

Date of Preparation

November 21, 2025

Personal Data

Name: Kara Rudolph

Contact Information: kr2854@cumc.columbia.edu, 734.717.9830

Academic Appointments / Work Experience

07/2024–Present	Associate Professor with Tenure Department of Epidemiology Mailman School of Public Health Columbia University, New York, NY
08/2019–06/2024	Assistant Professor Department of Epidemiology Mailman School of Public Health Columbia University, New York, NY
12/2017–07/2019	Assistant Professor Emergency Medicine, School of Medicine Graduate Group in Epidemiology Graduate Group in Public Health Sciences University of California, Davis
01/2011–12/2013	Teaching Assistant, Research Assistant Departments of Epidemiology, Biostatistics, and Mental Health Johns Hopkins University, Baltimore, MD
09/2010–12/2010	Consultant Altarum Institute, Washington, DC
06/2008–08/2010	Policy Associate Altarum Institute, Washington, DC
08/2007–01/2008	Intern Howard County Health Department, Columbia, MD
06/2005–06/2007	Staff Scientist Merck & Co. Inc. West Point, PA

Education

- 08/2010–02/2014 **Ph.D. Epidemiology**
Johns Hopkins University, Bloomberg School of Public Health
Concentration in Methods
Advisor: Thomas Glass
Thesis: Mental health in context: effect heterogeneity and mechanism in the relationship between neighborhood disadvantage and adolescent depression and anxiety.
- 08/2012–12/2013 **M.H.S. Biostatistics**
Johns Hopkins University, Bloomberg School of Public Health
Advisor: Elizabeth Stuart
Thesis: Implementation of methods to estimate population marginal treatment effects in the presence of non-randomized treatment assignment and informative selection from a population-based sample.
- 07/2007–05/2008 **M.P.H.**
Johns Hopkins University, Bloomberg School of Public Health
Capstone: Evaluation design for a study using community health workers to improve breastfeeding rates among adolescent African American women in East Baltimore.
- 08/2006–12/2006 Graduate course in biostatistics
University of Pennsylvania
- 08/2001–05/2005 **B.S. Biochemistry**
University of Michigan
Highest honors
Thesis: Actin-regulatory proteins $p116^{RIP}$ and *LIMK2* interact with POSH.
-

Training

- 07/2016–11/2017 **Postdoctoral Scholar**
Department of Epidemiology and Biostatistics, School of Public Health
University of California, Berkeley
K99 Pathway to Independence Awardee, National Institute on Drug Abuse
Mentors: Jennifer Ahern and Mark van der Laan
- 09/2014–06/2016 **Health and Society Scholar**
Robert Wood Johnson Foundation
University of California, San Francisco
University of California, Berkeley
Advisors: Jennifer Ahern, Maria Glymour, Mark van der Laan
- 02/2014–08/2014 **Postdoctoral Fellow**
Department of Mental Health
Johns Hopkins School of Public Health, Baltimore, MD
Drug Dependence and Epidemiology
Advisor: Elizabeth Stuart

Honors and Awards

2023	Rothman Prize— <i>Epidemiology</i> <i>*Given to the single best paper in the journal for the year (first author)</i>
2022	Article of the Year— <i>American Journal of Epidemiology</i>
2022	Data Science Institute Seeds Funds Recipient—Columbia University
2021	Exemplary Reviewer in 2020— <i>Epidemiology</i>
2021	CHOSEN Pilot Award—Columbia University
2021	Brian MacMahon Early Career Award—Society for Epidemiologic Research <i>*Given to one early-career epidemiologist per year</i>
2021	Calderone Award for Junior Faculty—Columbia University
2021	Data Science Institute Seeds Funds Recipient—Columbia University
2021	Article of the Year— <i>American Journal of Epidemiology</i>
2020	Reviewer of the Year, 2019— <i>American Journal of Epidemiology</i>
2018	Lilienfeld Postdoctoral Paper Award—Society for Epidemiologic Research <i>*Given to postdoctoral epidemiologist per year</i>
2017	Faculty Scholar, Center for the Advancement of Multicultural Perspectives on Science, University of California, Davis
2014	Student Paper Award—American Statistical Association, Social Statistics/Government/ Survey Research Methods Sections
2012–2014	Sommer Scholar—Johns Hopkins School of Public Health
2010–2012	Intramural Research Training Award Fellow—National Institute of Mental Health
2008	Delta Omega Honor Society—Johns Hopkins School of Public Health
2003–2005	James B. Angell Scholar—University of Michigan
2001–2005	University Honors—University of Michigan

Academic Service, Professional Organizations:

PhD Dissertation Committee membership

2024–Present	Anton Kociolek	Epidemiology	PhD Dissertation Chair
2024–Present	Chris Crowe	Epidemiology	PhD Dissertation Committee
2023–2025	Amy Pitts	Biostatistics	PhD Dissertation Committee
2022–2025	Neal Jawadekar	Epidemiology	PhD Dissertation Chair
2022–2024	Allison Perry	New York University	PhD Dissertation Committee
2021–2024	Anna Krasnova	Epidemiology	PhD Dissertation Advisor
2020–2023	Alex Perlmutter	Epidemiology	PhD Dissertation Advisor
2020–Present	Daniel Carter	London School of Hygiene and Tropical Medicine	PhD Dissertation Committee
2020 - 2021	Debbie Huang	Epidemiology	PhD Dissertation Committee
2020 - 2021	Byoungjun Kim	Epidemiology	PhD Dissertation Committee
2020 - 2025	Erik Jorgenson	Epidemiology	PhD Dissertation Chair
2020 - 2020	John Pamplin	Epidemiology	PhD Dissertation Committee

Grant Review Service, National

2025	Scientific Reviewer - ZRG1 EPH-K (55) R - RFA Panel: Accelerating the Pace of Substance Use Research Using Existing Data National Institute on Drug Abuse
2023	Scientific Reviewer - Methodology, Measurement, and Statistics Program National Science Foundation
2022	Scientific Reviewer - Brief interventions for adolescent alcohol use Patient-Centered Outcomes Research Institute (PCORI)
2022	Scientific Reviewer - Interventions Targeting Mental Health in Individuals with Intellectual and Developmental Disabilities PCORI

Administrative Leadership at CUIMC and NYP

2025 - present	Doctoral Methods Exam Committee
2024 - present	Research IT and Computing at CUIMC Advisory Committee
2020 - 2025	Epidemiology Doctoral Admissions Committee
2020 - present	Epidemiology PhD Committee
2020 - 2024	Co-Director of Research, Columbia Center for Injury Science and Prevention

Society Positions

2019 - 2022	Society for Epidemiologic Research Education Committee
-------------	--

Memberships

Society for Epidemiologic Research, Society for Causal Inference, American Statistical Association

Editorial Service:

2022–Present	Editorial Board Member, Associate Editor, <i>Epidemiologic Methods</i>
2022–Present	Editorial Board Member, <i>Epidemiology</i>
2020	Co-Editor— <i>Epidemiologic Reviews</i> , Issue on Epidemiologic Methods

Reviewer

Addiction, Annals of Applied Statistics, Alcoholism: Clinical and Experimental Research, American Journal of Epidemiology, **Reviewer of the Year Awarded*, Biometrics, Biometrika, BMC Public Health, BMJ (British Medical Journal), Canadian Medical Association Journal, Drug and Alcohol Dependence, Drug and Alcohol Dependence Reports, Environment International, Epidemiology, **Exemplary Reviewer Awarded*, Epidemiologic Methods, Epidemiology and Psychiatric Sciences, Ethnicity and Health, JAMA, JAMA Psychiatry, Journal of the American Statistical Association, Journal of Clinical Epidemiology, Journal of Epidemiology and Community Health, Journal of the Royal Statistical Society, Series B, Journal of Statistical Software, Journal of Youth and Adolescence, Nature: Human Behavior, Observational Studies, PLOS ONE, PNAS (Proceedings of the National Academy of Sciences), Social Science & Medicine, Statistical Science

Fellowship and Grant Support (12.28 million of external funding as PI):

Active Research Funding

Leveraging harmonized data to improve external validity and efficiency of clinical trials for treating opioid use disorder (Miles and Rudolph)

Role on Project: **Co-Principal Investigator**

Dates: July 01, 2024 – June 30, 2029

Funding Agency: National Institute on Drug Abuse; R01DA059824

Funding: \$3,105,134 (total)

Description: Our overall objective is to develop methods that harness follow-up and other post-exposure measurements as potential proxies for outcomes that are systematically missing by study to deliver more precise estimates of causal treatment effects and facilitating the learning of treatment rules that maximize benefits and reduce harms.

Design and analysis advances to improve generalizability of clinical trials for treating opioid use disorder (Rudolph and Stuart)

Role on Project: **Principal Investigator (Contact MPI)**

Dates: September 15, 2022 – June 30, 2027

Funding Agency: National Institute on Drug Abuse; R01DA056407

Funding: \$3,110,616 (total)

Description: The major goals of this research are to unite design and analytic strategies to bridge MOUD trial evidence to target populations by: 1) empirically identifying those individuals not represented or under-represented in MOUD trials, and 2) accurately and reliably generalize expected MOUD effects on treatment retention to the adult Medicaid population, with the broad goal of optimizing the generalizability and policy-relevance of future clinical trials.

Role of disability and pain in opioid overdose: mechanism and risk mitigation (Rudolph)

Role on Project: **Principal Investigator**

Dates: March 1, 2022 – January 31, 2027

Funding Agency: National Institute on Drug Abuse; R01DA053243

Funding: \$3,135,545 (total)

Description: The major goals of this research are to: 1) estimate the unique and joint contributions of physical disability and chronic pain conditions to opioid overdose risk and the extent to which pain management practices mediate these relationships; 2) develop novel statistical methods to transport mediated effects from one state to another, and 3) apply those methods to identify SUD and pain management treatment metrics that, if improved, may reduce both overall overdose risk associated with physical disability and chronic pain and disparities in overdose risk by racial/ethnic-gender subgroup.

Causal mediation analysis with machine learning to understand comparative treatment effects (Diaz, Rudolph)

Role on Project: **Co-Principal Investigator**

Dates: November 1, 2022 – February 28, 2027

Funding Agency: Patient-Centered Outcomes Research Institute (PCORI)

Funding: \$108,305 (subcontract direct costs, year 1)

Description: The major goals of this research are to: 1) develop non-parametric, optimal estimators for mediational heterogeneous direct and indirect effects for longitudinal studies, allowing for common real-world complexities, such as continuous or categorical exposures, multivariate mediators, and multiple timepoints; and 2) develop non-parametric, optimal estimators for complier heterogeneous mediational direct and indirect effects using instrumental variables to adjust for unmeasured confounding.

Using data science and causal inference to estimate community-level impact of policing on injuries and adverse childhood experiences (Branas, Torrats-Espinosa, Rudolph)

Role on Project: **Co-Principal Investigator**

Dates: August 01, 2026 – July 31, 2029

Funding Agency: Centers for Disease Control and Prevention. CE24-001, The Columbia Center for Injury Science and Prevention (CCISP); R49CE003555-01

Funding: \$4,249,918 (total)

Description: The Columbia Center for Injury Science and Prevention (CCISP). The mission of the Columbia Center for Injury Science and Prevention (CCISP) will be “Accelerating Equity through the Science of Safety”, leveraging the unique value of scientific inquiry in assembling a large group of university, community, and government partners to fast-track injury prevention research and programs with the greatest potential to equitably impact the safety and health of historically

marginalized communities. Dr. Rudolph will serve as Co-Principal Investigator of the project 4: Using data science and causal inference to estimate community-level impact of policing on injuries and adverse childhood experiences (ACEs) and assist with the research design, data analyses, and manuscript writing (Project PIs: Gerard Torrats-Espinosa and Kara Rudolph).

Building an unbiased pooled cohort for the study of lifecourse social and vascular determinants of Alzheimers Disease and Related Disorders (Zeki Al Hazzouri, Glymour)

Role on Project: Co-Investigator

Dates: 04/01/2021 – 03/31/2026

Funding Agency: NIA; R01AG072681

Funding: \$611,850 (year 1, direct)

Description: This study will combine eight data sources on lifecourse social and vascular risk factors for Alzheimer’s Disease and Related Dementias (ADRD) to create a large and diverse synthetic birth cohort (age 0 to 90) for research on ADRD.

SOAR: Smartphones for Opioid Addiction Recovery (Glimcher, Murphy, Rotrosen, Tofighi)

Role on Project: **Sub-Award PI**

Dates: 08/15/2021 – 05/31/2026

Funding Agency: NIDA; R01DA054220

Funding: \$23,541 (subaward, direct costs, year 1)

Description: We propose to: (1) test the hypothesis that our battery can be used to trigger dose adjustments before reuse events and that this has the effect of reducing reuse and relapse in medication-based OUD treatment; (2) examine the willingness of clinicians to employ this strategy; and (3) examine the cost-effectiveness of these adjustments.

The Impact of Drought on Arsenic Exposure and Cardiometabolic Outcomes in a Rural Aging Population (James, Gribble, Smith)

Role on Project: **Sub-Award PI**

Dates: 08/15/2021 – 05/31/2026

Funding Agency: NIEHS; R01ES032612

Funding: \$28,721 (subaward, direct costs, year 1)

Description: This community-engaged project in San Luis Valley, Colorado seeks to identify cardiometabolic disease risks posed by drought through arsenic for elderly Hispanic and non-Hispanic white adult men and women, through interdisciplinary team science bringing together hydrogeological and epidemiological modeling.

The contribution of adult child socio-economic status to parents’ risk and outcomes of Alzheimer’s disease and related dementias (ADRDs) in cross-national settings (Torres)

Role on Project: **Sub-Award PI**

Dates: 09/01/2021 – 08/31/2026

Funding Agency: NIA; R01AG072448

Funding: \$3,706,808 (total award amount, including indirect costs)

Description: The overall goal of this proposal is to evaluate the “upward” intergenerational influence of adult child educational attainment on older parents’ cognitive decline, dementia risk, and outcomes after dementia onset using global population-based data and applying quasi-experimental

and advanced epidemiologic methods for causal inference and mediation.

Historical social and environmental determinants of memory decline and dementia among U.S. older adults (Mayeda, Casey)

Role on Project: **Sub-Award PI**

Dates: 07/01/2021 – 06/30/2026

Funding Agency: NIA; R01AG074359-01

Funding: \$376,408

Description: Evaluate the effects of early-life community-level social and environmental factors on late-life AD/DRD and the extent to which these factors contribute to racial disparities on AD/DRD in a nationally representative sample.

A nationwide case-control study of firearm violence prevention tactics and policies in K-12 schools (Branas)

Role on Project: Co-investigator

Dates: 07/01/2021 – 06/30/2026

Funding Agency: NICHD; R01HD103894

Funding: \$3,924,827

Description: A nationwide study of the impact of school safety tactics/policies on school shootings and student disciplinary actions in order to reduce gun violence in K-12 public schools, create safe learning environments, and promote healthy experiences for children across disparate school communities.

Community violence and disparities in maternal and infant health: impacts and mechanisms (Ahern)

Role on Project: **Sub-Award PI**

Dates: March 1, 2020 – February 28, 2026

Funding Agency: National Institute on Child Health; R01HD098138

Funding: \$87,012

Description: The goal of this project is to determine the complex mechanism by which the community environment may shape maternal and infant health disparities.

Pending Support as PI, fundable score

Using data fusion to inform personalized protocols to optimally treat opioid use disorder (Rudolph, Diaz, Shulman)

Role on Project: **Principal Investigator (Contact MPI)**

Dates: July 1, 2025 – June 30, 2030

Funding Agency: National Institute on Drug Abuse; R01DA063973

Description: The major goal of this research is to inform the development of an evidence-based, personalized protocol for the treatment of opioid use disorder. We will apply data fusion methods to 7 large randomized clinical trials of medications for opioid use disorder, and estimate risk of relapse under both pre-specified and data-adaptively learned longitudinal treatment strategies.

Past Support

Does Tobacco Social Media Marketing Alter Adolescent Risk Perceptions and Use? Longitudinal Data-Adaptive Estimators and Causal Inference to Enhance Understanding (Harrell)

Role on Project: Co-Investigator

Dates: September 1, 2023 – August 31, 2025

Funding Agency: National Cancer Institute, R21CA287457

Funding: \$240,656 (total subaward)

Description: The major goals of this project are to use state-of-the-art techniques to examine the roles of e-cigarette social media marketing on adolescent e-cigarette risk perceptions and use.

Using data science and causal inference to estimate the community-level impact of police behavior on psychological distress: the case of no-knock search warrants in Chicago (Torrats-Espinosa)

Role on Project: Co-Investigator

Dates: January 1, 2022 – December 31, 2024

Funding Agency: Columbia University, Data Science Institute

Funding: \$25,000 (direct)

Description: We propose to create a novel linkage of police administrative records that capture highly detailed information on all search warrants that the Chicago Police Department executed 2012-2020. Harnessing these data, we will document spatial and temporal patterns of search warrant use across Chicago neighborhoods.

Interventions to reduce opioid overdose: transportability of evidence-based approaches through agent-based modeling (Branas)

Role on Project: Co-Investigator

Dates: August 1, 2021 – July 31, 2025

Funding Agency: Centers for Disease Control and Prevention; R49CE003094

Funding: \$483,947 (direct)

Description: The goal of this research is to model how interventions affect opioid overdose and to transport these models across US communities.

Mechanisms linking neighborhood poverty to problematic adolescent drug use (Rudolph)

Role on Project: **Principal Investigator**

Dates: March 15, 2018 – December 31, 2024

Funding Agency: National Institute on Drug Abuse; R00DA042127

Funding: \$745,872 (direct)

Description: The major goals of this research are to: 1) advance understanding of how neighborhood and school act together to influence problematic drug use among adolescents, including how these mechanisms differ across adolescent subgroups and places, and 2) develop a flexible statistical method to predict intervention mechanism effects in new target populations, taking into account population composition.

Harnessing big data and machine learning to learn optimal, individualized dynamic treatment rules to prevent Opioid Use Disorder relapse (Rudolph)

Role on Project: **Principal Investigator**

Dates: January 1, 2021 – December 31, 2023

Funding Agency: Columbia University, Data Science Institute

Funding: \$150,000 (direct)

Description: Pharmacologic treatment of opioid use disorder (OUD) is complicated by the likely absence of a one-size-fits-all best approach; rather, “optimal” dose and dose adjustment are hypothesized to depend on person-level factors, including factors that change over time, reflecting how well the individual is responding to treatment. We propose to use harmonized data from multiple existing clinical trials with natural variability in OUD medication dose adjustments over time to 1) learn optimal dosing strategies and 2) estimate the extent to which such optimal dosing strategies could reduce risk of treatment drop-out and relapse.

Mechanisms underlying differential effects of neighborhood poverty on problematic adolescent drug use (Rudolph)

Role on Project: **Principal Investigator**

Dates: August 1, 2016 – November 30, 2017

Funding Agency: National Institute on Drug Abuse; K99DA042127

Funding: \$308,828

Description: The major goals of this research are to: 1) advance understanding of how neighborhood and school act together to influence problematic drug use among adolescents, including how these mechanisms differ across adolescent subgroups and places, and 2) develop a flexible statistical method to predict intervention mechanism effects in new target populations, taking into account population composition.

Antimicrobial Resistant E.coli before and after CA SB 27(ARES): A natural experiment (Tartoff)

Role on Project: Co-Investigator

Dates: May 9, 2017 – April 30, 2022

Funding Agency: National Institute of Environmental Health Sciences; R01AI130066

Funding: \$109,388

Description: The major goal of this project is to estimate the extent to which a statewide policy to reduce antibiotic use in livestock production affects antibiotic-resistant infections in humans. My responsibility will be to advise on the statistical design and analysis for one of the aims.

Evaluation of social policies to reduce intimate partner violence and improve child health in low- and middle-income countries (Richardson)

Role on Project: Co-Mentor

Dates: 04/01/2021 – 03/31/2023

Funding Agency: NICHD; K99HD104896-01

Funding: \$121,150

Description: We will evaluate the effect of social policies that protect and support women on reductions in intimate partner violence (IPV) and improvements in the health of their children under 5 years of age in LMICs.

The health and social consequences of national marijuana legalization (Cerde)

Role on Project: Co-Investigator

Dates: July 1, 2016 – June 30, 2020

Funding Agency: National Institute on Drug Abuse; R01DA040924

Funding: \$260,182

Description: This is a pre/post commercial and non-commercialization (regulation) of marijuana that compares changes in marijuana use, use of other drugs, and increased fatalities between intervention and control sites.

Preventing firearm violence: An evaluation of urban blight removal in high risk communities (Kagawa)

Role on Project: **Sub-Award PI**

Dates: January 1, 2018 – December 31, 2020

Funding Agency: National Institute of Justice; 2017-IJ-CX-0021

Funding: \$351,523

Description: Longitudinal, observational study to identify the impact that demolishing or rehabilitating vacant and decaying buildings in urban areas has on firearm violence and other crimes and to examine the heterogeneity of effects by neighborhood and property type in order to estimate the context in which these property interventions may have the most impact on firearm violence and other crimes.

Examining the synergistic effects of cannabis and prescription opioid policies on chronic pain, opioid prescribing, and opioid overdose (Cerde, Martins)

Role on Project: Co-Investigator

Dates: January 1, 2019 – November 30, 2023

Funding Agency: National Institute on Drug Abuse

Funding: \$94,847

Description: The goal of this project is to examine the extent to which various measures of opioid use, abuse, overdose, and disorders are affected by the enactment of more restrictive prescription opioid policies and less restrictive cannabis laws.

Educational Contributions

Specific Courses

2022–Present	Instructor - Applying the causal roadmap to single timepoint and longitudinal data Department of Epidemiology Columbia University, New York, NY <i>Notes:</i> Developed a new full semester, 3 credit, required and final course in the Epi Methods series for PhD students
2021–Present	Instructor - Introduction to Causal Inference with Longitudinal Data EpiSummer Columbia University, New York, NY <i>Notes:</i> Developed 4-week summer asynchronous course (20 total hours)
2024–Present	Instructor - Modified Treatment Policies Workshop Society for Epidemiologic Research American Causal Inference Conference <i>Notes:</i> Co-Developed 4 hour annual workshop for the Society for Epidemiologic Research annual meeting and American Causal Inference Conference. Materials are here: https://beyondtheate.com/
2021–Present	Instructor - Causal Mediation Workshop Society for Epidemiologic Research <i>Notes:</i> Co-Developed 4 hour annual workshop for the Society for Epidemiologic Research annual meeting. This workshop broke the record for registration and attendance, capped at 100 registrants. Materials are here: https://code.nimahejazi.org/causal_mediation_workshops/
2019	Instructor - Critical Thinking in Epidemiology Epidemiology Graduate Group University of California, Davis, Davis, CA
2017	Instructor - Epidemiology Journal Club for Doctoral Students Division of Epidemiology University of California, Berkeley School of Public Health, Berkeley, CA

Instructional Lectures, Local

- 2025 Florida's red flag gun law and firearm and non-firearm homicide and suicide mortality rates, Columbia University, Injury Epidemiology Unit Seminar Series, New York, NY.
- 2023 Independent and joint contributions of physical disability and chronic pain to incident opioid use disorder and opioid overdose among Medicaid patients, Columbia University, Psychiatric Epidemiology Training Program Seminar Series, New York, NY.
- 2022 Two strategies for reducing opioid use disorder relapse, Columbia University, Department of Psychiatry, Addiction Fellows Lecture Series, New York, NY.
- 2021 Understanding one-size-does-not-fit-all nuances in substance use research, Columbia University, Department of Epidemiology, Chronic Disease Epidemiology Seminar Series, New York, NY.
- 2021 Understanding one-size-does-not-fit-all nuances, Columbia University, Columbia Political Methodology Colloquium, New York, NY.
- 2021 Longitudinal G-Computation and its Practical Use, Columbia University, Department of Epidemiology, Applications of Epidemiologic Research Methods II course, New York, NY.
- 2020 Explaining differential effects of medication for opioid use disorder using a novel approach incorporating mediating variables, Columbia University, Department of Psychiatry, Addiction Fellows Lecture Series, New York, NY.
- 2020 Understanding reasons for differences in intervention effects across sites, Columbia University, Department of Biostatistics, Departmental Seminar Series, New York, NY.
- 2020 Introduction to Causal Mediation Analysis, CTSA Biostatistics, Epidemiology and Research Design (BERD) Biostatistics in Action: Tips for Clinical Researchers Spring 2020 Lecture Series, New York, NY.
- 2020 Longitudinal G-Computation and its Practical Use, Columbia University, Department of Epidemiology, Applications of Epidemiologic Research Methods II course, New York, NY.
- 2020 Causal mediation analysis: review of approaches and application to explain differences in opioid treatment responsiveness, Columbia University, Psychiatric Epidemiology Training Program Seminar Series, New York, NY.
- 2019 Transporting Stochastic Direct and Indirect Effects to New Populations, Columbia University, Causal Inference Learning Group, New York, NY.
- 2017 Causal Mediation Analysis, University of California, Berkeley School of Public Health, Causal Inference II Course, Berkeley, CA.
- 2016 Synthetic control group approach for estimating policy effects, University of California, San Francisco, Methods for Evaluating Social Policy Effects on Health, San Francisco, CA.
- 2015 What works in Boston may not work in Los Angeles: Understanding site differences and generalizing effects from one site to another, University of California, Berkeley School of Education, the Berkeley Evaluation and Assessment Research Center, Berkeley, CA.

- 2015 Applying Targeted Maximum Likelihood Estimation, University of California, San Francisco, Doctoral Seminar in Epidemiology and Biostatistics, San Francisco, CA.
- 2015 Instrumental Variables, University of California, Berkeley School of Public Health, Advanced Epidemiology Seminar, Berkeley, CA.

Advising and Mentorship

Postdoctoral Advising and Mentorship

Name	Year	Department	Type of Advising
Oliver Hines	2025–Present	Epidemiology	Postdoctoral advisor (primary advisor, co-advised by Caleb Miles)
Taehyeon Koo	2025–Present	Epidemiology	Postdoctoral advisor (primary advisor, co-advised by Elizabeth Stuart)
Harsh Parikh	2023–2025	Biostatistics Tenure-track Assistant Professor of Biostatistics at Yale University as of July 2025	Postdoctoral advisor (secondary, primary advisor is Elizabeth Stuart)
Rachael Ross	2023–Present	Epidemiology Received a perfect score of 10 on her K99 application, February 2025	Postdoctoral advisor (primary, secondary advisor is Elizabeth Stuart)
Brian Gilbert	2023–2024	Biostatistics Mathematical Statistician at the US Food and Drug Administration	Postdoctoral advisor (secondary, primary advisor was Ivan Diaz)
Lina Montoya	2023–Present	Biostatistics, University of North Carolina Assistant Professor in the School of Data Science and Society and Department of Biostatistics at the University of North Carolina	Postdoctoral K99 Advisor (secondary)

Postdoctoral Advising and Mentorship, continued

Name	Year	Department	Type of Advising
Katrina Kezios	2023–Present	Epidemiology Tenure-track Assistant Professor in the Department of Epidemiology at Boston University	Postdoctoral K99 Advisor (secondary)
Ilan Ceran-Turoff	2021–2023	Epidemiology	Postdoctoral Advisor (took over advising role after his advisor left Columbia)
Thang Vo	2021–2023	Department of Epidemiology and Biostatistics at University of Pennsylvania Junior Professor of Biostatistics, Universite Paris-Est Creteil	Mentored on 2 research projects during his postdoc
Ryan Sultan	2021–2022	Psychiatry Assistant Professor of Clinical Psychiatry at Columbia University	K23 Advisor (secondary)
Tarlise Townsend	2020–2022	Department of Epidemiology at New York University	Mentored her during her postdoc and funded her on R01DA053243 (PI: Rudolph) until her death
Robin Richardson	2020–2022	Epidemiology Assistant Professor in the Department of Epidemiology at Emory University	Postdoctoral K99 Advisor (secondary)

Doctoral Advising and Mentorship

Name	Year	Department	Type of Advising
Safiyah Sirota	2025-Present	Biostatistics	PhD Dissertation Committee member
Allison Perry	2023-2024	Epidemiology, New York University	PhD Committee member
Erik Jorgenson	2020-2025	Epidemiology	PhD Dissertation Chair
Chris Crow	2024-Present	Epidemiology	PhD Dissertation Committee
Anton Kociolek	2024-Present	Epidemiology	PhD Dissertation Chair
Amy Pitts	2023-2025	Biostatistics	PhD Dissertation Committee member
Nina Flores	2023-Present	Environmental Health	Mentor on methodologic components of her student research projects
Autumn Clemons	2023-Present	Epidemiology	F award mentor
Neal Jawadekar	2022-2025	Epidemiology	PhD Dissertation Chair, F award mentor
Anna Krasnova	2021-2024	Epidemiology	PhD Dissertation Advisor
Catherine Gimbrone	2021-Present	Epidemiology	PhD Advisor
Alex Perlmutter	2020-2023	Epidemiology	PhD Dissertation Advisor
Debbie Huang	2020-2021	Epidemiology	PhD Dissertation Committee
John Pamplin	2020-2020	Epidemiology	PhD Dissertation Committee
Elizabeth Kinnard	2018-2019	Epidemiology, UC Berkeley	Mentored and funded her as a student employee while she was an MPH student in the Department of Epidemiology at University of California, Berkeley and I was an Assistant Professor at UC Davis.
Dana Goin	2015-2019	Epidemiology, UC Berkeley	Mentored while she was a PhD student at University of California, Berkeley and I was a postdoctoral fellow and then an Assistant Professor. I am including papers from projects where I mentored her below.
Katherine Elliott Colson	2015-2019	Epidemiology, UC Berkeley	Mentored while she was a PhD student at University of California, Berkeley and I was a postdoctoral fellow. I am including the particular project where I mentored her below.

Masters Advising and Mentorship

Name	Year	Department	Type of Advising
Kaylin De Silva	2024–2025	Epidemiology	Masters Thesis Advisor
Carlos Martinez-Mejia	2024–2025	Epidemiology	Masters Thesis Advisor
Daniel Gilchrist	2023–2024	Epidemiology	Masters Thesis Advisor
Rebecca Blair-Stevenson	2023–2024	Epidemiology	Masters Thesis Advisor
Floriana Milazzo	2022–2023	Epidemiology	Hired upon MPH graduation and mentored as a data analyst (now in medical school post-baccalaureate)
Katherine Hoffman	2022–2023	Epidemiology	Hired and mentored as a data analyst
Yunlin Zhou	2022–2023	Biostatistics	Masters Practicum Advisor
Mackenzie Frost	2022–2023	Epidemiology	Masters Thesis Advisor
Andrew Nakamura	2022–2023	Epidemiology	Masters Thesis Advisor
Emily Kiernan	2022–2023	Epidemiology	Masters Thesis Advisor
Nicholas Williams	2021–present	Epidemiology	Hired and mentored as a data analyst.
Hannah Totte	2021–2022	Epidemiology	Masters Thesis Advisor
Alicia Singham	2021–2022	Epidemiology	Mentored and funded her as a student employee while she was an MPH student in the Department of Epidemiology at Columbia
Goodwin			
Xinyan Zhou	2021–2022	Epidemiology	Masters Thesis Advisor
Matthew Russell	2021–2022	Epidemiology	Masters Practicum Advisor
Yue Lai	2020–2021	Biostatistics	Masters Practicum Advisor
Riona Morgan	2020–2021	Epidemiology	Masters Thesis Advisor
Madison Wempe	2020–2021	Epidemiology, London School of Hygiene and Tropical Medicine	Masters Thesis Advisor
Matthew Curran	2019–2020	Epidemiology	Masters Thesis Advisor
Alexis Colangelo	2019–2020	Epidemiology	Masters Thesis Advisor

Publications

* indicates senior authorship

‡ indicates mentee. † is included at the beginning of the citation and at the name of the mentee.

Original, Peer Reviewed Articles

1. **Rudolph, K.E.**, Inose, S., Williams, N.T., Diaz, I., Ross, R.K., Bisaga, A., Shulman, M. Thresholds for adjunctive medication usage and probability of initiating injectable naltrexone. *Addiction*, In Press, 2025.
2. *‡Ross, R., Diaz, I., Pitts, A., Stuart, E. A., **Rudolph, K.E.** Transporting results from a trial to an external target population when trial participation impacts adherence. *Epidemiology*, In Press, 2025.
3. †Gilbert, B., Hoffman, K.L., Williams, N.T., **Rudolph, K.E.**, Diaz, I. Identification and estimation of mediational effects of longitudinal modified treatment policies. *Biostatistics*, In Press, 2025.
4. *‡Perry, A., Krawczyk, N., Samples, H., Martins, S.S., Hoffman, K.L., Williams, N.T., Hung, A., Ross, R., Doan, L., Cerda, M., **Rudolph, K.E.** Opioid dose, duration, and risk of use disorder in Medicaid patients with musculoskeletal pain. *Pain Medicine*, In Press, 2025.
5. *‡Inose, S., Williams, N.T., Hoffman, K.L., Perry, A., Diaz, I., **Rudolph, K.E.** Reducing prescription opioid dose and duration to reduce risk of opioid use disorder among patients with musculoskeletal pain. *Epidemiology*, 36(6), 811–819, 2025.
6. **Rudolph, K.E.**, Inose, S., Williams, N.T., Hoffman, K.L., Forrest, S.E., Ross, R.K., Milazzo, F., Diaz, I., Doan, L., Samples, H., Olfson, M., Crystal, S., Cerda, M., Gao, Y.N. Mediation of chronic pain and disability on opioid use disorder risk by pain management practices among adult Medicaid patients, 2016-2019. *Am J Epidemiol.*, In Press, 2025.
7. **Rudolph, K.E.**, Williams, N.T., Stuart EA, Diaz, I. Improving efficiency in transporting average treatment effects. *Biometrika*, In Press, 2025.
8. †Parikh, H., Nguyen, T.Q., Stuart, E.A., **Rudolph, K.E.**, Miles, C.M. A Cautionary Tale on Integrating Studies with Disparate Outcome Measures for Causal Inference. *NeurIPS*, In Press, 2025.
9. *‡Williams, N.T., Liu, R., Hoffman, K.L., Forrest, S.E., Diaz, I., **Rudolph, K.E.** Two-stage targeted minimum-loss based estimation for non-negative two-part outcomes. *Journal Statistical Methods in Medical Research*, 34(7), 1431–1441, 2025.
 - Co-last author
10. *Webster-Clark, M., Breskin, A., Duchesneau, E.D., **Rudolph, K.E.** Transporting: What Is It and How Do You Do It? *Current Epidemiology Reports*, In Press, 2025.

11. * Doan, L.V., Hung, A.M, Williams, N.T., Olfson, M., **Rudolph, K.E.** Risk of Opioid Use Disorder in Surgical Patients with Medicaid and Associations with Prescription Opioid Dose and Duration, *Journal of Pain Research*, In Press, 2025.
12. Doonan, S.M., Wheeler-Martin, K., Davis, C., Mauro, C., Bruzelius, E., Crystal, S., Mannes, Z., Gutkind, S., Keyes, K.M., **Rudolph, K.E.** and Samples, H. How do restrictions on opioid prescribing, harm reduction, and treatment coverage policies relate to opioid overdose deaths in the United States in 2013–2020? An application of a new state opioid policy scale. *International Journal of Drug Policy*. 137, p.104713, 2025.
13. Lu, H., Li, F., Lesko, C.R., Fink, D.S., **Rudolph, K.E.**, Harhay, M.O., Rentsch, C.T., Fiellin, D.A. and Gonsalves, G.S. Four targets: an enhanced framework for guiding causal inference from observational data. *Int J Epidemiol*, 54(1), p.dyaf003, 2025.
14. *[‡]A. S. Perlmutter[‡], K. M. Keyes, D. Giovenco, S. S. Martins, **K. E. Rudolph**. “Does nicotine vaping affect cannabis and other substance initiation from adolescence into young adulthood?” *Am J Epidemiol*, 194(5), 1314-1321, 2025.
 - Mentee, Alex Perlmutter, led this work.
15. Martins, S.S., Bruzelius, E., Mauro, C.M., Santaella-Tenorio, J., Boustead, A.E., Wheeler-Martin, K., Samples, H., Hasin, D.S., Fink, D.S., **Rudolph, K.E.** and Crystal, S. The relationship of medical and recreational cannabis laws with opioid misuse and opioid use disorder in the USA: Does it depend on prior history of cannabis use? *International Journal of Drug Policy*, 136, p.104687, 2025.
16. Liu, E.F., Jung S., **Rudolph, K.E.**, Mujahid, M.S., Dow, W.H., Goin, D.E., Morello-Frosch, R.A., Ahern, J. Racial and ethnic differences in the relationship of SARS-CoV-2 infection and the COVID-19 pandemic period with perinatal health in California. *Epidemiology*, 36(5), 668–676, 2025.
17. *[‡]Krasnova, A., Duncan D.T., Kane, J., cheslack-Postava, K., Tom, S.E., **Rudolph, K.E.**. Effect of Voucher Receipt on Perceived Discrimination in Boys and Girls in the Moving to Opportunity Study. *American Journal of Epidemiology*, In Press, 2025.
18. *[‡]Parikh, H, Ross, R., Stuart, E.A., **Rudolph, K.E.** “Who are we missing?” A principled approach to characterizing the underrepresented population. *Journal of the American Statistical Association, Applications and Case Studies*. In Press, 2025.
19. [‡]D. Bezuidenhout[‡], S. Forthal[‡], **K. E. Rudolph**, M.R. Lamb. Single World Intervention Graphs (SWIGs): A Practical Guide. *American Journal of Epidemiology*, 194(7), 2047–2052, 2025.
20. Z. L. Mannes, M. Nowels, C. Mauro, S. Cook, K. Wheeler-Martin, S. Gutkind. E. Bruzelius, S. M. Doonan, S. Crystal, C. S. Davis, H. Samples, D. S. Hasin, K. M. Keyes, **K. E. Rudolph**, M. Cerdá, S. S. Martins. The Combined Relationship of Prescription Drug Monitoring Program Enactment and Medical Cannabis Laws with Chronic Pain-Related Healthcare Visits. *Journal of General Internal Medicine*, 40(5), 1030-1038, 2025.

21. M. Cerdá, K. Wheeler-Martin, E. Bruzelius, C. M. Mauro, S. Crystal, C. S Davis, S. Adhikari, J. Santaella-Tenorio, K. M. Keyes, K. E. Rudolph, D. Hasin, S. S. Martins. The role of prescription opioid and cannabis supply policies on opioid overdose deaths. *Am J Epidemiol*, 194(3), 791–801, 2025.
22. **Rudolph, K.E.**, Williams, N.T., Diaz, I., Forrest, S., Hoffman, K.L., Samples, H., Olfson, M., Doan, L., Cerda, M. and Ross, R.K, 2024. Pain management treatments and opioid use disorder risk in Medicaid patients. *Am J Prev Med*, 67(6):878–86, 2024.
23. *[†]R. Ross[‡], S. Inose, M. Shulman, E. V. Nunes, L. C. Zalla, A. K. Burlew, **K. E. Rudolph**. “Variation in opioid agonist dosing in clinical trials by race and ethnicity,” *JAMA Network Open*, 2024; 7(10):e2436612–e2436612.
 - Mentee, Rachael Ross, led this work.
24. [†]R. Ross[‡], **K. E. Rudolph**, C. Shover. “Prescribing of extended release buprenorphine injection for Medicaid beneficiaries, 2018–2022,” *Addiction*, 119(12):2211–2215, 2024.
 - Mentee, Rachael Ross, led this work.
25. *[†]C. Gimbrone, **K. E. Rudolph**. Florida’s red flag gun law and firearm and non-firearm homicide and suicide mortality rates. *JAMA*, 332(11):931–933, 2024.
 - Mentee, Catherine Gimbrone, led this work.
26. *[†]R. K. Ross, E. V. Nunes, M. Olfson, M. Shulman, N. Krawczyk, E. A. Stuart, **K. E. Rudolph**. Comparative effectiveness of extended release naltrexone and sublingual buprenorphine for treatment of opioid use disorder among Medicaid patients. *Addiction*, 119(11):1975–86, 2024.
 - Mentee, Rachael, led this work.
27. **K. E. Rudolph**, N.T. Williams, I. Diaz. Practical causal mediation analysis: extending nonparametric estimators to accommodate multiple mediators and multiple intermediate confounders. *Biostatistics*, 25(4):997–1014, 2024.
28. S. Jung, E. F. Liu, D. E. Goin, **K. E. Rudolph**, M. S. Mujahid, W. H. Dow, J. Ahern. The COVID-19 pandemic period, SARS-CoV-2 infection and perinatal health. *JAMA Network Open*, 7(5): e2410696–e2410696, 2024.
29. J. Schraw, **K. E. Rudolph**, C. Shumate, M. Gribble. Prevalence of Congenital Anomalies Before and After Implementation of a Novel Wastewater Treatment Technology in Texas: An Augmented Synthetic Control Method Analysis Utilizing Data from a Population-Based Birth Defects Registry. *International Journal of Population Data Science*, 9(5), 2024.
30. *[†]I. Cerna-Turoff[‡], J. A. Casey, K. Keyes, D. Malinsky (co-senior author), **K. E. Rudolph** (co-senior author), “Longitudinal patterns of natural hazard exposures and anxiety and depression symptoms among young adults in four low- and middle-income countries”, *Scientific Reports*, 14(1): 10538, 2024.

- Mentee, Ilan Cerna-Turoff, led this work.

31. C. Dharma, K. M. Keyes, **K. E. Rudolph**, C. Shrader, Y. Chen, J. Schneider, D. T. Duncan. Adverse childhood experiences among black sexually minoritized men and Black transgender women in Chicago. *International Journal for Equity in Health*, 23(1): 74
32. K. M. Keyes, D. Pakserian, **K. E. Rudolph**, G. Salum, E. A. Stuart. Population Neuroscience: Understanding Concepts of Generalizability and Transportability and Their Application to Improving the Public's Health. In: *Current Topics in Behavioral Neurosciences*. 2024.
33. N. Buttar, S. Rajan, L. Klarevas, S. J. Prins, J. Heinze, K. Cheung, **K. E. Rudolph**, M. Goyal, A. Zeoli, C. C. Branas. Protocol for a nationwide case-control study of firearm violence prevention tactics and policies in K-12 schools. *PLoS One*, 19(5): e0302622.
34. [‡]K. L. Kezios, S. C. Zimmerman, P. T. Buto, **K. E. Rudolph**, S. Calonico, A. Zeki Al Hazzouri, M. M. Glymour. Overcoming data gaps in life course epidemiology by matching across cohorts. *Epidemiology*, 35(5), 610–17, 2024.
35. ^{*‡}K. L. Hoffman[‡], D. Salazar-Barreto, N. T. Williams, I. Díaz, **K. E. Rudolph**. “Studying Continuous, Time-varying, and/or Complex Exposures Using Longitudinal Modified Treatment Policies,” *Epidemiology*, 35(5): 667–75, 2024.

- Mentee, Katherine Hoffman, led this work.

36. [‡]N. M. Flores[‡], V. Do, A. J. Northrop, M. Gordon, L. Y. Jiang, **K. E. Rudolph**, D. Hernandez, J. A. Casey. “Powerless in the Storm: Severe Weather-Driven Power Outages in New York State, 2017-2020.” *PLOS Climate*, 3(5), e0000364, 2024.

- Mentee, Nina Flores, led this work.

37. J. M. Schraw, **K. E. Rudolph**, C. J. Shumate, M. O. Gribble. “Direct potable reuse and birth defects prevalence in Texas: an augmented synthetic control method analysis of data from a population-based birth defects registry.” *Environmental Epidemiology*, 8 (2), e300, 2024.
38. **K. E. Rudolph**, N. T. Williams, I. Diaz, “Using instrumental variables to address unmeasured confounding in causal mediation analysis.” *Biometrics*, 80 (1), ujad037, 2024.
39. ^{*‡}K. L. Hoffman[‡], F. Milazzo[‡], N. T. Williams, H. Samples, M. Olfson, I. Díaz, L. Doan, M. Cerda, S. Crystal, **K. E. Rudolph**. “Independent and joint contributions of physical disability and chronic pain to incident opioid use disorder and opioid overdose among Medicaid patients.” *Psychological Medicine*, 54 (7), 1419-1430, 2024.

- Mentee, Katherine Hoffman, led this work.

40. ^{*‡}N. T. Williams[‡], I. Diaz, **K. E. Rudolph**, “Learning Optimal Dynamic Treatment Regimes from Longitudinal Data.” *Am J Epidemiol*, 193(12): 1768–75, 2024.

- Mentee, Nick Williams, led this work.
41. [‡]**K. E. Rudolph**, F Milazzo[‡], N. T. Williams, A. Venkataramani, R. O'Brien, "Has the opening of Amazon fulfillment centers affected demand for disability insurance?" PloS One, 18(11), e0294453, 2023.
 42. **K. E. Rudolph**, N. T. Williams, J. Antonelli, C. H. Miles, I. Diaz. "All models are wrong, but which are useful? Comparing parametric and nonparametric estimation of causal effects in finite samples." Journal of Causal Inference, 11(1), 20230022, 2023.
 43. **K. E. Rudolph**, N. T. Williams, I. Diaz. "Efficient and flexible estimation of natural direct and indirect effects under intermediate confounding and monotonicity constraints." Biometrics, 79 (4), 3126-3139, 2023.
 44. **K. E. Rudolph**, N. T. Williams, I. Díaz, S. X. Luo, J. Rotrosen, and E. V. Nunes, "Optimally choosing medication type for patients with opioid use disorder." American Journal of Epidemiology, vol. 192, no. 5, pp. 748-756, 2023.
 - Chosen for an invited commentary and associated response.
 - **K. E. Rudolph**, N. T. Williams, I. Díaz, S. X. Luo, J. Rotrosen, and E. V. Nunes, "Rudolph et al. Respond to "Mathematization of Epidemiology." American Journal of Epidemiology, vol. 192, no. 5, pp. 760-761, 2023.
 45. *I. Diaz, N. T. Williams, **K. E. Rudolph**. "Efficient and flexible mediation analysis with time-varying mediators, treatments, and confounders." Journal of Causal Inference, 11(1), 20220077, 2023.
 46. [‡]D. Huang[‡], E. Susser, **K. E. Rudolph**, K. M. Keyes. "Depression networks: a systematic review of the network paradigm causal assumptions." Psychological Medicine, 53(5):1665–1680, 2023.
 - Mentee, Debbie Huang, led this work.
 47. [‡]I. Cerna-Turoff[‡], L.G. Chillrud, K. E. Rudolph, J. A. Casey. (2023). "Standards in responsibly sharing cohort data for transparency and reproducibility: response to the Young Lives Study." International Journal of Epidemiology, dyad066.
 - Mentee, Ilan Cerna-Turoff, led this work.
 48. R. Cook, C. Foot, A. Onyebuchi, K. Humphreys, **K. E. Rudolph**, S. Luo, J. Tsui, X. Levander, P. T. Korthuis. "Estimating the impact of stimulant use on initiation of buprenorphine and extended-release naltrexone in two clinical trials and real-world populations." Addiction Science & Clinical Practice, vol. 18, article 11, 2023.
 49. [‡]J. R. Pamplin[‡], **K. E. Rudolph**, E. Susser, K. M. Keyes, L. Bates, "Investigating a paradox: towards better understanding the relationships between race, stress, and depression." Am J Epidemiol. 192 (11), 1845-1853, 2023.

- Mentee, John Pamplin, led this work.
50. [‡]N. Jawadekar[‡], **K. E. Rudolph**, M. Odden, K. Kezios, J. A. Stingone, S. Calonico, and A. Zeki Al Hazzouri, “Practical guide to honest causal forests for identifying heterogeneous treatment effects in a randomized setting.” *Am J Epidemiol*, 192(7):1155–1165, 2023.
- Mentee, Neal Jawadekar, led this work.
51. *J. A. Casey, S. Y. Tartof, M. F. Davis, M. E. Nachman, L. Price, C. Liu, L. Yu, V. Gupta, G. K. Innes, A. J. Pressman, and **K. E. Rudolph**, “Impact of a statewide livestock antibiotic use policy on resistance in human urinary tract infection: A synthetic control analysis.” *Environmental Health Perspectives*, vol. 131, no. 2, pp. 027007, 2023.
- The journal selected this paper as a “Science Selection”.
52. [‡]B. Kim[‡], W. M. Troxel, T. Dubowitz, G. P. Hunter, B. Ghosh-Dastidar, B. Chaix, **K. E. Rudolph**, C. N. Morrison, C. C. Branas, and D. Y. Duncan, “Neighborhood built environments and sleep health: A longitudinal study in low-income and predominantly African-American neighborhoods.” *Am J Epidemiol*, vol. 192, no. 5, pp. 736-747, 2023.
- Mentee, Byounjun Kim, led this work.
53. *R. Kagawa, B. Calnin, C. Smirniotis, M. Cerda, G. Wintemute, and **K. E. Rudolph**, “Effects of building demolitions on firearm violence in Detroit, Michigan.” *Preventive Medicine*, vol. 165, p. 107257, 2022.
54. J. M. Torres, Y. Yang, **K. E. Rudolph**, E. Meza, M. M. Glymour, and E. Courtin, “Adult child schooling and older parents’ cognitive outcomes in the Survey of Health, Aging and Retirement in Europe (SHARE): A quasi-experimental study.” *Am J Epidemiol*, vol. 191 no. 11, pp. 1906–1916, 2022.
55. **K. E. Rudolph** and I. Díaz, “When the ends do not justify the means: Learning who is predicted to have harmful indirect effects.” *Journal of the Royal Statistical Society, Series A*, vol. 185(S2), pp. 573–589, 2022.
56. [‡]**K. E. Rudolph**, N. T. Williams, A. T. Singham Goodwin[‡], M. Shulman, M. Fishman, I. Díaz, S. X. Luo, J. Rotrosen, and E. V. Nunes, “How different buprenorphine & methadone dosing strategies reduce risk of relapse in the treatment of opioid use disorder.” *Drug and Alcohol Dependence*, vol. 239, p. 109609, 2022.
- Tweeted by UCLA epidemiologist and writer Dr. Steffanie Strathdee (25,000 followers) as her weekly “shout out” to women in STEM.
57. [‡]**K. E. Rudolph**, M. Russell[‡], S. X. Luo, J. Rotrosen, and E. V. Nunes, “Under-representation of key demographic groups in opioid use disorder trials,” *Drug and Alcohol Dependence Reports*, 4, p. 100 084, 2022.
- Chosen as an Editor’s Pick

58. [‡]B. Kim[‡], B. Chaix, **K. E. Rudolph**, C. N. Morrison, C. C. Branas, and D. T. Duncan, “Neighborhoods and sleep health among adults: A systematic review.” *Sleep Health*, vol. 8, no. 3, pp. 322–333, 2022.
- Mentee, Byounjun Kim, led this work.
59. J. M. Torres, Y. Yang, **K. E. Rudolph**, and E. Courtin, “Increased adult child schooling and older parents’ health behaviors in Europe: A quasi-experimental study.” *Social Science and Medicine - Population Health*, vol. 19, pp. 101162, 2022.
60. [‡]**K. E. Rudolph**, C. E. Gimbrone[‡], C. Matthay, I. Díaz, C. S. Davis, K. Keyes, and M. Cerdá, “When effects cannot be estimated: Redefining estimands to understand the effects of naloxone access laws.” *Epidemiology*, vol. 33, no. 5, pp. 689–98, 2022.
- Won the *Rothman Prize* for the single best paper of the year.
61. A. Rivera-Aguirre, A. Castillo-Carniglia, H. Laqueur, **K. E. Rudolph**, S. Martins, J. Ramírez, R. Queirolo, and M. Cerda, “Does recreational cannabis legalization increase frequent and risky cannabis use? Evidence from Uruguay,” *Addiction*, vol. 117, no. 11, pp. 2866–2877, 2022.
62. ^{*‡}T. Townsend[‡], L. Hamilton, C. Davis, M. Cerda, and **K. E. Rudolph**, “Association of Good Samaritan laws with overdose mortality in Kentucky and Tennessee, overall and by race.” *Am J Epidemiol*, vol. 191, no. 10, pp. 1783–1791, 2022.
- Mentee, Tarlie Townsend, led this work.
 - For this paper, I developed a novel extension of the synthetic control approach.
63. [‡]B. Kim[‡], W. M. Troxel, T. Dubowitz, G. P. Hunter, B. Ghosh-Dastidar, B. Chaix, **K. E. Rudolph**, C. N. Morrison, C. C. Branas, and D. T. Duncan, “Mediating role of psychological distress in the associations between neighborhood social environments and sleep health.” *Sleep*, vol. 45, no. 8, pp. zsac087, 2022.
64. N. S. Hejazi, **K. E. Rudolph**, and I. Díaz, “Medoutcon: Nonparametric efficient causal mediation analysis with machine learning,” *Journal of Open Source Software*, vol. 7, no. 69, p. 3979, 2022.
65. N. S. Hejazi, **K. E. Rudolph**, M. J. van der Laan, and I. Díaz, “Nonparametric causal mediation analysis for stochastic interventional (in)direct effects.” *Biostatistics*, vol. 24, no. 3, pp. 686–707, 2023.
66. **K. E. Rudolph**, M. Shulman, M. Fishman, I. Díaz, J. Rotrosen, and E. V. Nunes, “Association between dynamic dose adjustment of buprenorphine for treatment of opioid use disorder and risk of relapse,” *Addiction*, vol. 117, no. 3, pp. 637–645, 2022.
67. I Schmid, **K. E. Rudolph**, T. Nguyen, H. Hong, M. Seamans, B. Ackerman, and E. A. Stuart, “Comparing the performance of statistical methods that generalize effect estimates from randomized controlled trials to much larger target populations.” *Communications in Statistics—Simulation and Computation*, vol. 51, no. 8, pp. 4326–4348, 2022.

68. **K. E. Rudolph**, I. Díaz, S. X. Luo, J. Rotrosen, and E. V. Nunes, “Optimizing opioid use disorder treatment with naltrexone or buprenorphine,” *Drug and Alcohol Dependence*, vol. 228, p. 109 031, 2021.
69. E. A. Stuart, I. Schmid, T. Nguyen, E. Sarker, A. Pittman, K. Benke, **K. E. Rudolph**, E. Badillo-Goicoechea, and J.-M. Leoutsakos, “Assumptions not often assessed or satisfied in published mediation analyses in psychology and psychiatry,” *Epidemiologic reviews*, vol. 43, no. 1, pp. 48–52, 2021.
70. M. Cerdá, K. Wheeler-Martin, E. Bruzelius, W. Ponicki, P. Gruenewald, C. Mauro, S. Crystal, C. S. Davis, K. Keyes, D. Hasin, **K. E. Rudolph**, S.S. Martins. “Spatiotemporal analysis of the association between pain management clinic laws and opioid prescribing and overdose deaths,” *American Journal of Epidemiology*, vol. 190, no. 12, pp. 2592–2603, 2021.
- Chosen as an article of the year
71. J. A. Casey, **K. E. Rudolph**, S. C. Robinson, K. Bruxvoort, E. Raphael, V. Hong, A. Pressman, R. Morello-Frosch, R. X. Wei, and S. Y. Tartof, “Sociodemographic inequalities in urinary tract infection in two large California health systems,” in *Open Forum Infectious Diseases*, vol. 8, no. 6, pp. ofab276, 2021.
72. S. S. Martins, E. Bruzelius, J. A. Stingone, K. Wheeler-Martin, H. Akbarnejad, C. M. Mauro, M. E. Marziali, H. Samples, S. Crystal, C. S. Davis, **K. E. Rudolph**, K. M. Keyes, D. S. Hasin, M. Cerdá, “Prescription opioid laws and opioid dispensing in U.S. counties: Identifying salient law provisions with machine learning,” *Epidemiology*, vol. 32, no. 6, pp. 868–876, 2021.
73. E. C. Matthay, K. Farkas, D. E. Goin, **K. E. Rudolph**, V. A. Pear, and J. Ahern, “Associations of firearm dealer openings with firearm self-harm deaths and injuries: A differences-in-differences analysis,” *PLoS one*, vol. 16, no. 3, e0248130, 2021.
74. M. Cerdá, N. Krawczyk, L. Hamilton, **K. E. Rudolph**, S. R. Friedman, and K. M. Keyes, “A critical review of the social and behavioral contributions to the overdose epidemic,” *Annual Review of Public Health*, vol. 42, pp. 95–114, 2021.
- Cited by World Health Organization on 01 Jan 2022.
75. S. Zimmerman, E. C. Matthay, **K. E. Rudolph**, D. E. Goin, K. Farkas, C. Rowe, and J. Ahern, “California’s mental health services act and mortality due to suicide, homicide, and acute effects of alcohol: A quasi-experimental study,” *American Journal of Epidemiology*, vol. 190, no. 10, pp. 2107–2115, 2021.
76. A. Nardone, **K. E. Rudolph**, R. Morello-Frosch, and J. A. Casey, “Redlines and greenspace: The relationship between historical redlining and 2010 greenspace across the United States,” *Environmental health perspectives*, vol. 129, no. 1, p. 017 006, 2021.
- This paper has been cited 112 times since 2021. It has generated 26 news stories. I designed the analysis, coded the analysis, and the led interpretation of results.

77. **K. E. Rudolph** and I. Diaz, “Efficiently transporting causal direct and indirect effects to new populations under intermediate confounding and with multiple mediators,” *Biostatistics*, vol. 23, no. 3, pp. 789–806, 2022.
78. **K. E. Rudolph**, I. Díaz, N. S. Hejazi, M. J. van der Laan, S. X. Luo, M. Shulman, A. Campbell, J. Rotrosen, and E. V. Nunes, “Explaining differential effects of medication for opioid use disorder using a novel approach incorporating mediating variables,” *Addiction*, vol. 116, no. 8, pp. 2094–2103, 2021.
79. [‡]**K. E. Rudolph**, C. Gimbrone[‡], and I. Díaz, “Helped into harm: Mediation of a housing voucher intervention on mental health and substance use in boys,” *Epidemiology*, vol. 32, no. 3, pp. 336–346, 2021.
80. **K. E. Rudolph**, J. Levy, and M. J. van der Laan, “Transporting stochastic direct and indirect effects to new populations,” *Biometrics*, vol. 77, no. 1, pp. 197–211, 2021.
81. **K. E. Rudolph**, O. Sofrygin, and M. J. van der Laan, “Complier stochastic direct effects: Identification and robust estimation,” *Journal of the American Statistical Association*, vol. 116, no. 535, pp. 1254–1264, 2021.
- JASA Theory & Methods is one of the top three statistics journals.
82. I. Diaz, N. Hejazi, **K. E. Rudolph**, and M. J. van der Laan, “Non-parametric efficient causal mediation with intermediate confounders,” *Biometrika*, vol. 108, no. 3, pp. 627–641, 2021.
83. P. M. Reeping, C. N. Morrison, **K. E. Rudolph**, M. K. Goyal, and C. C. Branas, “A comparison and analysis of seven gun law permissiveness scale,” *Injury Epidemiology*, vol. 8, no. 1, pp. 1–8, 2021.
84. J. M. Torres, U. A. Mitchell, O. Sofrygin, **K. E. Rudolph**, M. Lopez-Ortega, M. Z. Sharif, R. Wong, and M. M. Glymour, “Associations between spousal caregiving and health among older adults in Mexico: A targeted estimation approach,” *International Journal of Geriatric Psychiatry*, vol. 36, no. 5, pp. 775–783, 2021.
85. E. L. Ogburn, **K. E. Rudolph**, R. Morello-Frosch, A. Khan, and J. A. Casey, “A warning about using predicted values from regression models for epidemiologic inquiry,” *American Journal of Epidemiology*, vol. 190, no. 6, pp. 1142–1147, 2021.
- This article was selected for an invited commentary and response.
86. **K. E. Rudolph**, J. Levy, N. M. Schmidt, E. A. Stuart, and J. Ahern, “Using transportability to understand differences in mediation mechanisms across trial sites: Applying a novel estimation approach to a large-scale housing voucher experiment,” *Epidemiology*, vol. 31, no. 4, pp. 523–533, 2020.
87. [‡]**K. E. Rudolph**, D. E. Goin[‡], and E. A. Stuart, “The peril of power: A tutorial on using simulation to better understand when and how we can estimate mediating effects,” *American Journal of Epidemiology*, vol. 189, no. 12, pp. 1559–67, 2020.

- Chosen for an invited commentary by leader in the field, Tyler VanderWeele, and associated response:
 - —, “Rudolph et al. respond to “power in mediation analysis”.” *American Journal of Epidemiology*, vol. 189, no. 12, pp. 1571–2, 2020.
88. [‡]**K. E. Rudolph**, E. N. Kinnard[‡], A. E. Rivera Aguirre, D. E. Goin[‡], J. Feelemyer, D. Fink, and M. Cerda, “The relative economy and drug overdose deaths,” *Epidemiology*, vol. 31, no. 4, pp. 551–558, 2020.
89. [‡]D. E. Goin[‡], **K. E. Rudolph**, and J. Ahern, “Firearm violence and preterm birth: Evidence of stochastic mediation by pregnancy complications and health behaviors,” *Am J Epidemiol*, vol. 189, no. 8, pp. 820–831, 2020.
- Mentee, Dana Goin, led this work.
90. D. Paksarian, **K. E. Rudolph**, E. K. Stapp, G. P. Dunster, J. He, D. Mennitt, S. Hattar, J. A. Casey, P. James, and K. R. Merikangas, “Association of outdoor artificial light at night with mental disorders and sleep patterns among u.s. adolescents,” *JAMA Psychiatry*, vol. 77, no. 12, pp. 1266–1275, 2020.
- This paper has been cited 80 times since 2020. It has generated 44 news stories.
 - I co-led the statistical analysis.
91. *C. C. Branas, P. M. Reeping, and **K. E. Rudolph**, “Beyond gun laws—innovative interventions to reduce gun violence in the United States,” *JAMA psychiatry*, vol. 78, no. 3, pp. 243–244, 2021.
92. A. L. Nardone, J. A. Casey, **K. E. Rudolph**, D. Karasek, M. Mujahid, and R. Morello-Frosch, “Associations between historical redlining and birth outcomes from 2006 through 2015 in California,” *PloS one*, vol. 15, no. 8, e0237241, 2020.
- This paper has been cited 84 times since 2020. It has generated 168 news stories. I designed the analysis, coded the analysis, and the led interpretation of results.
93. H. Laqueur, A. Rivera, A. Shev, A. Castillo-Carniglia, **K. E. Rudolph**, J. Ramirez, S. Martins, and M. Cerda, “The impact of cannabis legalization in Uruguay on adolescent cannabis use.” *International Journal of Drug Policy*, vol. 80, p. 102 748, 2020.
94. J. M. Torres, O. Sofrygin, **K. E. Rudolph**, R. Wong, M. N. Haan, and M. M. Glymour, “Adult child US migration status and cognitive decline among older parents who remain in Mexico.” *American Journal of Epidemiology*, vol. 189, no. 8, pp. 761–769, 2020.
95. **K. E. Rudolph**, A. Shev, D. Paksarian, K. R. Merikangas, D. J. Mennitt, P. James, and J. A. Casey, “Environmental noise and sleep and mental health outcomes in a nationally representative sample of urban US adolescents,” *Environmental Epidemiology*, vol. 3, no. 4, p. e056, 2019.

96. R. M. Kagawa, V. A. Pear, **K. E. Rudolph**, K. M. Keyes, M. Cerdá, and G. J. Wintemute, “Distress level and daily functioning problems attributed to firearm victimization: Sociodemographic specific responses,” *Annals of Epidemiology*, vol. 41, pp. 35–42, 2020.
97. E. C. Matthay, K. Farkas, **K. E. Rudolph**, S. Zimmerman, M. Barragan, D. E. Goin, and J. Ahern, “Firearm and nonfirearm violence after operation peacemaker fellowship in Richmond, California, 1996–2016,” *American Journal of Public Health*, vol. 109, no. 11, pp. 1605–1611, 2019.
98. [‡]J. A. Casey, D. E. Goin[‡], **K. E. Rudolph**, B. S. Schwartz, D. Mercer, H. Elser, E. A. Eisen, and R. Morello-Frosch, “Unconventional natural gas development and adverse birth outcomes in Pennsylvania: The potential mediating role of antenatal anxiety and depression,” *Environmental Research*, vol. 177, p. 108 598, 2019.
99. J. M. Torres, **K. E. Rudolph**, O. Sofrygin, R. Wong, L. C. Walter, and M. M. Glymour, “Having an adult child in the United States, physical functioning, and unmet needs for care among older Mexican adults,” *Epidemiology*, vol. 30, no. 4, pp. 553–560, 2019.
100. B. Ackerman, I. Schmid, **K. E. Rudolph**, M. J. Seamans, R. Susukida, R. Mojtabei, and E. A. Stuart, “Implementing statistical methods for generalizing randomized trial findings to a target population,” *Addictive Behaviors*, vol. 94, pp. 124–132, 2019.
101. R. M. Kagawa, D. S. Gary, G. J. Wintemute, **K. E. Rudolph**, V. A. Pear, K. Keyes, and M. Cerdá, “Psychiatric disorders and gun carrying among adolescents in the United States,” *Journal of Pediatrics*, vol. 209, pp. 198–203, 2019.
102. J. P. Schleimer, A. E. Rivera-Aguirre, A. Castillo-Carniglia, H. S. Laqueur, **K. E. Rudolph**, H. Suárez, J. Ramírez, N. Cadenas, M. Somoza, M. V. Brasesco, S. S. Martins, M. Cerdá, “Investigating how perceived risk and availability of marijuana relate to marijuana use among adolescents in Argentina, Chile, and Uruguay over time,” *Drug and Alcohol Dependence*, vol. 201, pp. 115–126, 2019.
103. K. Farkas, E. C. Matthay, **K. E. Rudolph**, D. E. Goin, and J. Ahern, “Mental and substance use disorders among legal intervention injury cases in California, 2005–2014,” *Preventive Medicine*, vol. 121, pp. 136–140, 2019.
104. S. A. Berkowitz, **K. E. Rudolph**, and S. Basu, “Detecting anomalies among practice sites within multicenter trials: An application of transportability methods to the topcat and accord bp trials,” *Circulation: Cardiovascular Quality and Outcomes*, vol. 12, no. 3, p. e004907, 2019.
105. E. C. Matthay, **K. E. Rudolph**, D. E. Goin, K. Farkas, J. Skeem, and J. Ahern, “Within-community variation in violence and risk of self-harm in California: A population-based case-crossover study,” *Epidemiology*, vol. 30, no. 2, pp. e5–e7, 2019.
106. [‡]**K. E. Rudolph**, D. E. Goin[‡], D. Paksarian, R. Crowder, K. R. Merikangas, and E. A. Stuart, “Causal mediation analysis with observational data: Considerations and illustration

- examining mechanisms linking neighborhood poverty to adolescent substance use,” *American Journal of Epidemiology*, vol. 188, no. 3, pp. 598–608, 2018.
107. **K. E. Rudolph**, O. Sofrygin, N. M. Schmidt, R. Crowder, M. M. Glymour, J. Ahern, and T. L. Osypuk, “Mediation of neighborhood effects on adolescent substance use by the school and peer environments,” *Epidemiology*, vol. 29, no. 4, pp. 590–598, 2018.
108. **K. E. Rudolph**, N. M. Schmidt, R. Crowder, J. Galin, M. M. Glymour, J. Ahern, and T. L. Osypuk, “Composition or context: Using transportability to understand drivers of site differences in a large-scale housing experiment,” *Epidemiology*, vol. 29, no. 2, pp. 199–206, 2018.
109. **K. E. Rudolph** and E. A. Stuart, “Using sensitivity analyses for unobserved confounding to address covariate measurement error in propensity score methods,” *American Journal of Epidemiology*, vol. 187, no. 3, pp. 604–613, 2018.
110. *J. Ahern, E. C. Matthyay, D. E. Goin, K. Farkas, and **K. E. Rudolph**, “Spikes in community violence increase deaths and hospital visits due to stress-responsive diseases,” *Epidemiology*, vol. 29, no. 5, pp. 684–691, 2018.
111. R. Kagawa, M. Cerda, **K. E. Rudolph**, V. Pear, K. Keyes, and G. Wintemute, “Firearm involvement in violent victimization and mental health,” *Annals of Internal Medicine*, vol. 169, no. 8, pp. 584–585, 2018.
112. J. M. Torres, **K. E. Rudolph**, O. Sofrygin, M. M. Glymour, and R. Wong, “Longitudinal associations between having an adult child migrant and depressive symptoms among older adults in the Mexican health and aging study,” *International Journal of Epidemiology*, vol. 47, no. 5, pp. 1432–1442, 2018.
113. R. L. O’Brien, T. Neman, **K. E. Rudolph**, J. Casey, and A. Venkataramani, “Prenatal exposure to air pollution and intergenerational economic mobility: Evidence from us county birth cohorts,” *Social Science & Medicine*, vol. 217, pp. 92–96, 2018.
114. †D. E. Goin†, **K. E. Rudolph**, and J. Ahern, “Predictors of community firearm violence.” *Health and Place*, vol. 51, pp. 61–67, 2018.
115. R. M. Kagawa, A. Castillo-Carniglia, J. S. Vernick, D. Webster, C. Crifasi, **K. E. Rudolph**, M. Cerdá, A. Shev, and G. J. Wintemute, “Repeal of comprehensive background check policies and firearm homicide and suicide,” *Epidemiology*, vol. 29, no. 4, pp. 494–502, 2018.
- This paper has generated 22 news stories.
116. *N. Diamond-Smith and **K. E. Rudolph**, “The association between uneven sex ratios and violence: Evidence from 6 Asian countries,” *PloS one*, vol. 13, no. 6, e0197516, 2018.
117. K. Georgiades, D. Paksarian, **K. E. Rudolph**, and K. R. Merikangas, “Prevalence of mental disorder and service use by immigrant generation and race/ethnicity among us adolescents,” *Journal of the American Academy of Child & Adolescent Psychiatry*, vol. 57, no. 4, pp. 280–287, 2018.

118. E. C. Matthay, J. Galin, K. Farkas, **K. E. Rudolph**, G. Wintemute, and J. Ahern, “Associations between gun shows and firearm deaths and injuries (response to comments),” *Annals of internal medicine*, vol. 169, no. 1, pp. 66–66, 2018.
119. **K. E. Rudolph**, O. Sofrygin, W. Zheng, and M. J. Van Der Laan, “Robust and flexible estimation of stochastic mediation effects: A proposed method and example in a randomized trial setting,” *Epidemiologic Methods*, vol. 7, no. 1, 2018.
120. A. Vable, M. Kiang, S Basu, **K. E. Rudolph**, I Kawachi, S. Subramanian, and M. Glymour, “Military service, childhood socioeconomic status, and late life lung function: Korean war-era military service associated with smaller disparities,” *Military Medicine*, vol. 183, no. 9–10, e576–e582, 2018.
121. **K. E. Rudolph** and M. J. van der Laan, “Robust estimation of encouragement-design intervention effects transported across sites,” *Journal of the Royal Statistical Society Series B Statistical Methodology*, vol. 79, no. 5, pp. 1509–1525, 2017.
 - The Journal of the Royal Statistical Society Series B Statistical Methodology (JRSS-B) is one of the top 3 statistics journals.
 - This paper has been cited 83 times, and is cited as one of the foundational papers in the transportability literature (which is an emerging subfield of statistics).
122. E. C. Matthay, J. Galin, **K. E. Rudolph**, K. Farkas, G. J. Wintemute, and J. Ahern, “In-state and interstate associations between gun shows and firearm deaths and injuries: A quasi-experimental study,” *Annals of Internal Medicine*, vol. 167, no. 12, pp. 837–844, 2017.
 - This article was chosen for an invited commentary and response.
123. [‡]D. E. Goin[†], **K. E. Rudolph**, and J. Ahern, “Drought and crime in California,” *Plos ONE*, vol. 12, no. 10, e0185629, 2017.
 - Mentee, Dana Goin, led this work.
124. H. Hong, **K. E. Rudolph**, and E. A. Stuart, “Bayesian approach for addressing differential covariate measurement error in propensity score methods,” *Psychometrika*, vol. 82, no. 4, pp. 1078–1096, 2017.
125. Y. Webb-Vargas, **K. E. Rudolph**, D. Lenis, P. Murakami, and E. A. Stuart, “An imputation-based solution to using mismeasured covariates in propensity score analysis,” *Statistical Methods in Medical Research*, vol. 26, no. 4, pp. 1824–1837, 2017.
126. **K. E. Rudolph**, K. Colson, E. A. Stuart, and J. Ahern, “Optimally combining propensity score subclasses,” *Statistics in Medicine*, vol. 35, no. 27, pp. 4937–4947, 2016.
127. **K. E. Rudolph**, B. N. Sanchez, E. A. Stuart, B. Greenberg, K. Fujishiro, G. S. Wand, S. Shrager, T. Seeman, A. V. D. Roux, and S. H. Golden, “Job strain and the cortisol diurnal cycle in mesa: Accounting for between-and within-day variability,” *American Journal of Epidemiology*, vol. 183, no. 5, 497–506, 2016.

128. [‡]K. E. Colson[‡], **K. E. Rudolph**, S. C. Zimmerman, D. E. Goin[‡], E. A. Stuart, M. van der Laan, and J. Ahern, “Optimizing matching and analysis combinations for estimating causal effects,” *Scientific Reports*, vol. 6, 2016.

- Mentee, Ellie Colson, led this work.

129. J. A. Casey, P. James, **K. E. Rudolph**, C.-D. Wu, and B. S. Schwartz, “Greenness and birth outcomes in a range of Pennsylvania communities,” *International Journal of Environmental Research and Public Health*, vol. 13, no. 3, p. 311, 2016.

130. J. M. Torres, C Alcantara, **K. E. Rudolph**, and E. A. Viruell-Fuentes, “Cross-border ties as sources of risk and resilience: Do cross-border ties moderate the relationship between immigration-related stress and psychological distress for Latino migrants in the us?” *Journal of Health and Social behavior*, vol. 57, no. 4, pp. 436–452, 2016.

131. **K. E. Rudolph** and W. W. Eaton, “Previous anxiety and depression as risk factors for early labour force exit,” *Journal of Epidemiology and Community Health*, vol. 70, no. 4, pp. 390–395, 2016.

132. **K. E. Rudolph**, E. A. Stuart, J. S. Vernick, and D. W. Webster, “Association between Connecticut’s permit-to-purchase handgun law and homicides,” *American Journal of Public Health*, vol. 105, no. 8, e49 –54, 2015.

- This paper has 144 citations and generated 124 news stories from 113 outlets. Some examples follow.

- The Washington Post: <http://www.washingtonpost.com/blogs/govbeat/wp/2015/06/12/gun-killings-fell-by-40-percent-after-connecticut-passed-this-law/>
- The New Yorker: <http://www.newyorker.com/news/daily-comment/an-honest-comedian-on-gintcid=mod-latest>
- CNN: <http://www.cnn.com/2015/06/12/us/gun-law-homicide-drop/>
- Reddit’s front page: http://www.reddit.com/r/science/comments/39pazx/connecticuts_permit_to_purchase_law_in_effect_for/
- The Baltimore Sun: <http://www.baltimoresun.com/news/maryland/politics/blog/bs-md-van-hollen-gun-20150611-story.html>
- WNPR: <http://wnpr.org/post/new-analysis-attempts-quantify-impact-handgun-regulations-state#stream/0>

- This research was singled out and highlighted by President Obama in his January 5, 2016, speech on gun control.

- Cited in arguments for gun legislation.

U.S. Rep. Chris Van Hollen, [D, Maryland]...introduced legislation to encourage states to toughen handgun licensing requirements...in tandem with a study from the Johns Hopkins Center for Gun Policy and Research, which found that a 1995 Connecticut law requiring a permit and background check to purchase

a handgun was associated with a 40 percent reduction in firearm-related homicides.¹

- We received a thank you note from a Sandy Hook parent after its publication.
133. D. Paksarian, **K. E. Rudolph**, J. P. He, and K. R. Merikangas, “School start time and adolescent sleep patterns: Results from the U.S. National comorbidity survey—adolescent supplement,” *American Journal of Public Health*, vol. 105, no. 7, pp. 1351–1357, 2015.
- This paper was cited in the UK Parliament Briefing notes on 08 Feb 2019 as part of E-petition 229178 relating to secondary school opening hours.
 - It has 83 citations.
 - I designed the analysis and conducted the analysis.
134. B. Hadley, **K. E. Rudolph**, M. Mogul, and D. F. Perry, “Providing home visiting to high-risk pregnant and postpartum families: The development and evaluation of the momobile program.” *Zero to Three*, vol. 35, no. 2, 40 — 48, 2014.
135. **K. E. Rudolph**, I. Diaz, M. Rosenblum, and E. A. Stuart, “Estimating population treatment effects from a survey sub-sample,” *American Journal of Epidemiology*, vol. 180, no. 7, pp. 737–748, 2014.
136. **K. E. Rudolph**, E. A. Stuart, T. A. Glass, and K. R. Merikangas, “Neighborhood disadvantage in context: The influence of urbanicity on the association between neighborhood disadvantage and adolescent emotional disorders,” *Social Psychiatry and Psychiatric Epidemiology*, vol. 49, no. 3, pp. 467–475, 2014.
137. **K. E. Rudolph**, W. Gary S, E. A. Stuart, T. A. Glass, A. H. Marques, R. Duncko, and K. R. Merikangas, “The association between cortisol and neighborhood disadvantage in a U.S. population-based sample of adolescents,” *Health Place*, vol. 25, pp. 68–77, 2014.
138. **K. E. Rudolph**, J. Lessler, R. M. Moloney, B. Kmush, and D. A. Cummings, “Incubation periods of mosquito-borne viral infections: A systematic review,” *The American Journal of Tropical Medicine and Hygiene*, vol. 90, no. 5, pp. 882–891, 2014.
139. **K. E. Rudolph**, T. A. Glass, R. M. Crum, and B. S. Schwartz, “Neighborhood psychosocial hazards and binge drinking among late middle-aged adults,” *Journal of Urban Health*, vol. 90, no. 5, pp. 970–982, 2013.
140. R. M. Lee, J. Lessler, R. A. Lee, **K. E. Rudolph**, N. G. Reich, T. M. Perl, and D. A. Cummings, “Incubation periods of viral gastroenteritis: A systematic review,” *BMC Infectious Diseases*, vol. 13, no. 1, p. 446, 2013.
141. A. S. Azman, **K. E. Rudolph**, D. A. Cummings, and J. Lessler, “The incubation period of cholera: A systematic review,” *Journal of Infection*, vol. 66, no. 5, pp. 432–438, 2013.

¹<http://www.baltimoresun.com/news/maryland/politics/blog/bs-md-van-hollen-gun-20150611-story.html>

Reviews and Editorials

1. *[‡]Williams, N.T., Hung, A., Williams, N.T., **Rudolph, K.E.** Re: Don't let your analysis go to seed: on the impact of random seed on machine learning-based causal inference. *Epidemiology*. 36(4), e12–e13, 2025.
2. **K. E. Rudolph** and K. M. Keyes. “Voluntary firearm divestment and suicide risk: Real-world importance in the absence of causal identification,” *Epidemiology*, vol. 34, no. 1, pp. 107–110, 2023.
3. **K. E. Rudolph** and B. Lau, “Epidemiologic methods: Seeing the forest and the trees,” *Epidemiologic reviews*, 2021.
4. *[‡]D. E. Goin[‡] and **K. E. Rudolph**, “Guns, laws, and causality,” *Epidemiology*, vol. 32, no. 1, pp. 46–9, 2021.
 - Mentee, Dana Goin, led this work.
5. *T. Benmarhnia and **K. E. Rudolph**, “A rose by any other name still needs to be identified (with plausible assumptions),” *International Journal of Epidemiology*, vol. 48, no. 6, pp. 2061–2062, 2019.
6. *M. M. Glymour and **K. E. Rudolph**, “Causal inference challenges in social epidemiology: Bias, specificity, and imagination,” *Social Science & Medicine*, vol. 166, no. 5, pp. 258–265, 2016.

Invited Presentations at Regional, National or International Levels

Regional

- 2025 Using machine learning in a causal inference framework to inform treatment of opioid use disorder, New York University Langone Medical Center, AI Symposium, New York, New York
- 2025 Informing the prevention and treatment of opioid use disorder, New York University Langone Medical Center, Grand Rounds, New York, New York
- 2023 Using causal mediation analysis to better understand unintended harmful effects, Children's Hospital of the University of Pennsylvania (CHOP), Clinical Futures Seminar Series, Philadelphia, Pennsylvania.
- 2023 Two strategies for reducing opioid use disorder relapse, New York University, Department of Population Health, New York, New York.
- 2022 Using transportability estimators to understand reasons for differences in intervention effects across sites, Princeton University, Notestein Seminar Series at the Office of Population Research, Princeton, NJ (in person).
- 2022 Robust and efficient nonparametric estimation of transported total causal effects and mediational causal effects, Drexel University, Department of Epidemiology and Biostatistics, Philadelphia, PA (online due to Covid-19).
- 2020 Transporting direct and indirect effects to new populations. PRIISM (Practice and Research at the Intersection of Information, Society, and Methodology) Seminar Series, New York University, New York, NY (online due to Covid-19).
- 2020 Causal mediation analysis: review of approaches and application to explain differences in opioid treatment responsiveness. Diabetes LEAD Network Meeting, Drexel University, Johns Hopkins University, New York University, and University of Alabama, New York, NY (online due to Covid-19).
- 2018 Bringing Context into Focus—Transportability Framework on the Effect of Housing, University of California, San Francisco, Symposium: Closing the Gap between Rigor and Relevance: Methodological Opportunities for Implementation Science to Address the HIV Epidemic, San Francisco, CA.
- 2018 Improving prediction of intervention effects across populations, University of California, San Francisco, Department of Epidemiology and Biostatistics, San Francisco, CA.
- 2018 Firearm violence and policy evidence, Grand Rounds, UCSF Benioff Children's Hospital, Oakland, CA.
- 2018 Improving prediction of intervention effects across populations, University of California, Berkeley School of Public Health, Berkeley, CA.
- 2017 Better neighborhoods are harmful? Examining effect heterogeneity and mediation to understand puzzling results of the Moving to Opportunity Experiment, University of California, Davis, Graduate Group in Epidemiology, Davis, CA.
- 2017 Better neighborhoods are harmful? Examining effect heterogeneity and mediation to understand puzzling results of the Moving to Opportunity Experiment, University of California, San Francisco, NIDA T32 Training Program in Substance Abuse Treatment and Services Research, San Francisco, CA.
- 2015 Guns, cities, and statistics: Accurate statistical methods to inform policies to prevent violence and risk behaviors, University of California, Davis, School of Medicine, Department of Emergency Medicine, Sacramento, CA.
- 2014 Neighborhood Disadvantage and Cortisol, Drexel School of Public Health, Department of Epidemiology and Biostatistics, Philadelphia, PA.

National

- 2025 Causal Mediation Workshop, University of California, Los Angeles, California Center for Population Research, Los Angeles, CA.
- 2025 Improving efficiency in transporting average treatment effects, University of California Berkeley, Center for Targeted Learning Seminar Series, Berkeley, CA.
- 2024 Informing the prevention and treatment of opioid use disorder, Brown University, Deans Lecture, Providence, RI.
- 2024 How mediators can: 1) achieve identification for transported effects and 2) improve understanding of why effects differ across populations, University of California Berkeley, FIORD Workshop, Bethesda, MD.
- 2024 Efficiently transporting average treatment effects using a sufficient subset of effect modifiers, Harvard University, Biostatistics Departmental Seminar, Boston, MA.
- 2023 Efficiently transporting average treatment effects using a sufficient subset of effect modifiers, Brown University, Workshop on “Extending Inferences to a New Target Population” organized by the Simons Foundation Institute for Computational and Experimental Research in Mathematics, Providence, RI.
- 2023 Two strategies for reducing opioid use disorder relapse, University of Pittsburg, Department of Epidemiology, Pittsburg, PA.
- 2023 Under-representation of key demographic groups in opioid use disorder trials. Drug and Alcohol Dependence Report’s Editor’s Picks Webinar.
- 2022 Transporting intervention effects across sites, Wake Forest University, Department of Biostatistics and Data Science, Winston-Salem, NC (online).
- 2022 Two strategies for reducing opioid use disorder relapse, Johns Hopkins University, Department of Epidemiology, Translational Epidemiology Seminar Series, Baltimore, MD (online due to Covid-19).
- 2022 Towards understand one-size-does-not-fit-all nuances in health effects of housing vouchers, the Society for Epidemiologic Research, Chicago, IL.
- 2022 When effects cannot be estimated: redefining estimands to understand the effects of naloxone access laws. Oral presentation at the Society for Epidemiologic Research, Chicago, IL.
- 2022 Causal mediation analysis with instrumental variables. Oral presentation at the American Causal Inference Conference, Berkeley, CA.
- 2022 Under-representation of key demographic groups in opioid use disorder trials. Oral Presentation at the Society for Clinical Trials, San Diego, CA.
- 2021 Towards understanding one-size-does-not-fit-all nuances. University of Massachusetts Amherst (online due to Covid-19).
- 2021 Early Career Award. Society for Epidemiologic Research **Plenary**, San Diego, CA (online due to Covid-19).
- 2021 Causal mediation analysis: review of approaches and application to explain differences in opioid treatment responsivity. Environmental and Occupational Epidemiology course. Emory University, Atlanta, GA (online due to Covid-19).
- 2021 All models are wrong, but does it matter? On the bias of parametric estimators of causal effects in randomized and observational studies. Oral presentation at the Society for Epidemiologic Research, San Diego, CA.

- 2020 Using a flexible, efficient, nonparametric estimator of direct and indirect effects to explain differences in opioid treatment responsivity. Oral presentation at the American Causal Inference Conference, Austin, TX. (Cancelled due to Covid-19).
- 2019 The relative economy and drug overdose deaths. Department of Epidemiology Seminar Series. Brown University, Providence, RI.
- 2019 Firearm violence and policy evidence, Pediatric Grand Rounds, UCSF Zuckerberg San Francisco General Hospital, San Francisco, CA.
- 2019 Improving prediction of intervention effects across populations, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.
- 2018 Estimation of direct effects in an instrumental variable setting: a proposed method and example estimating effects of a randomized housing trial on adolescent substance use. Oral presentation at the Society for Epidemiologic Research Conference, Baltimore, MD.
- 2018 Improving prediction of intervention effects across populations, Columbia Mailman School of Public Health, New York, NY.
- 2018 Improving prediction of intervention effects across populations, New York University School of Medicine, New York, NY.
- 2017 Robust and flexible estimation of stochastic mediation effects: a proposed method and example in a randomized trial setting. Oral presentation at the Society for Epidemiologic Research Conference, Seattle, WA.
- 2016 Understanding site differences in the effects of the Moving to Opportunity Study on adolescent outcomes. Oral presentation at the Joint Statistical Meetings, Chicago, IL.
- 2016 Contextual drivers of firearm violence. Oral presentation at the Society for Epidemiologic Research Conference, Miami, FL.
- 2016 Understanding site differences in the effects of the Moving to Opportunity Study on adolescent outcomes. Oral presentation at the Robert Wood Johnson Foundation Health & Society Scholars Conference, New Orleans, LA.
- 2015 Transportability in Encouragement-Design Interventions. Oral presentation at the Robert Wood Johnson Foundation Health & Society Scholars Conference, Chapel Hill, NC.
- 2014 Estimating population treatment effects from a survey sub-sample. Oral presentation as part of topic-contributed session Fresh Perspectives in Causal Inference II at the Joint Statistical Meetings, Boston, MA.
- 2010 Environmental supports and barriers to physical activity in D.C. childcare centers. Oral presentation at the Annual American Public Health Association Conference, Denver, CO.

International

- 2025 Using a generalization of the average treatment effect on the treated to better understand opioid prescription risks, 19th International Joint Conference in Computational and Methodological Statistics and Computational and Financial Econometrics, London, United Kingdom.
- 2024 Nonparametric mediation estimators that accommodate multiple mediators and multiple intermediate confounder, 18th International Joint Conference in Computational and Methodological Statistics and Computational and Financial Econometrics, London, United Kingdom.
- 2024 Efficiently transporting average treatment effects using a sufficient subset of effect modifiers, Oral Presentation at the Pacific Causal Inference Conference, Shanghai, China
- 2023 Causal mediation analysis with instrumental variables. Oral Presentation at the International Conference of the ERCIM WG on Computational and Methodological Statistics, Berlin, Germany.
- 2023 Causal mediation analysis with instrumental variables. Oral Presentation at the Conference on Econometrics and Statistics, Kyoto, Japan.
- 2022 Robust and efficient nonparametric estimation of transported total causal effects and mediational causal effects. Oral Presentation at the Conference on Econometrics and Statistics, Kyoto, Japan.