

Stephen Richards Cole

Department of Epidemiology
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Employment

Professor of Epidemiology <i>UNC Gillings School of Global Public Health</i>	2010 – present
Associate Professor of Epidemiology <i>UNC Gillings School of Global Public Health (2008 – 2010)</i> <i>Johns Hopkins Bloomberg School of Public Health (2005 – 2008)</i>	2005 – 2010
Assistant Professor of Epidemiology <i>Johns Hopkins Bloomberg School of Public Health</i>	2000 – 2005

Education

Postdoctoral Fellow <i>Division of Preventive Medicine</i> <i>Harvard Medical School</i>	1998 – 2000
Ph.D. <i>Department of Epidemiology and Biostatistics</i> <i>University of South Florida College of Public Health</i>	1993 – 1998
B.S. <i>University of South Florida</i>	1989 – 1993

Honors

Web of Science Highly Cited	2019, 2020
American Journal of Epidemiology article of the year	2018
SER Award for Excellence in Education	2018
ACE Award for Outstanding Contributions to Epidemiology	2015
Outstanding Alumni Award, USF College of Public Health	2015
American Journal of Epidemiology article of the year	2015
UNC Gillings School Teaching Innovation Award (Epidemiology)	2014
Charles C. Shepard Science Award Nomination, CDC	2010

Outstanding Review, Pharmacoepidemiology and Drug Safety	2010
Outstanding Review, Clinical Infectious Diseases	2007
Loan Repayment Award, NIH	2005 – 2007
Outstanding Dissertation Award, University of South Florida	1998
Delta Omega public health honor society	1995

Teaching (as lead or co-lead instructor)

Decision Theory	2018
Advanced Epidemiologic Methods, with Jessie Edwards	2015 – 2017, 2019 –
Causal Inference	2012
Bayesian Inference	2010
Epidemiologic Analysis of Time-to-Event Data	2009 – 2014
Methodologic Challenges in EPID Research, with Dani Fallin	2007 – 2008
Cohort Studies, with Jon Samet and Alvaro Munoz	2002 – 2006

Service

Associate Editor, Statistics in Medicine	2020 – present
Member, Society for Causal Inference	2020 – present
Member, Appointments, Promotions and Tenure Committee	2017 – 2020
Member, NIH AIDS Clinical Epidemiology study section	2015 – 2019
Co-Director, UNC CFAR Biostatistics core	2014 – present
Editor, American Journal of Epidemiology	2013 – present
Ad Hoc Reviewer, NIH AIDS Clinical Epidemiology study section	2012, 2014
Board Member-at-Large, Society for Epidemiologic Research	2011 – 2014
Director of Graduate Studies, Epidemiology	2011 – 2015
Member, Gillings School Academic Programs Committee	2011 – 2015
Director, CNICS Epidemiology and Biostatistics core	2010 – 2020
Ad Hoc Reviewer, NIH AIDS & AIDS Related Research study section	2010
Internal Advisory Board Member, UNC CFAR	2009 – 2014
Ad Hoc Reviewer, NIH Cell Biology study section	2009
Editorial Board, Epidemiology	2007 – 2013
Member, NIH/NIAID Special Emphasis Panel	2007
Associate Editor, American Journal of Epidemiology	2006 – 2013
Member, Bloomberg School Academic Standards Committee	2005 – 2008
Ad Hoc Reviewer, NIH/NICHD intramural grant review	2004
Ad Hoc Reviewer, NIH/NICHD special emphasis panel	2003
Associate Editor-in-Residence, American Journal of Epidemiology	2001 – 2006
Ad Hoc Reviewer, NIH Prevention & Health Behavior study section	2001
Member, American Statistical Association	2000 – 2012, 2021 –
Member, Society for Epidemiologic Research	1995 – present

Journal Reviews Provided for:

AIDS, American Journal of Epidemiology, Annals of Applied Statistics, Annals of Internal Medicine, Biometrics, Biometrika, Biostatistics, British Medical Journal, Clinical Infectious Disease, Clinical Trials, Demography, Environmental Health Perspectives, Epidemiology, Epidemiologic Methods, European Journal of Epidemiology, Global Epidemiology, International Journal of Biostatistics, International Journal of Epidemiology, Journal of Causal Inference, Journal of the American Medical Association, Journal of the American Statistical Association, Journal of Clinical Epidemiology, Journal of the Royal Statistical Society C, Lifetime Data Analysis, Minds and Machines, Nature, New England Journal of Medicine, Patterns, Pharmacoepidemiology and Drug Safety, PLoS Medicine, PLoS One, PNAS, Statistics and Probability Letters, Statistics in Medicine, and others.

Grants*Active*

R01AI152434 (MPI with J. Edwards) 09/22/20 – 08/31/25

Improved analyses of experimental and observational studies of HIV

Develop approaches to improve answers from randomized and nonrandomized HIV studies by use of new methods at the interface of statistics, epidemiology, causal inference, and artificial intelligence.

U01 AI103390 (A. Adimora, PI) 01/01/19 – 12/31/25

University of North Carolina Women's Interagency HIV Study

The Women's Interagency HIV Study (WIHS) is a longitudinal, observational cohort study of women infected with and at risk for HIV infection in the United States. The purpose of WIHS is to understand the current epidemiology of HIV infection, disease progression, treatment use and outcomes, and related co-morbidities among U.S. women with HIV.

Role: Investigator and Leadership team

R01HD087119 (J. Stringer, PI) 09/27/16 – 08/31/21

A Randomized Trial of 17-Hydroxyprogesterone Caproate (17P) to Reduce Preterm Birth Among Women Receiving Antiretroviral Therapy in Pregnancy

Preterm birth and perinatal HIV are among the two biggest risks faced by neonates in many developing countries. We propose a trial of the FDA-approved drug 17-hydroxyprogesterone caproate (17P) to prevent preterm birth among 800 HIV-infected pregnant women in Malawi and Zambia.

Role: Principal Statistician

Gates OPP1192462 (J. Stringer, PI) 11/01/18 – 10/31/21

Limiting Adverse Birth Outcomes in Resource-Limited Settings - The LABOR Study

To develop improved algorithms that will (a) stratify individual women according to their risk of specific adverse outcomes and predict the interventions they will likely need, (b) identify women in real time who are candidates for intervention, and (c) improve the time to diagnosis of actionable outcomes.

Role: Investigator

Gates INV003266 (J. Stringer, PI) 11/05/19 – 06/30/21

Fetal Age and Machine Learning Initiative 2 (FAML12)

Our overarching goal is to develop a robust, inexpensive, widely-deployable ultrasound device that can assess gestational age and other important obstetric conditions while requiring minimal operator expertise.

Role: Investigator

P01AI050410 (R. Swanstrom, PI) 08/01/21 – 07/31/26

University of North Carolina Center for AIDS Research

The UNC CFAR is a consortium of three institutions: UNC Chapel Hill, Research Triangle Institute, and Family Health International. The goal of the CFAR is promote the broad sweep of HIV/AIDS research through a variety of mechanisms.

Role: Co-Director of Biostatistics Core F

Past (as Principal Investigator)

R01AI100654 03/19/13 – 04/01/19

NIH/NIAID

Structural models for treatment and exposure effects in clinical HIV cohorts

Develop, apply and disseminate advanced, yet practical quantitative methods to enable accurate inference from complex longitudinal data on individuals infected with HIV.

R21EY021478 09/01/11 – 08/31/14

NIH/NEI

Structural models to untangle triggers of ocular/nonocular herpesvirus recurrence

To estimate the association between purported triggers of ocular and genital HSV recurrence in the Herpetic Eye Disease Study using state-of-the-art statistical approaches to account for time-varying confounding.

R01AA017594 09/01/08 – 08/31/12

NIH/NIAAA

Structural models and direct and indirect effects of alcohol use on HIV infection

To use NIH-funded data sources to adapt, apply and refine novel analytic epidemiologic methods to characterize the relation, and estimate the impact, of alcohol intake and patterns on risk of infection with HIV.

R03AI071763 03/01/07 – 02/28/09

NIH/NIAID

Structural models to bridge observational and randomized evidence: HAART and AIDS

To use multiple data sources to develop a novel analytic method to correct age period observational analyses for information bias and provide a refined estimate of the average causal effect of HAART on time to AIDS or death.

U01DK66116 (A. Muñoz, PI)

04/01/03 – 03/31/08

NIH/NIDDK

Kidney Disease in Children Data Management and Analysis Center

Establish the Data Coordinating Center for a prospective study of kidney disease in children, including management, analysis, interpretation, and presentation of data.

Role: Co-PI

Publications (mentee*; 79 papers with 79+ citations on Google Scholar)

Peer-reviewed

1. Cole SR, Edwards JK, Breskin A, Hudgens MG. Comparing parametric, nonparametric, and semiparametric estimators: The Weibull trials. *American Journal of Epidemiology* 2021; 190: 1643–1651.
2. Cole SR, Edwards JK, Greenland S. Surprise! *American Journal of Epidemiology* 2021; 190: 191-193.
3. *Lu H, Cole SR, Westreich D, Hudgens MG, Adimora AA, Althoff KN, Silverberg MJ, Buchacz K, Li J, Edwards JK, Rebeiro PF, Lima VD, Marconi VC, Sterling TR, Horberg MA, Gill MJ, Kitahata MM, Eron JJ, Moore RD, for the NA-ACCORD. Clinical effectiveness of integrase strand transfer inhibitor-based antiretroviral regimens among adults with human immunodeficiency virus: a collaboration of cohort studies in the United States and Canada. *Clinical Infectious Diseases* 2021; [In press](#)
4. *Lu H, Cole SR, Westreich D, Hudgens MG, Adimora AA, Althoff KN, Silverberg MJ, Buchacz K, Li J, Edwards JK, Rebeiro PF, Lima VD, Marconi VC, Sterling TR, Hornberg MA, Gill MJ, Kitahata MM, Eron JJ, Moore RD. Virologic outcomes among adults with HIV using integrase strand transfer inhibitor based antiretroviral regimens: a collaboration of cohort studies. *AIDS* 2021; [In press](#)
5. *Lu H, Cole SR, Platt RW, Schisterman EF. Revisiting overadjustment bias. *Epidemiology* 2021; [In press](#)
6. *Rudolph JE, Cole SR, Edwards JK, Whitsel EA, Serre ML, Richardson DB. Association between annual concentrations of particulate matter and mortality rates: using data fusion and Bayesian Maximum Entropy to target all US counties. *Epidemiology* 2021; [In press](#)

7. *Ross R, Cole SR, Richardson DB. Decreased susceptibility of marginal odds ratios to finite-sample bias. *Epidemiology* 2021; [In press](#)
8. Edwards JK, Cole SR, Breger TL, Rudolph JE, Filiatreau L, Buchacz K, Humes E, Rebeiro PF, D'Souza G, Gill J, Silverberg MJ, Mathews WC, Horberg MA, Thorne J, Moore RD, Hall HI, Justice A, Marconi VC, Lima VD, Bosch RJ, Sterling TR, Althoff KN, Saag M, Eron JJ. Mortality among people entering HIV care compared to the general US population. *Annals of Internal Medicine* 2021; [In press](#)
9. Price JT, Vwalika B, Freeman BL, Cole SR, Saha PT, Mbewe FM, Phiri WM, Peterson M, Muyangwa D, Sindano N, Mwape H, Smithmyer ME, Kasaro MP, Rouse DJ, Goldenberg RL, Chomba E, Stringer JSA. Weekly 17 alpha-hydroxyprogesterone caproate to prevent preterm birth among women living with HIV: a randomised, double-masked, placebo-controlled trial. *Lancet HIV* 2021; [In press](#)
10. Breskin A, Cole SR, Edwards JK, Brookmeyer R, Eron JJ, Adimora AA. Fusion designs and estimators for treatment effects. *Statistics in Medicine* 2021; 40: 3124-3137.
11. Smith MJ, Mansournia MA, Maringe C, Zivich PN, Cole SR, Leyrat C, Belot A, Rachet B, Luque-Fernandez MA. Introduction to computational causal inference using reproducible Stata, R, and Python code. *Statistics in Medicine* 2021; [In press](#)
12. Zalla LC, Edwards JK, Cole SR, Breger TL, Rudolph JE, Virkud A, Satcher Johnson A, Hall HI. Demographic trends in US HIV diagnoses, 2008-2017: Data movies. *American Journal of Public Health* 2021; 111: 529-532.
13. Zivich PN, Cole SR, Breskin A. Twister plots. *American Journal of Epidemiology* 2021; [In press](#)
14. Zhou T, Zhou J, Hodges JS, Lin L, Chen Y, Cole SR, Chu H. Estimating the complier average cause effect in a meta-analysis of randomized clinical trials with binary outcomes accounting for noncompliance: A generalized linear latent and mixed model approach. *American Journal of Epidemiology* 2021; [In press](#)
15. Richardson DB, Keil AP, Cole SR. Exposure measurement error bias amplification. *American Journal of Epidemiology* 2021; [In press](#)
16. Breger TL, Westreich D, Edmonds A, Edwards JK, Zalla L, Cole SR, Ramirez C, Ofotokun I, Kassaye S, Brown T, Konkle-Parker D, Jones Weiss D, D'Souza G, Cohen M, Tien P, Taylor T, Anastos K, Adimora AA. The smoking cessation cascade among US women with or at risk for HIV infection. *AIDS* 2021; [In press](#)

17. Xiao M, Chen Y, Cole SR, MacLehose R, Richardson D, Chu H. Is OR “portable” in meta-analysis? Time to consider bivariate generalized linear mixed model. *Journal of Clinical Epidemiology* 2021; [In press](#)
18. Davy-Mendez T, Napravnik S, Eron JJ, Cole SR, van Duin D, Wohl DA, Hogan BC, Althoff KN, Gebo KA, Moore RD, Silverberg MJ, Horberg MA, Gill MJ, Mathews WC, Klein MB, Colasanti JA, Sterling TR, Mayor AM, Rebeiro PF, Buchacz K, Li J, Nanditha NGA, Thorne JE, Nijhawan A, Berry SA, North American AIDS Cohort Collaboration on Research and Design (NA-ACCORD) of IeDEA. Current and Past Immunodeficiency are Associated with Higher Hospitalization Rates among Persons on Virologically Suppressive Antiretroviral Therapy for up to Eleven Years. *Journal of Infectious Diseases* 2021; [In press](#)
19. Davy-Mendez T, Napravnik S, Eron JJ, Cole SR, Van Duin D, Wohl DA, Gebo KA, Moore RD, Althoff KN, Poteat T, Gill MJ, Hornberg MA, Silverberg MJ, Nanditha GA, Thorne JE, Berry SA for the NA-ACCORD. Racial, ethnic, and gender disparities in hospitalizations among persons with HIV in the United States and Canada, 2005–2015. *AIDS* 2021; 35: 1229-1239.
20. Palella FJ, Armon C, Cole SR, Hart R, Tedaldi E, Novak R, Battolora L, Purinton S, Li J, Buchacz K, for the HIVS Outpatients Study. HIV viral exposure and mortality in a multicenter ambulatory HIV adult cohort, United States, 1995-2016. *Medicine* 2021; 100: e26285.
21. Richardson DB, Keil AP, Edwards JK, Cole SR. Reducing bias due to exposure measurement error using disease risk scores. *American Journal of Epidemiology* 2021; 190: 621-629.
22. Richardson DB, Cole SR, Ross RK, Poole C, Chu H, Keil AP. Meta-analysis and sparse data bias. *American Journal of Epidemiology* 2021; 190: 336-340.
23. Mollan KR, Pence BW, Xu S, Edwards JK, Mathews WC, O’Cleirigh C, Crane HM, Eaton EF, Collier AC, Weideman AK, Westreich DJ, Cole SR, Tierney C, Bengtson AM for the CFAR Network of Integrated Clinical Systems (CNICS) and AIDS Clinical Trials Group (ACTG). Transportability from randomized trials to clinical care: On initial HIV treatment with efavirenz and suicidal thoughts or behaviors. *American Journal of Epidemiology* 2021; [In press](#)
24. Edmonds A, Breskin A, Cole SR, Westreich D, Ramirez C, Cocohoba J, Wingood G, Cohen MH, Golub ET, Kassaye SG, Metsch LR, Sharma A, Konkle-Parker D, Wilson TE, Adimora AA. Poverty, deprivation, and mortality risk among women with HIV in the United States: an evaluation of improvements on neighborhood context. *Epidemiology* 2021; [In press](#)
25. Breskin A, Edmonds A, Cole SR, Westreich D, Anastos K, Cocohoba J, Cohen M, Cooper H, Golub E, Kassaye S, Konkle-Parker D, Metsch L, Wilson T, Adimora AA. G-computation for policy-relevant effects of interventions on time-to-event outcomes. *International Journal of Epidemiology* 2021; 23: 2021-2029.

26. Price JT, Vwalika B, Edwards JK, Cole SR, Kasaro MP, Rittenhouse KJ, Kumwenda A, Lubeya MK, Stringer JSA. Maternal HIV infection and spontaneous versus provider-initiated preterm birth in an urban Zambian cohort. *JAIDS* 2021; 87: 860-868.
27. Benefield HC, Reeder-Hayes KE, Nichols HB, Calhoun BC, Love MI, Sun X, Kirk EL, Geradts J, Hoadley KA, Cole SR, Earp HS, Olshan AF, Carey LA, Perou CM, Troester MA. Outcomes of hormone-receptor positive, HER2-negative breast cancers by race and tumor biological features. *JNCI Cancer Spectrum* 2021; 5: pkaa072.
28. Cole SR, Edwards JK, Naimi AI, Munoz A. Hidden imputations and the Kaplan-Meier estimators. *American Journal of Epidemiology* 2020; 189: 1408-1411.
29. *Breger TL, Edwards JK, Cole SR, Westreich D, Pence BW, Adimora AA. Two-stage g-computation: evaluating intervention impacts in observational cohorts when exposure information is partly missing. *Epidemiology* 2020; 31: 695-703.
30. *Breger TL, Edwards JK, Cole SR, Saag M, Rebeiro PF, Moore RD, Eron JJ. Estimating a set of mortality risk functions with multiple contributing causes of death. *Epidemiology* 2020; 31: 704-712.
31. *Yin DE, Cole SR, Ludema C, Golin C, Miller WC, Warshaw MG, McKinney RE, for the PENPACT-1 Study Team. Pediatric Adherence to Protease Inhibitor vs. Non-Nucleoside Reverse Transcriptase Inhibitor Antiretroviral Therapy: A Randomized Controlled Trial. *PLoS ONE* 2020; 15: e0242405.
32. Edwards JK, Fox M, Cole SR. Flexibly accounting for exposure misclassification with external validation data. *American Journal of Epidemiology* 2020; 189: 850-860.
33. Richardson DB, Keil AP, Cole SR, Kinlaw AC. Assessing exposure-response trends using the disease risk score. *Epidemiology* 2020; 31: e16-e16.
34. Richardson DB, Keil AP, Kinlaw A, Edwards JK, Cole SR. Standardizing discrete time hazard ratios with a disease risk score. *American Journal of Epidemiology* 2020; 189: 1197-1203.
35. Shin S, Liu Y, Cole SR, Fine JP. Ensemble estimation and variable selection with semiparametric regression models. *Biometrika* 2020; 107: 433-448.
36. Cope AB, Cole SR, Ludema C, Eron JJ, Holmes M, Anastos K, Cocohoba J, Cohen M, Cooper H, Golub E, Kassaye S, Konkle-Parker D, Metsch L, Milam J, Wilson T, Adimora AA. Neighborhood poverty and control of HIV, hypertension, and diabetes in the Women's Interagency HIV Study. *AIDS & Behavior* 2020; 24: 2033-2044.

37. Cole SR, Hudgens MG, Edwards JK, Brookhart MA, Richardson DB, Westreich D, Adimora AA. Nonparametric bounds for the risk function. *American Journal of Epidemiology* 2019; 188: 632-636.
38. *Rudolph JE, Cole SR, Eron JJ, Kashuba AD, Adimora AA. Estimating HIV prevention effects in low incidence settings. *Epidemiology* 2019; 30: 358-364.
39. *Rudolph JE, Cole SR, Edwards JK, Whitsel EA, Serre ML, Richardson DB. Using animations of risk functions to visualize trends in US all-cause and cause-specific mortality, 1968-2016. *American Journal of Public Health* 2019; 109: 451-453.
40. *Lu H, Cole SR, Hall HI, Schisterman EF, Westreich D. Generalizing the per-protocol treatment effect: the case of ACTG A5095. *Clinical Trials* 2019; 16: 52-62.
41. Edwards JK, Bakoyannis G, Yiannoutsos CT, Mburu MW, Cole SR. Nonparametric estimation of the cumulative incidence function under outcome misclassification using external validation data. *Statistics in Medicine*. 2019; 38: 5512-5527
42. Edwards JK, Cole SR, Geng E, Kitahata M, Mathews C, Mayer K, Moore R, Mugavero M, Eron JJ. Sensitivity analyses for misclassification of cause of death in the parametric g-formula. *American Journal of Epidemiology* 2019; 187: 1808-1816.
43. Richardson DB, Keil AP, Kinlaw AC, Cole SR. Marginal structural models for risk or prevalence ratios using a disease risk score. *American Journal of Epidemiology* 2019; 188: 960-966.
44. Breskin A, Westreich D, Cole SR, Hudgens MG, Hurt CB, Seaberg EC, Thio CL, Tien PC, Adimora AA. The effects of hepatitis C infection and treatment on all-cause mortality among people living with human immunodeficiency virus. *Clinical Infectious Diseases* 2019; 68: 1152-1159.
45. Breskin A, Westreich D, Cole SR, Edwards JK. Using bounds to compare the strength of exchangeability assumptions for internal and external validity. *American Journal of Epidemiology* 2019; 188: 1355-1360.
46. Westreich D, Edwards JK, Lesko CR, Cole SR, Stuart EA. Target validity and the hierarchy of study designs. *American Journal of Epidemiology* 2019; 188: 438-443.
47. Price JT, Winston J, Vwalika B, Cole SR, Stoner MCD, Lubeya MK, Kumwenda A, Stringer JSA. Quantifying bias between reported last menstrual period and ultrasonography estimates of gestational age in Lusaka, Zambia. *Int J Gynaecol Obstet* 2019; 144: 9-15.
48. Hong JL, Webster-Clark M, Jonsson Funk M, Stürmer T, Dempster S, Cole SR, Herr I, LoCasale R. Comparison of methods to generalize randomized clinical trials without

individual patient data for the target population. *American Journal of Epidemiology* 2019; 188: 426-437.

49. Lodi S, Phillips A, Lundgren J, Logan R, Sharma S, Cole SR, Babiker A, Law M, Chu H, Byrne D, Horban A, Sterne JAC, Porter K, Sabin C, Costagliola D, Abgrall S, Gill J, Touloumi G, Pacheco AG, van Sighem A, Reiss P, Bucher HC, Montoliu Gimenez A, Jarrin I, Wittkop L, Meyer L, Perez-Hoyos S, Justice A, Neaton JD, Hernan MA. Effect estimates of randomized trials and observational studies: comparing apples with apples. *American Journal of Epidemiology* 2019; 188: 1569-1577.
50. Bansi-Matharu L, Rodriguez Loria G, Cole SR, Mugerwa H, Vecino I, Lundgren J, Pulik P, Smith C, Phillips A. Risk factors for antiretroviral therapy (ART) discontinuation in a large multinational trial of early ART initiators. *AIDS* 2019; 33: 1385-1390.
51. Li X, Cole SR, Kshirsagar AV, Fine J, Stürmer T, Brookhart MA. Safety of Dynamic Intravenous Iron Administration Strategies in Hemodialysis Patients. *Clinical Journal of the American Society of Nephrology* 2019; 14: 728-737.
52. Price JT, Vwalika B, Freeman BL, Cole SR, Mulenga HB, Winston J, Mbewe FM, Chomba E, Mofenson LM, Rouse DJ, Goldenberg RL, Stringer JSA. Intramuscular 17-hydroxyprogesterone caproate to prevent preterm birth among HIV-infected women in Zambia: study protocol of the IPOP randomized trial. *BMC Pregnancy and Childbirth* 2019; 19: 81.
53. Fatukasi TV, Edmonds A, Gustafson DR, Cole SR, Edwards JK, Bolivar H, Cohen M, Fischl MA, Gange S, Konkle-Parker D, Moran CA, Plankey M, Sharma A, Tien PC, Adimora AA. Prevalence and 1-year incidence of frailty among women with and without HIV in the Women's Interagency HIV Study. *AIDS* 2019; 33: 357-359.
54. Kay ES, Bayet S, Westfall AO, Christopoulos K, Cole SR, Crane HM, Geng EH, Keruly JC, Kitahata MM, Mathews WC, Mayer KH, Moore RD, Napravnik S, Saag M, Mugavero MJ. Compound Retention in Care and All-Cause Mortality among People Living with HIV. *Open Forum Infectious Diseases* 2019; 6: ofz120.
55. Zhong VW, Juhaeri J, Cole SR, Shay CM, Gordon-Larsen P, Kontopantelis E, Mayer-Davis EJ. Proximal HbA1C Level and First Hypoglycemia Hospitalization in Adults with Incident Type 2 Diabetes. *J Clin Endocrinol Metab.* 2019; 104: 1989-1998.
56. Belenky N, Pence BW, Cole SR, Dusetzina SB, Edmonds A, Oberlander J, Plankey M, Adimora AA. Impact of Medicare Part D on Mental Health Treatment and Outcomes for Dual Eligible Beneficiaries with HIV. *AIDS Care* 2019; 31: 505-512.

57. Pace ND, Siega-Riz AM, Olshan AF, Chescheir NC, Cole SR, Desrosiers TA, Tinker SC, Hoyt AT, Canfield MA, Carmichael SL, and Meyer RE for The National Birth Defects Prevention Study. Survival of infants with spina bifida and the role of maternal pre-pregnancy body mass index. *Birth Defects Research* 2019; 111: 1205-1216.
58. Cole SR, Edwards JK, Westreich D, Lesko C, Mathews WC, Eron JJ, Greenland S. Estimating multiple time-fixed treatment effects using a semi-Bayes semiparametric marginal structural Cox proportional hazards regression model. *Biometrical Journal* 2018; 60: 100-114.
59. *Willis SJ, Cole SR, Westreich D, Edmonds A, Hurt CB, Albrecht S, Anastos K, Augenbraum M, Fischl M, French AL, Kalapila AG, Karim R, Peters MG, Plankey M, Seaberg EC, Tien PC, Adimora AA. Chronic hepatitis C virus infection and subsequent HIV viral load among women with HIV initiating antiretroviral therapy. *AIDS* 2018; 32: 653-661.
60. *Rudolph JE, Cole SR, Edwards JK, TBN, Eron JJ, for the CNICS network. At-risk alcohol use among HIV-positive patients and the completion of patient-reported outcomes. *AIDS and Behavior* 2018; 22: 1313-1322.
61. *Rudolph JE, Cole SR, Edwards JK. Parametric assumptions equate to hidden observations: comparing the efficiency of nonparametric and parametric models for estimating time to AIDS or death in a cohort of HIV-positive women. *BMC Med Res Methods* 2018; 18: 142.
62. *Lee JS, Cole SR, Achenbach CJ, Dittmer DP, Richardson DB, Miller WC, Burkholder G, Geng E, Kitahata M, Mathews WC, Mayer K, Moore RD, Rodriguez B, Eron JJ, for the CNICS investigators. Cancer risk in HIV patients with incomplete viral suppression after initiation of antiretroviral therapy *PLoS One* 2018; 13: e0197665.
63. Edwards JK, Cole SR, Hall HI, Mathews WC, Moore RD, Mugavero MJ, Eron JJ; CNICS investigators. Virologic suppression and CD4+ cell count recovery after initiation of raltegravir or efavirenz-containing HIV treatment regimens. *AIDS* 2018; 32: 261-266.
64. Buchanan AL, Hudgens MG, Cole SR, Mollen K, Sax PE, Dar E, Adimora AA, Mugavero MJ. Generalizing evidence from randomized trials using inverse probability of sampling weights. *Journal of the Royal Statistical Society A* 2018; 181: 1193-1209.
65. Seamans MJ, Carey TS, Westreich DJ, Cole SR, Wheeler SB, Alexander GC, Pate V, Brookhart MA. Association of household opioid availability and prescription opioid initiation among household members. *JAMA Intern Med* 2018; 178: 102-109.
66. Lesko CR, Edwards JK, Cole SR, Moore RD, Lau B. When to censor? *American Journal of Epidemiology* 2018; 187: 623-632.

67. Li X, Cole SR, Westreich D, Brookhart MA. Primary non-adherence and the new-user design. *Pharmacoepidemiology and Drug Safety* 2018; 27: 361-364.
68. Keil AP, Mooney S, Jonsson Funk M, Cole SR, Edwards JK, Westreich D. Resolving an apparent paradox in double-robust estimators. *American Journal of Epidemiology* 2018; 187: 891-892.
69. Richardson DB, Kinlaw AC, Keil AP, Naimi AI, Kaufman JS, Cole SR. Inverse probability weights for the analysis of polytomous outcomes. *American Journal of Epidemiology* 2018; 187: 1125-1127.
70. Perkins NJ, Cole SR, Harel O, Tchetgen Tchetgen EJ, Sun B, Mitchell EM, Schisterman EF. Principled approaches to missing data in epidemiologic studies. *American Journal of Epidemiology* 2018; 187: 568-575.
71. Sun B, Perkins NJ, Cole SR, Harel O, Mitchell E, Schisterman EF, Tchetgen Tchetgen EJ. Inverse probability weighted estimation for monotone and nonmonotone missing data. *American Journal of Epidemiology* 2018; 187: 585-591.
72. Harel O, Mitchell EM, Perkins NJ, Cole SR, Tchetgen Tchetgen EJ, Sun B, Schisterman EF. Multiple imputation for incomplete data in epidemiological studies. *American Journal of Epidemiology* 2018; 187: 576-584.
73. Richardson DB, Keil A, Cole SR, Dement J. Asbestos standards: Impact of currently uncounted asbestos fibers on lifetime lung cancer risk. *American Journal of Industrial Medicine* 2018; 61: 383-390.
74. Breskin A, Cole SR, Hudgens MG. A practical example demonstrating the utility of single world intervention graphs. *Epidemiology* 2018; 29: e20-e21.
75. Breskin A, Cole SR, Westreich D. Exploring the subtleties of inverse probability weighting and marginal structural models. *Epidemiology* 2018; 29: 352-355.
76. Ludema C, Edmonds A, Cole SR, Eron JJ, Adedimeji AA, Cohen J, Cohen MH, Kassaye A, Konkle-Parker DJ, Metsch LR, Wilson TE, Wingood GM, Adimora AA. Comparing neighborhood and state contexts for women living with and without HIV: understanding the Southern HIV epidemic. *AIDS Care* 2018; 30: 1360-1367.
77. Stoner MCD, Cole SR, Winston J, Price J, Stringer SAJ. Timing of initiation of antiretroviral therapy and risk of preterm birth in observational studies of HIV-infected pregnant women: the role of selection bias. *Epidemiology* 2018; 29: 224-229.

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Predoctoral Trainees Table

Past / Current Trainee	Trainee Name (Where Training Occurred)	Training Period (Degree)	Prior Academic Degree Institution(s)	Prior Academic Degree(s)	Prior Academic Degree Year(s)	Title of Research Project	Current Position of Past Trainees / Source of Support of Current Trainees
Past	Choi, Tou (Hopkins)	7/01-6/03 (MS)	NA	MBBS	NA	Estimation of ordered odds ratios by data expansion	Unknown, formerly: Research Assistant, Fred Hutchinson Cancer Research Institute
Past	Lopez-Gatell, Hugo (Hopkins)	7/03-6/07 (PhD)	Autonomous University of Mexico	MD	NA	Effect of tuberculosis on HIV progression	Director, Innovation on Infectious Disease Surveillance and Control, National Institute of Public Health, Cuernavaca, Mexico
Past	Nawar, Eric (Hopkins)	7/02-6/04 (MS)	NA	BS	NA	Homosexual sexual activity and Kaposi's sarcoma among HIV-1 and HHV-8 co-infected men	Director, Informatics, Elizabeth Glaser Pediatric AIDS Foundation, Washington DC
Past	Cain, Lauren (Hopkins)	7/03-6/08 (PhD)	Princeton	AB	NA	Effect of HAART on repeated AIDS-defining illnesses: Structural models to bridge observational and	Senior Statistician, Takeda Pharmaceuticals, Boston MA

						randomized evidence	
Past	Shiels, Meredith (Hopkins)	7/06-6/09 (PhD)	Penn State	BS	NA	Ascertainment and incidence of AIDS-defining and non-AIDS-defining cancers in a population of HIV-infected men	Investigator, NCI, Bethesda MD
Past	Belenky, Nadya M.	8/09-12/12 (MSPH)	Stanford Univ.	BA	2007	MSPH: Depressive symptoms, stigma and HIV viral load in Tanzania	Health Services Researcher, RTI, NC
Past	Fangman, Mary T.	8/10-5/12 (MSPH)	Univ. of Missouri	BS	2010	MSPH: Breastfeeding and age at diagnosis of Type I diabetes mellitus	Research Associate, U of Kansas Medical Center Preventive Medicine and Public Health Kansas City, KS
Past	Edwards, Jessie K.	1/11-5/13 (PhD)	UNC-Chapel Hill	MSPH	2010	PhD: Methods to account for outcome misclassification in epidemiology	Assistant Professor, Epidemiology, UNC Chapel Hill, NC
Past	Gill, Karminder S.	8/03-12/10 (PhD)	UNC-Chapel Hill	MSPH	1994	PhD: Correcting for non-adherence in a randomized study of hip protectors to prevent fractures	Senior Epidemiologist Amgen, Inc. Chapel Hill, NC
Past	Ludema, Christina	8/07-5/13 (PhD)	Calvin College	BS	2006	MSPH: Meta-analysis of trials on the association of prophylactic Acyclovir with HIV-1 viral load among individuals co-	Assistant Professor Indiana University Bloomington School of Public Health

						infected with HSV-2 PhD: Causes and treatment of Herpes Simplex virus recurrences	
Past	Naimi, Ashley	8/08-12/12 (PhD)	Univ. of Montreal	MPH	2008	PhD: Causal inference in occupational epidemiology: Asbestos, lung cancer mortality, and the healthy worker survivor	Associate Professor, Epidemiology, Emory University, GA
Past	O'Brien, Katie M.	8/10-5/13 (PhD)	Williams College	MSPH	2010	PhD: Race and subtype differences in the replication of previously identified breast cancer susceptibility loci: A Bayesian Approach	Staff Scientist, NIEHS Research Triangle Park, NC
Past	Sander, Petra M.	1/07-8/11 (PhD)	UNC-Chapel Hill	MSPH	2008	PhD: Alcohol consumption and HIV seroconversion in men who have sex with men	Unknown, formerly: Postdoctoral Fellow Epidemiology Harvard, Boston MA
Past	Lesko, Catherine	8/11-5/15 (PhD)	Emory Univ.	MPH	2006	PhD: The population level impact of HIV treatment in the test-and-treat era	Assistant Professor, Epidemiology, Johns Hopkins University, Baltimore MD
Past	Todd,	1/12-12/15	UNC-Chapel	MSPH	2011	PhD: Statin use among	Senior Research

	Jonathan	(PhD)	Hill			HIV+ women	Associate, OCHIN, Portland OR
Past	Lee, Jennifer	8/13-5/17 (PhD)	Johns Hopkins	MSPH	2011	Incomplete viral suppression and mortality in HIV patients after antiretroviral therapy initiation	Assistant Scientist, Epidemiology, Johns Hopkins University, Baltimore MD
Past	Willis, Sarah	8/15-12/17 (PhD)				PhD: HCV coinfection and HIV progression	Research Scientist, Department of Population Medicine, Harvard Medical School, Boston MA
Past	Rudolph, Jacqueline	8/14-5/19 (PhD)	UNC-Chapel Hill	BA	2013	MSPH/PhD: Trends in US Mortality and Effects of Potential Nationwide Interventions on Ambient Fine Particulate Matter	Postdoctoral Fellow, Epidemiology, Emory University, GA
Past	Breger, Tiffany	8/16-5/20 (PhD)	UC Berkeley	BS	2014	PhD: Estimating the Impact of Intervention Portfolios in Cohort Studies	Postdoctoral Fellow, Medicine, UNC-Chapel Hill, NC
Past	Lu, Haidong	8/16-6/20 (PhD)	Johns Hopkins	MSPH	2015	PhD: Comparative Effectiveness of Integrase Strand Transfer Inhibitor- based vs Efavirenz-based Antiretroviral Regimens Among HIV-infected Adults	Postdoctoral Fellow, Epidemiology, Yale University
Past	Yin, Dwight	8/15-8/20		MD, MPH		PhD: Accounting for Adherence in Comparisons	Medical Officer, NIAID/NIH

						of Pediatric Antiretroviral Therapy	
Current	Li, Catherine	8/19-present	UC Berkeley	MPH	2018	MD/PhD: TBN	Current MD/PhD student: Genetic Epidemiology Training Grant
Current	Ross, Rachael	8/19-present	Emory	MPH	2011	PhD: TBN	Current PhD student: Perinatal Epidemiology Training Grant
Current	Feeney, Timothy	8/20-present	U Maryland Harvard	MD MPH	2014 2017	PhD: TBN	Current PhD student: Research Assistantship
Current	Klose, Mark	8/21-present	NC State	BS	2021	MSPH/PhD: TBN	Current PhD student: Research Assistantship

Postdoctoral Trainees Table

Past/Current Trainee	Trainee Name (Where Training Occurred)	Postdoc Research Training Period	Prior Academic Degree(s)	Prior Academic Degree Year(s)	Prior Academic Degree Institution(s)	Title of Research Project	Current Position of Past Trainees/ Source of Support of Current Trainees
Past	Howe, Chanelle	6/09-7/11 (non-degree)	PhD	2009	Johns Hopkins University	Structural models and direct and indirect effects of alcohol use on HIV infection	Tenured Associate Professor, Brown University Public Health-Epidemiology Providence, RI
Past	Westreich, Daniel	2/10-9/10 (non-degree)	PhD	2008	UNC-Chapel Hill	HIV, antiretroviral therapy, and tuberculosis: Outcomes in Johannesburg, South Africa	Tenured Professor, UNC-Chapel Hill, NC
Past	Edwards, Jessie	6/13-6/15 (non-degree)	PhD	2013	UNC-Chapel Hill, NC	Applications and extensions of quantitative methods for the analysis of complex longitudinal cohort data	Assistant Professor, UNC-Chapel Hill, NC
Current	Zivich, Paul	6/21-present	PhD	2021	UNC-Chapel Hill, NC		Postdoctoral Fellow