Natalie Exner Dean
Curriculum Vitae

CONTACT INFORMATION

Department of Biostatistics & Bioinformatics	*Phone*: (404) 727-6124
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EDUCATION

Ph.D. Biostatistics, Harvard University   2014
  "Surveillance methods for monitoring HIV incidence & drug resistance"
A.M. Biostatistics, Harvard University   2011
B.A. Mathematics/Statistics, Biology, Boston University, *summa cum laude*   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, Dafae 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, Mabirizi 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). Accumulating evidence from randomized clinical trials across 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 N, **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, <u>Madewell ZJ</u>, 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. <u>Madewell ZJ</u>, 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. <u>Madewell ZJ</u>, 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* doi.org/10.1177/17407745211028898.

41. <u>Madewell ZJ</u>, 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. <u>Madewell ZJ</u>, **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, <u>Crisp A</u>, 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* 17407745211073594.

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 athroplasty using a lateralized humeral design. textitJournal of Shoulder and Elbow Surgery doi: 10.1016/j.jse.2022.03.014.

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* doi: 10.1016/S1473-3099(22)00140-2. **Published with invited commentary.*

49. Madewell ZJ, Yang Y, Longini IM, Halloran ME, Dean NE. Household Secondary Attack Rates of SARS-CoV-2 by Variant and Vaccination Status: An Updated Systematic Review and Meta-analysis. JAMA Netw Open. 2022;5(4):e229317. doi:

10.1001/jamanetworkopen.2022.9317

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. In press at *Epidemiology*.

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 (2020). Quantifying the importance and location of SARS-CoV-2 transmission events in large metropolitan areas. In press at *Proceedings of the National Academy of Sciences*. Preprint at doi: 10.1101/2020.12.15.20248273.

* denotes equal contribution. <u>Underline</u> 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.

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: https://doi.org/10.1101/2021.05.20.21257461.

Hitchings M, Ranzani O, Lind ML, Dorion M, D'Agostino TL, Cardo de Paula R, Pereirade Paula OF, Moura de Villela EF, Torres MSS, Barbosa de Oliveira SS, Schulz W, Almiron M, Said R, Dias de Oliveira R, Vieira da Silva P, Navegantes de Araujo, Gorinchteyn JC, **Dean NE**, Andrews JR, Cummings DAT, Ko AI, Croda J (2021). Change in COVID-19 risk over time following vaccination with CoronaVac: A test-negative case-control study. *medRxiv.* doi: https://doi.org/10.1101/2021.12.23.21268335.

Lind ML, Robertson AJ, 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). Effectiveness of Primary and Booster COVID-19 mRNA Vaccination against Omicron Variant SARS-CoV-2 Infection in People with a Prior SARS-CoV-2 Infection. *medRxiv*. doi: https://doi.org/10.1101/2022.04.19.22274056

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). *http://www.who.int/hiv/topics/drugresistance/protocols/en/*

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). *http://www.who.int/hiv/topics/drugresistance/protocols/en/*

World Health Organization (coauthor **Dean NE**) (2016). Global report on early warning indicators of HIV drug resistance: Technical report. *http://www.who.int/hiv/pub/drugresistance/ewi-hivdr-2016/en/*

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. *http://www.who.int/hiv/pub/drugresistance/hivdr-sampling-guidance-2017/en/*

World Health Organization (coauthor **Dean NE**) (2017). Surveillance of HIV drug resistance

in children newly diagnosed with HIV by early infant diagnosis - Concept note.
http://www.who.int/hiv/pub/drugresistance/hivdr-concept-note-2017/en/

World Health Organization (lead author **Dean NE**) (2017). Informing Vaccination Programs: A Guide to the Design and Conduct of Dengue Serosurveys.
http://www.who.int/immunization/research/development/dengue_serosurveys/en/

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

Leadership Academy, Committee of Presidents of Statistical Societies	2022
Finalist, Early Career Award for Public Engagement with Science, American Association for the Advancement of Science	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 for promising early career researchers, Caucus for Women in Statistics	2019
Recipient, Travel Award, Women in Statistics & Data Science Conference, National Science Foundation	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
<u>Role:</u> Principal Investigator

U01-AI148069 (PI Vazquez-Prokopec G), NIH/NIAID
"Quanitifying the Epidemiological Impact of Targeted Indoor Residual Spraying on Aedes-borne Diseases"
04/2020 – 03/2025
<u>Role:</u> Co-Investigator

Contract, Emergent Biosolutions
"Chikungunya Vaccine Efficacy Trial Planning"
09/2020 – Present
<u>Role:</u> Expert Consultant

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
<u>Role:</u> 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
<u>Role:</u> Co-Principal Investigator

Contract (**PI Dean NE**), World Health Organization
"*Vaccine Clinical Evaluation in Public Health Emergencies*"
07/2017 – 09/2017
<u>Role:</u> Principal Investigator

Contract (**PI Dean NE**), World Health Organization
"*Dengue Vaccine Seroprevalence Surveys*"
08/2016 – 01/2017
<u>Role:</u> 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
<u>Role:</u> Postdoctoral Associate

R37-AI032042 (PI Halloran ME), NIH/NIAID
"*Methods for Evaluating Vaccine Efficacy*"
2015 – 2018
<u>Role:</u> Postdoctoral Associate

Contract (PI Longini IM), World Health Organization
"*Statistical analysis of the Ebola ring vaccine trial in Guinea*"
2015 – 2016
<u>Role:</u> Postdoctoral Associate

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

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

TEACHING EXPERIENCE

Short Courses

ENAR Tutorial, "How to Measure Vaccine Effectiveness"   2021

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

ADVISING

Postdoctoral Associates

1. Zachary Madewell (2020-2021, completed)
2. Avnika Amin (2021-Present)

Doctoral Students at Emory Universiy

1. Julia Shapiro (PhD, Biostatistics, active)

Doctoral Students at University of Florida

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

Doctoral Committees at University of Florida

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

PRESENTATIONS

Invited In-Person Seminars

University of North Carolina Chapel Hill, Department of Biostatistics (*future*)	2022
Johns Hopkins University, Department of Biostatistics	2022
Boston University, Public Health Conversations	2022

Harvard University, Infectious Disease Epidemiology and the Center for Communicable Disease Dynamics	2019

Invited Virtual Seminars

University of Massachusetts Amherst, Department of Biostatistics and Epidemiology	2022
Fred Hutch Cancer Research Center, Vaccine and Infectious Disease Division	2021
Cincinnati Children's Hospital, Divisions of Biomedical Informatics, Biostatistics amd Epidemiology	2021
University of Pennsylvania, Department of Biostatistics, Epidemiology and Informatics	2021
National Institute of Allergy & Infectious Diseases, Biostatistics Branch	2021
Florida International University, Department of Biostatistics	2021
Emory University, Department of Biostatistics & Bioinformatics	2021
McGill University, Department of Epidemiology, Biostatistics and Occupational Health	2021
University of Florida, Division and Infectious Diseases and Global Medicine (*virtual*)	2021
University of Florida, Emerging Pathogens Institute	2020
Yale University, Department of Epidemiology of Microbial Diseases	2020
New York University Skirball Institute of Biomolecular Medicine (*Trainee-nominated speaker*)	2020
University of Florida, Informatics Institute	2020
Dana Farber Cancer Institute, Department of Data Science	2020
Brown University, Data Science Initiative	2020

Invited Virtual Symposiums

London School of Hygiene and Tropical Medicine Symposium	2022
Isaac Newton Institute for Mathematical Sciences	2021
National Institute of Statistical Sciences & Merck Meetup on Design of COVID Vaccine Trials	2021

National Academies Workshiop on Allocation of COVID-19 Moncolonal Therapies and Other Novel Therapeutics	2020
6th Seattle Symposium in Biostatistics, University of Washington	2020
Molecular Biotechniology Training Program Symposium, North Carolina State	2020
Dana Farber Cancer Institute, Marvin Zelen Zoomposium	2020

Invited Panels on Science Communication

Ecology and Evolution of Infectious Diseases Conference	2022
Wake Forest Conference on Analytics Impact	2022
National Institute of Statistical Sciences Graduate Student Research Conference	2022
STAT News, STAT Summit	2021
Joint Statistical Meetings	2021
Society for Benefit-Cost Analysis Annual Conference	2021
ENAR Webinar Series, "Role of Statisticians in a Pandemic"	2020
University Research Magazine Association Conference	2020

Conference Invited Presentations

Joint Statistical Meetings, Invited JASA Paper Discussant, Virtual Event	2021
13th Annual Conference on Statistical Issues in Clinical Trials, University of Pennsylvania, Philadelpha, PA	2021
COVID-19 Dynamics and Evolution Virtual Conference, UC San Diego	2020
ENAR Spring Meeting, Virtual Event	2021
National Foundation for Infectious Diseases Annual Conference in Vaccinology, Virtual Event	2020
Joint Statistical Meetings, Denver, CO	2019
Modeling of Infectious Disease Agents Study (MIDAS) Network Annual Meeting, Bethesda, MD	2019
IISA International Conference on Statistics, Gainesville, FL	2018

MIDAS 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 Other Presentations

"COVID-19 in Georgia: Where do we stand? Public health and economic implications." Emory University Board of Visitors	2021
"Framework on accumulating evidence across outbreaks." World Health Organization's Blueprint 5th consultation on clinical trial design. Geneva, Switzerland	2018
"Recommended Guidelines for Dengue Serosurveillance." WHO Immunization and vaccines related implementation research advisory committee meeting (IVIR-AC), Annecy, France	2017

"Surveillance of Pre-Treatment & Acquired HIV Drug Resistance."

- Geneva, Switzerland	2015
- Port of Spain, Trinidad and Tobago	2014
- Brasilia, Brazil	2013
- Kunming, China	2013

PROFESSIONAL SERVICE

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*

Grant Review

BMRD Study Section ad hoc reviewer, *National Institutes of Health*	2021
COVID-19 Rolling Call, *UK Medical Research Council*	2020
IRAP Infectious Disease Epidemiology, *National Institutes of Health*	2020
NIAID Special Emphasis Panel, *National Institutes of Health*	2019
Peer Reviewed Medical Research Program, *Department of Defense*	2018

Service to the Profession

Member, Communications Committee, Justice, Equity, Diversity and Inclusion (JEDI) Outreach Group	2021–Present
Member, HIVResNET Monitoring & Surveillance Working Group, World Health Organization	2018–Present
Member, R&D Blueprint for Action to Prevent Epidemics Clinical Trials Working Group, World Health Organization	2016–Present
Member, Professional Development Committee, Caucus for Women in Statistics	2020–2021
Advisory Board, COVID Tracking Project	2020–2021
COVID-19 Data Science Webinar Organizing Committee, COPSS-NISS	2020–2021
Member, Newcomb Cleveland Prize Award Committee, American Association for the Advancement of Science	2020
Leader, Working Group on Dengue Serosurveillance for Vaccination Planning, World Health Organization	2017

University Service

Co-Director, Emory Advancing Vaccine Epidemiology (EAVE)	2021–Present

Member, Department of Biostatistics and Bioinformatics Recruitment Committee, Emory University	2021–Present
Organizer, Quantitative Infectious Disease Working Group	2015–Present
Member, HIVResNET Monitoring & Surveillance Working Group, World Health Organization	2018–Present
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

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*.

Community/Student Outreach

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 summer program for high school students in STEM	2019, 2021
UF CATALySES summer program for high school STEM teachers	2017-2019
UF HealthStreet Interactive Town Hall on Zika	2017

Media

Selected Television

"The Vaccine: Conquering COVID," Documentary, *Discovery Channel*, Premiered February 18, 2021.

"Topic: Coronavirus vaccine trials," *The Rachel Maddow Show*, August 3, 2020.

"Topic: Epidemiologists weigh in on going out to eat," *Good Morning America*, July 24, 2020.

"Topic: Herd Immunity," *CNN Erin Burnett OutFront*, May 5, 2020.

"Topic: Coronavirus vaccine research," *CNN Inside Politics with John King*, March 27, 2020.

Selected Podcasts

"What You Need to Know About the Fourth Wave (with Natalie Dean)" *In the Bubble*, Apr 26, 2021.

"Fact Check My Feed: How Excited Should You Be About COVID-19 Vaccines?" *NPR Science Friday*, Nov 13, 2020.

"Rushing a COVID-19 Vaccine Could Lead to 'Perpetual Limbo'" *Medicine and the Machine with Dr. Eric Topol and Dr. Abraham Verghese*, Sept 14, 2020.

"Should You Get an Antibody Test?" *Slate's What Next: TBD*, May 8, 2020.

Selected Radio

"What to Know about Coronavirus Vaccine Development," WBUR On Point Radio, Sept 22, 2020.

"Scientists Study How Much A Difference Wearing A Mask Makes" NPR Morning Edition, July 21, 2020.

"Coronavirus: Your Questions Answered," BBC World Service, March 26, April 2, April 9, April 16, April 23, April 30, May 7, May 14, 2020.

"Why The True Fatality Rate Of COVID-19 Is Hard To Estimate," NPR All Things Considered, April 24, 2020.

"The Race to Develop a Coronavirus Vaccine," WBUR On Point Radio, April 14, 2020.

Selected Web Appearances

"STAT+ Conversations: What statistics mean for the Covid-19 vaccines (with Natalie Dean)." StatNews, May 18, 2021.

"COVID-19 Bending the Curve Series: The Path to a Vaccine." McClatchy, June 4, 2020.

Press Mentions

Quoted by the Atlantic, Associated Press, Axios, Bloomberg, Boston Globe, BuzzFeed, Consumer Reports, Discover Magazine, the Economist, Financial Times, Forbes, Fortune, LA Times, Miami Herald, National Geographic, NBC News, New York Times, NPR, Quanta Magazine, PBS NewsHour, Politico, Politifact, Popular Mechanics, ProPublica, Reuters, Science Magazine, Scientific American, Stat News, Tampa Bay Times, Time Magazine, USA Today, Vox, Wall Street Journal, Washington Post, WebMD, Wired, and more.

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
Caucus for Women in Statistics	2018–Present

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