Caleb H. Miles
722 W 168th Street, 6th floor
New York, NY 10032
212-305-1696
cm3825@cumc.columbia.edu

Date of Preparation

September 5, 2021

Personal Data

Name: Caleb H. Miles
Date of Birth: March 5, 1987
Birthplace: Greensboro, NC
Citizenship: United States

Academic Appointments

08/2018–Present	Department of Biostatistics Mailman School of Public Health, Columbia University Assistant Professor

---

Education

08/2010–07/2015	Harvard University PhD in Biostatistics, November 2015 Thesis title: Semiparametric Methods for Causal Mediation Analysis and Measurement Error Miles, C.H. 2015. Semiparametric Methods for Causal Mediation Analysis and Measurement Error. Doctoral dissertation, Harvard University, Graduate School of Arts & Sciences. Adviser: Eric J. Tchetgen Tchetgen Minor field of study: Epidemiology of HIV
08/2005–12/2009	University of Alabama B.S. with honors in Mathematics, *magna cum laude*, December 2009 Minor field of study: Engineering

---

Training

08/2015–06/2018	Division of Biostatistics University of California, Berkeley Postdoctoral Fellow Adviser: Mark J. van der Laan

---

Honors & Awards

2016	The Biometrics Section of the American Statistical Association's travel award
2015	The Health Policy Statistics Section of the American Statistical Association's student paper award
2014	Travel scholarship, Summer Institute in Statistics and Modeling in Infectious Diseases. University of Washington, Seattle.
2009	Phi Beta Kappa
2005–2009	Presidential Scholarship, University of Alabama
2005	National Merit Scholar

Academic Service

04/2020–present	Master's of Public Health Core Review Working Group Subgroup for the Research Methods and Applications Studio, Columbia Mailman School of Public Health
09/2018–present	Inference Qualifying Exam Committee, Department of Biostatistics, Columbia Mailman School of Public Health • Chair 09/2020–present • Co-chair 09/2019–08/2020
09/2018–present	Communications Committee, Department of Biostatistics, Columbia Mailman School of Public Health
09/2018–present	Student Recruitment Committee, Department of Biostatistics, Columbia Mailman School of Public Health
04/2020–03/2021	Organizer, Levin Lecture Series, Department of Biostatistics
09/2018–08/2020	Master's Program Admissions Committee, Department of Biostatistics, Columbia Mailman School of Public Health

---

Professional Organizations, Societies, and Service

Editorial Board

11/2018–Present	Associate Editor, *International Journal of Biostatistics*

Journal and Conference Proceedings Reviewer

American Journal of Epidemiology
The American Statistician
Annals of Applied Statistics
Biometrical Journal
Biometrics
Biometrika
Biostatistics
Computational Learning Theory
Conference on Neural Information Processing Systems
Depression and Anxiety
Epidemiology
International Conference on Machine Learning
International Journal of Biostatistics
Journal of Business and Economic Statistics
Journal of Causal Inference
Journal of Educational and Behavioral Statistics
Journal of the American Statistical Association
Journal of the Royal Statistical Society: Series B
Journal of the Royal Statistical Society: Series C
Psychiatric Services
Statistica Sinica
Statistical Methods in Medical Research
Statistics in Biosciences
Statistics in Medicine
Uncertainty in Artificial Intelligence

Memberships

04/2021–Present	Society for Causal Inference
03/2021–Present	Association for Clinical and Translational Science
01/2015–Present	Eastern North American Region (ENAR) of the International Biometrics Society
06/2012–Present	American Statistical Association

Fellowship and Grant Support

Submitted Grant Proposals

DISES 20-579, NSF / GEO / BIO / SBE (DeFries)
Urban migration, Covid-19, and Forests: Resilience for Vulnerable Populations in Central India
Co-Investigator

R21 PA-18-482, NIH / NICHD (Guglielminotti)
Obstetric Anesthesia and Postpartum Depression
Co-Investigator

R01 MH124455-01, NIH / NIMH / NIDA / NIMHD / NIAID (Sandfort)
Sexual identity development and HIV risk and resilience among gay and bisexual male youth
Co-Investigator

Present Support

03/2020–02/2021 TRANSFORM KL2 Mentored Career Development Award, NIH / NCATS (Miles)
Personalizing Treatment Decisions and Understanding Causal Mechanisms for Functional and Occupational Outcomes Among Patients With Schizophrenia
Principal Investigator
75% salary support

01/2020–12/2021 Columbia Public Health Innovation Fund (Miles, Rudolph, Valeri)
New York Causality Network
Principal Investigator

09/2018–07/2023 R01 HS026493-02, NIH / AHRQ (Ing)
Prenatal Exposure to Anesthesia and Subsequent Neurodevelopmental Disorders
Co-Investigator

09/2018–05/2022 R01 MH11719, NIH / NIMH (Compton)
A Trial of a Police-Mental Health Linkage System for Jail Diversion and Reconnection to Care
Co-Investigator

Past Support

07/2016–05/2021 UL1 TR001873, NIH / NCATS (Reilly)
Clinical and Translational Science Award - Biostatistics Resource
Biostatistician

06/2014–06/2021 Bill & Melinda Gates Foundation (Walker)
Preterm Birth Initiative
Lead Statistician
Responsibilities: Oversee impact evaluation of two large facility-level implementation projects to improve preterm birth outcomes in East Africa. Supervise doctoral student.

Educational Contributions

Direct Teaching

Specific Courses

Fall 2020	Theory of Statistical Inference 1 (6 enrolled students)
Fall 2019	Theory of Statistical Inference 1 (6 enrolled students)

Workshops

Summer 2021	Causal Mediation Analysis Training: Methods and Applications Using Health Data (co-instructor, 45 students, 3-day intensive boot camp of seminars and hands-on analytical sessions)
Summer 2020	Causal Mediation Analysis Training: Methods and Applications Using Health Data (co-instructor, 25 students, 3-day intensive boot camp of seminars and hands-on analytical sessions)
Summer 2019	Causal Mediation Analysis Training: Methods and Applications Using Health Data (co-instructor, 21 students, 3-day intensive boot camp of seminars and hands-on analytical sessions)

Teaching Assistant

Fall 2014	Department of Biostatistics, Harvard School of Public Health Course: Methods I Professor: Eric J. Tchetgen Tchetgen
Fall 2013	Department of Biostatistics, Harvard School of Public Health Course: Methods I Professor: Eric J. Tchetgen Tchetgen
Fall 2012	Department of Biostatistics, Harvard School of Public Health Course: Introduction to Statistical Methods Professor: Bernard Rosner Note: Head teaching assistant & responsible for two recitation sections
Fall 2011	Department of Biostatistics, Harvard School of Public Health Course: Introduction to Statistical Methods Professor: Kimberlee Gauvreau

Guest Lectures

01/2020	"Prediction/Machine Learning and Causality", Substance Abuse Epidemiology Training Program Seminar, Columbia University, New York, NY
11/2019	"Prediction/Machine Learning and Causality", Biostatistics, Epidemiology, and Research Design's Biostatistics in Action Series, Columbia University, New York, NY
10/2019	"Prediction/Machine Learning and Causality", Clinical Translational Science Awards' Patient-Oriented Research Colloquium, Columbia University, New York, NY
03/2019	"Introduction to Causal Inference (Pt. 2)", Neurology Training Seminar, Columbia University, New York, NY
02/2019	"Introduction to Causal Inference (Pt. 1)", Neurology Training Seminar, Columbia University, New York, NY
11/2017	Causal Inference With Interference. Advanced Topics in Causal Inference, University of California, Berkeley
03/2016	Estimation and Inference for a Causal Effect With i.i.d. and Non-i.i.d. Data. Introduction to Modern Biostatistical Theory and Practice, University of California, Berkeley

Mentorship and Dissertation Committee Service

2021	Mentor, Biostatistics Epidemiology Summer Training Diversity Program, Department of Biostatistics, Columbia Mailman School of Public Health
2021	Master's practicum adviser (M.S. Theory and Methods track), Ngoc Duong, Department of Biostatistics, Columbia University Mailman School of Public Health
2021	Jiaxi Yang, Teacher's College, Columbia University (Dissertation Defense Committee)
2020	Xiaoqi Lu (Dissertation Defense Committee)
2020	Eun-Jeong Oh (Dissertation Defense Committee)
2019–2020	Rui Lu, Teacher's College, Columbia University (Dissertation Proposal Committee, Dissertation Defense Committee)
2019	Mentor, Biostatistics Epidemiology Summer Training Diversity Program, Department of Biostatistics, Columbia Mailman School of Public Health
2014	Graduate mentor, Summer Program in Biostatistics & Computational Biology, Department of Biostatistics, Harvard School of Public Health

---

Publications

Original, Peer Reviewed Articles

Refereed Journal Articles

1. Ha, A., Han, D.S., Wallace, B.K., **Miles, C.H.**, Raup, V., Badalato, G.M., Alukal, J.P. (2021). Exploring the Use of Exchange Transfusion in the Surgical of Priapism in Sickle Cell Disease: A Population-Based Analysis. *Journal of Sexual Medicine* (In press)

2. Ha, A.S., Pak, J., Haas, C.R., **Miles, C.H.**, Weiner, D.M., Anderson, C.B., Badalato, G.M. (2021). A Novel Risk Prediction Model to Triage Difficult Urethral Catheterizations. *Urology* (In press)

3. Margolin, E.J., Pina Martina, L.A., **Miles, C.H.**, Wenske, S., McKiernan, J.M., DeCastro, G.J., Hyams, E.S., Drake, C.G., Lim, E., Stein, M.N., Deutsch, I., Anderson, C.B. (2021). Telemedicine in Management of Genitourinary Malignancies: Patient and Physician Perspectives. *Urologic Oncology* (In press)

4. Geneslaw, A.S., Lu, Y., **Miles, C.H.**, Hua, M., Cappell, J., Smerling, A.J., Olfson, M., Edwards, J.D., Ing, C. (2021). Long-Term Increases in Mental Disorder Diagnoses After Invasive Mechanical Ventilation for Severe Childhood Respiratory Disease. *Pediatric Critical Care Medicine* (In press)

5. Duncan, D.T., Ransome, Y., Park, S.H., Jackson, S.D., Kawachi, I., Branas, C.C., Knox, J., Al-Ajlouni, Y.A., Mountcastle, H.D., **Miles, C.H.**, Hickson, D.A. (2021). Neighborhood Social Cohesion, Religious Participation and Sexual Risk Behaviors Among Cisgender Black Sexual Minority Men in the Southern United States. *Social Science & Medicine*, 279, 113913.

6. Ing, C., Landau, R., DeStephano, D., **Miles, C.H.**, von Ungern-Sternberg, B.S., Li, G., and Whitehouse, A.J.O. (2021). Prenatal Exposure to General Anesthesia and Childhood Behavioral Deficit. *Anesthesia & Analgesia*, 10-1213.

7. **Miles, C.H.**, Shpitser, I., Kanki, P., Meloni, S., and Tchetgen Tchetgen, E. J. (2020). On semiparametric estimation of a path-specific effect in the presence of mediator-outcome confounding. *Biometrika*, 107(1), 159-172.

8. **Miles, C.H.**, Petersen, M., and van der Laan, M.J. (2019). Causal inference when counterfactuals depend on the proportion of all subjects exposed. *Biometrics* 75(3), 768-777.

9. **Miles, C.H.**, Schwartz, J., and Tchetgen Tchetgen, E.J. (2018). A class of semiparametric tests of treatment effect robust to confounder measurement error. *Statistics in Medicine*, 37(24), 3403-3416.

10. **Miles, C.H.**, Shpitser, I., Kanki, P., Meloni, S., and Tchetgen Tchetgen, E.J. (2017). Quantifying an adherence path-specific effect of antiretroviral therapy in the Nigeria PEPFAR program. *Journal of the American Statistical Association*, 112(520), 1443-1452.

11. **Miles, C.H.**, Kanki, P., Meloni, S., and Tchetgen Tchetgen, E.J. (2017). On partial identification of the natural indirect effect. *Journal of Causal Inference*, 5(2).

Selected Works in Progress

1. **Miles, C.H.** and Chambaz, A. (2021). Optimal tests of the composite null hypothesis arising in mediation analysis. preprint arXiv:2107.07575

2. **Miles, C.H.**, Valeri, L., Coull, B. (2021). Accounting for Measurement Error in a Study of the Total and Mediated Effects of Maternal Protein Intake and Lead Exposure on Birth Length.

3. Antonelli, J. Díaz, I., **Miles, C.H.**, Rudolph, K., Williams, N. (2021). All models are wrong, but which are useful? Estimation of causal effects in randomized and observational studies. Note: Authors in alphabetical order

4. **Miles, C.H.** (2021). On the Causal Interpretation of the Randomized Interventional Analog of the Natural Indirect Effect.

5. Ing, C., DeStephano, D., Hu, T., Reighard, C., Lackraj, D., Geneslaw, A., **Miles, C.H.**, Kim, M. (2021). Intraoperative blood pressure and long-term neurodevelopmental function in children undergoing ambulatory surgery. (Under review)

6. Ha, A.S., Wang, C., Haas, C.R., **Miles, C.H.**, Katz, M.J., Shah, O. (2021). Differences in Management of Pregnant Women with Obstructing Infected Ureteral Stones: A Population-Based Analysis. (Under review)

7. Wallace, B.K., **Miles, C.H.**, Anderson, C.B. (2021). Effects of Race and Socioeconomic Status on Treatment for Localized Renal Masses in New York City. (Under review)

8. Ha, A., Wallace, B.K., **Miles, C.H.**, Valary, R., Badalato, G.M., Alukal, J.P. (2021). Exploring the Utilization of Exchange Transfusion in the Management of Priapism in Sickle Cell Disease: A Population-Based Analysis. (Under review)

9. Chung, R., Vila-Reyes, H., **Miles, C.H.**, Decastro, G.J., Anderson, C.B., Drake, C.G., McKiernan, J.M. (2021). Long Term Oncologic Outcomes in Patients with Muscle Invasive Bladder Cancer Who Are Misclassified as Achieving a Complete Clinical Response to Neoadjuvant Chemotherapy: How Costly are Mistakes? (Under review)

10. Margolin, E.J., Wallace, B.K., Movassaghi, M., **Miles, C.H.**, Shaish, H., Golan, R., Katz, M.J., Anderson, C.B., Shah, O. (2021). Predicting Unrecognized Infection in Patients with Ureteral Stones in the Emergency Department. (Under review)

11. Ha, A.S., Wang, C., Haas, C., **Miles, C.H.**, Katz, M.J., Shah, O. (2021). The Association of Pregnancy on Decompression in Women with Obstructed Ureteral Calculi with UTI: A Population-Based Analysis. (Under review)

Software

1. Chambaz, A. and **Miles, C.H.** (2021). mediation.test: This packages proposes more powerful tests of the composite null hypothesis arising in mediation analysis. R package version 1.0.0.

Invited Talks

1. "More Powerful Tests of the Composite Null Hypothesis Arising in Mediation Analysis", Computational and Methodological Statistics, Virtual (12/2020)

2. "Measurement Error-Robust Causal Inference via Synthetic Instrumental Variables", Computational and Methodological Statistics, London, United Kingdom (12/2019)

3. "Causal Inference When Counterfactuals Depend on the Proportion of All Subject Exposed", Technology, Operations, and Statistics, New York University, New York, NY (12/2019)

4. "Causal Inference When Counterfactuals Depend on the Proportion of All Subject Exposed", Operations Research and Information Engineering, Cornell Tech, New York, NY (10/2019)

5. "Causal Inference When Counterfactuals Depend on the Proportion of All Subject Exposed", Biostatistics Seminar, Johns Hopkins University, Baltimore, MD (10/2019)

6. "Measurement Error-Robust Causal Inference via Synthetic Instrumental Variables", Joint Statistical Meetings, Denver, CO (07/2019)

7. "Causal Inference When Counterfactuals Depend on the Proportion of All Subject Exposed", Séminaire de Statistiques, Université Paris-Descartes, Paris, France (05/2019)

8. "Causal Inference When Counterfactuals Depend on the Proportion of All Subject Exposed", Séminaire de Biostatisique, Université de Bordeaux, Bordeaux, France (05/2019)

9. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Levin Lecture Series, Columbia University, New York, NY (01/2018)

10. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Biostatistics Seminar, Vanderbilt University, Nashville, TN (01/2018)

11. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Statistics Seminar, Colorado State University, Fort Collins, CO (01/2018)

12. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Biostatistics Seminar, MD Anderson Cancer Center, Houston, TX (01/2018)

13. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Biostatistics Seminar, University of Pennsylvania, Philadelphia, PA (01/2018)

14. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Biostatistics Seminar, Kaiser Permanente Washington Health Research Institute, Seattle, WA (01/2018)

15. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Biostatistics Seminar, New York University Division of Biostatistics, New York, NY (12/2017)

16. "Partial Identification Bounds and Path-Specific Effects: Two (More) Options When Faced with Exposure-Induced Confounding", Joint Statistical Meetings, Baltimore, MD (07/2017)

17. "A Class of Semiparametric Tests of Treatment Effect Robust to Confounder Classical Measurement Error", Eastern North American Region of the International Biometric Society Spring Meeting, Washington, DC (03/2017)

18. "A Class of Semiparametric Tests of Treatment Effect Robust to Confounder Classical Measurement Error", Joint Statistical Meetings, Chicago, IL (08/2016)

19. "A Class of Semiparametric Tests of Treatment Effect Robust to Confounder Classical Measurement Error", Biostatistics Seminar, University of Washington Department of Biostatistics, Seattle, WA (04/2016)

20. "A Class of Semiparametric Tests of Treatment Effect Robust to Measurement Error of a Confounder", Biostatistics Seminar Series, University of California, Davis Graduate Group in Biostatistics, Davis, CA (02/2016)

21. "Quantifying an Adherence Path-Specific Effect of Antiretroviral Therapy in the Nigeria PEPFAR Program", Joint Statistical Meetings, Seattle, WA (08/2015)

22. "Partial Identification of the Pure Direct Effect Under Exposure-Induced Confounding", Eastern North American Region of the International Biometric Society Spring Meeting, Miami, FL (03/2015)

23. "Quantifying an Adherence Path-Specific Effect of Antiretroviral Therapy in the Nigeria PEPFAR Program", McGill University Biostatistics Seminar, Montreal, Canada (03/2015)

24. "Quantifying an Adherence Path-Specific Effect of Antiretroviral Therapy in the Nigeria PEPFAR Program", University of North Carolina Causal Inference Research Group, Chapel Hill, NC (02/2015)

25. "Quantifying an Adherence Path-Specific Effect of Antiretroviral Therapy in the Nigeria PEPFAR Program", Biostatistics Seminar Series, University of California, Berkeley Division of Biostatistics, Berkeley, CA (02/2015)

26. "Quantifying an Adherence Path-Specific Effect of Antiretroviral Therapy in the Nigeria PEPFAR Program", Johns Hopkins University Causal Inference Group, Baltimore, MD (01/2015)

27. "Identification of the Natural Indirect Effect Under Various Models", Joint Statistical Meetings, Boston, MA (08/2014)

28. "Background and Recent Developments in Causal Mediation Analysis", Joint Statistical Meetings, San Diego, CA (07/2012)

Conference Activity

Sessions Organized

1. "Identifying and Addressing Sources of Bias in Causal Inference", Joint Statistical Meetings, Denver, CO, (07/2019)

Contributed Talks

1. "Optimal tests of the composite null hypothesis arising in mediation analysis", European Causal Inference Meeting, Virtual (09/2021)

2. "When Randomized Interventional Indirect Effects Tell Stories About Mediated Effects (and When They Don't)", Joint Statistical Meetings, Virtual (08/2021)

3. "A More Powerful Test of the Composite Null Hypothesis Arising in Mediation Analysis", Joint Statistical Meetings, Virtual (08/2020)

4. "A Class of Semiparametric Tests of Treatment Effect Robust to Confounder Classical Measurement Error", International Biometric Conference, Victoria, Canada (07/2016)

5. "Semiparametric Estimation of Path-Specific Effects in the Presence of Unmeasured Confounding and Exposure-Induced Confounding", Joint Statistical Meetings, Montreal, Canada (08/2013)

Posters

1. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", IMS New Researchers Conference, Baltimore, MD (07/2017)

2. "Causal Inference for a Single Group of Causally-Connected Units Under Stratified Interference", Atlantic Causal Inference Conference, Chapel Hill, NC (05/2017)

3. "Semiparametric Estimation of Path-Specific Effects in the Presence of Unmeasured Confounding and Exposure-Induced Confounding", Atlantic Causal Inference Conference, Boston, MA (05/2013)

Campus Talks

1. "Accounting for Measurement Error in a Study of the Total and Mediated Effects of Maternal Protein Intake and Lead Exposure on Birth Length", Levin Lecture Series, Columbia University, New York, NY (04/2020)

2. "Causal Inference in Partially-Observed Networks", Mailman School of Public Health School Assembly, Columbia University, New York, NY (10/2018)

3. "On Partial Identification of the Pure Direct Effect", Biostatistics Seminar Series, University of California, Berkeley Division of Biostatistics, Berkeley, CA (09/2015)

4. "Quantifying an Adherence Path-Specific Effect of Antiretroviral Therapy in the Nigeria PEPFAR Program", Harvard University Department of Biostatistics HIV Working Group Seminar, Boston, MA (02/2015)