say. *New York Times*.

Dean NE, Rivers C (April 29, 2020). Antibody tests show we're nowhere near herd immunity. *Washington Post*.

Dean NE (April 10, 2020). How to conduct coronavirus research at pandemic speed. *Washington Post*.

Dean NE, Vespignani A, Halloran ME, Longini IM, Halloran ME (September 12, 2016). Zika virus: only a few small outbreaks likely to occur in the continental US. *The Conversation*.

Media

For details on TV, radio, podcast, and print media appearances, see natalixdean.net/media.

PROFESSIONAL AFFILIATIONS

American Statistical Association	2012–Present
American Association for the Advancement of Science	2018–Present
Eastern North American Region of the International Biometric Society	2018–Present

Last updated March 21, 2024