Dr. Luke J. Keele

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Education

Ph.D. in Political Science, University of North Carolina at Chapel Hill, (2003).

M.A. in Political Science, University of North Carolina at Chapel Hill, (2000).

B.A. in Political Science, Calvin College Grand Rapids, MI (1997).

Professional Experience

Research Professor, University of Pennsylvania (July 2025—Present)

Research Associate Professor, University of Pennsylvania (July 2018—June 2025)

Professor, Georgetown University (July 2016—June 2018)

Associate Professor, Penn State University (July 2011—June 2016)

Associate Professor, Ohio State University (2010—June 2011)

Assistant Professor, Ohio State University (2006—2009)

Post-doctoral Fellowship in Quantitative Research Methods, Nuffield College and Department of Politics, Oxford University (2003—2005)

Publications

Peer-Reviewed Articles

Statistics and Social Sciences

Keele, L., Bonvini, M., Storås, A., Shirvaikar, V., Li, H., Jørgensen, N.B., Salsali, A., Medici, M., Mertens, A., and Kvist, K. (2026). "Exploring heterogeneous treatment effects for GLP-1 receptor agonists in patients with type 2 diabetes." *American Journal of Epidemiology*. (Online first.)

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Huang, M., Ben-Michael, E., McHugh, M., and **Keele, L.** (2026). "Sensitivity analysis for clustered observational studies with an application to the effectiveness of magnet nursing hospitals." *Journal of the Royal Statistical Society, Series A*. (Online first.)

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Ben-Michael, E., Feller, A., Kelz, R., and **Keele, L.** (2025). "Estimating racial disparities in emergency general surgery." *Journal of the Royal Statistical Society, Series A*. 188:4, 1125–1148.

Pashley, N., **Keele, L.**, and Miratrix, L. (2025). "Improving instrumental variable estimators with post-stratification." *Journal of the Royal Statistical Society, Series A*. 188:3, 765–790.

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Keele, L., Lenard, M., and Page, L. (2024). "Overlap violations in clustered observational studies of educational interventions." *Journal of Research on Educational Effectiveness*. 17:1, 1–18.

Ben-Michael, E., Page, L., and **Keele, L.** (2024). "Approximate balancing weights for clustered observational studies." *Statistics in Medicine*. 43:12, 2332–2358.

Keele, L., Lenard, M., Miratrix, L., and Page, L. (2023). "A software tutorial for matching in clustered observational studies." *Observational Studies*. 9:4, 73–96.

Cattaneo, M., **Keele, L.**, and Titiunik, R. (2023). "A guide to regression discontinuity designs in medical applications." *Statistics in Medicine*. 42:24, 4484–4513.

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Keele, L., and White, I. (2019). "African-American turnout in majority-minority districts." *Political Science Research and Methods*. 7:3, 431–449.

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Keele, L. (2007). "Social capital and the dynamics of trust in government." *American Journal of Political Science*. 51:2, 241–255.

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Keele, L., and Wolak, J. (2006). "Value conflict and volatility in party identification." *British Journal of Political Science*. 36:4, 671–690.

Keele, L. (2005). "The authorities really do matter: Party control and trust in government." *Journal of Politics*. 67:3, 432–451.

Keele, L. (2005). "Macro measures and mechanics of social capital." *Political Analysis*. 13:2, 139–156.

Keele, L. (2005). "3-D graphics in R." *The Political Methodologist*. 13:2, 2–7.

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Clinical and Biomedical Applications

Goldberg, D., **Keele, L.**, Wirtalla, C., Sharpe, J., Rosenthal, J., Kaufman, E., and Kelz, R. (2026). "An assessment of hospital performance in emergency general surgery using direct and indirect standardization." *Annals of Surgery Open*. 7:1, e632.

Bushara, O., Dourlain, J., Farooq, M., Marostica, E., Ahn, S., Simons, R., Bruestle, K., **Keele, L.**, Singhal, S., Karakousis, G., and Kucharczuk, J. (2026). "Nodal upstaging and neoadjuvant therapy in lung adenocarcinoma: Evidence of a missed opportunity?" *JTCVS Open*. 32, 101824.

Bushara, O., Ahn, S., D'Orleans, C., Farooq, M., Marostica, E., McVey, J., Bruestle, K., **Keele, L.**, Karakousis, G., Kucharczuk, J., and Singhal, S. (2026). "Trends in surgical management of early-stage small cell lung cancer." *Clinical Lung Cancer*. 27:7, 87–94.

Yu, H., **Keele, L.**, Brom, H., Pittman, H., Varghese, R., McHugh, M., and Aiken, L. (2026). "The impact of Magnet recognition on nurse managers' assessments of work environment, quality, and safety: A cross-sectional study." *Journal of Nursing Management*. 2026, 1847111.

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Rosenthal, J., Brown, D., Rosen, C., Roberts, S., **Keele, L.**, Wirtalla, C., Kaufman, E., and Kelz, R. (2025). "The conditional effect of serious mental illness on emergency general surgery outcomes: An instrumental variable analysis." *The American Journal of Surgery*. 250, 116488.

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Tortorello, G., Shafique, N., **Keele, L.**, Susman, C., Dheer, A., Fayanju, O., Tchou, J., Miura, J., and Karakousis, G. (2024). "Longitudinal increases in time to surgery for patients with breast cancer: A national cohort study." *Annals of Surgical Oncology*. 31:10, 6804–6811.

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Sharoky, C., Sellers, M., **Keele, L.**, Wirtalla, C., Karakousis, G., Morris, J., and Kelz, R. (2018). "Does surgeon sex matter? Practice patterns and outcomes of female and male surgeons." *Annals of Surgery*. 267:6, 1069–1076.

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Weiss, S., **Keele, L.**, Balamuth, F., Vendetti, N., Ross, R., Fitzgerald, J., and Gerber, J. (2017). "Crystalloid fluid choice and clinical outcomes in pediatric sepsis: A matched retrospective cohort study." *The Journal of Pediatrics*. 182, 304–310.

Giuliano, J., Markovitz, B., Brierley, J., Levin, R., Williams, G., Lum, L.C., Dorofaeff, T., Cruces, P., Bush, J., **Keele, L.**, Nadkarni, V., Thomas, N., Fitzgerald, J., and Weiss, S. (2016). "Comparison of pediatric severe sepsis managed in U.S. and European intensive care units." *Pediatric Critical Care Medicine*. 17:6, 522–530.

Books and Book Chapters

Keele, L. (2008). *Semiparametric Regression for the Social Sciences*. London: Wiley and Sons.

Cattaneo, M., **Keele, L.**, and Titiunik, R. (2023). "Covariate adjustment in regression discontinuity designs." In *Handbook of Matching and Weighting Adjustments for Causal Inference*. Boca Raton, FL: Chapman and Hall/CRC, 153–168.

Keele, L., and Pimentel, S. (2023). "Matching with multilevel data." In *Handbook of Matching and Weighting Adjustments for Causal Inference*. Boca Raton, FL: Chapman and Hall/CRC, 185–204.

Imai, K., **Keele, L.**, Tingley, D., and Yamamoto, T. (2010). "Causal mediation analysis using `R`." In *Advances in Social Science Research Using R*, H. D. Vinod, ed. New York: Springer, 129–154.

MacKuen, M., Wolak, J., **Keele, L.**, Marcus, G., and Neuman, R. (2007). "The third way: Affective intelligence and the depiction of American democracy." In *The Affect Effect: Dynamics of Emotion in Political Thinking and Behavior*, A. Crigler, G. E. Marcus, M. MacKuen, and W. R. Neuman, eds. Chicago: University of Chicago Press, 124–151.

MacKuen, M., Wolak, J., **Keele, L.**, and Marcus, G. (2006). "The measure and mismeasure of emotion." In *Feeling Politics: Emotion in Political Information Processing*, D. P. Redlawsk, ed. New York: Palgrave Macmillan, 31–46.

Monographs and Reports

Grieve, R., Hutchings, A., Moler-Zapata, S., O'Neill, S., Lugo-Palacios, D., Silverwood, R., Cromwell, D., Kircheis, T., Silver, E., Snowdon, C., Charlton, P., Bellingan, G., Moonesinghe, R., **Keele, L.**, Smart, N., and Hinchliffe, R. (2023). "Clinical effectiveness and cost-effectiveness of emergency surgery for adult emergency hospital admissions with common acute gastrointestinal conditions: The ESORT study." *Health and Social Care Delivery Research*. Southampton (UK): National Institute for Health and Care Research.

Statistical Software

Keele, L., and Pimentel, S. `matchMulti`: Optimal Multilevel Matching using a Network Algorithm in `R`.

Keele, L. `rbounds`: An `R` package for calculating Rosenbaum's bounds with matched data.

Yamamoto, T., Tingley, D., **Keele, L.**, and Imai, K. `mediation`: An `R` package for causal mediation analysis.

Working Papers and Preprints

Ben-Michael, E., Feller, A., and **Keele, L.** (2026). "A weighting framework for clusters as confounders in observational studies." arXiv:2602.05041.

Zeng, Z., Levis, A., Lee, J., Kennedy, E., and **Keele, L.** (2025). "Nonparametric estimation of local treatment effects with continuous instruments." arXiv:2504.03063.

Rakshit, P., Levis, A., and **Keele, L.** (2024). "Local effects of continuous instruments without positivity." arXiv:2409.07350.

Levis, A., Kennedy, E., and **Keele, L.** (2024). "Nonparametric identification and efficient estimation of causal effects with instrumental variables." arXiv:2402.09332.

Bonvini, M., Zeng, Z., Yu, M., Kennedy, E., and **Keele, L.** (2023). "Flexibly estimating and interpreting heterogeneous treatment effects of laparoscopic surgery for cholecystitis patients." arXiv:2311.04359.

Bonvini, M., Kennedy, E., and **Keele, L.** (2023). "Minimax optimal subgroup identification." arXiv:2306.17464.

Keele, L., Small, D., Hsu, J., and Fogarty, C. (2019). "Patterns of effects and sensitivity analysis for differences-in-differences." arXiv:1901.01869.

Kang, H., and **Keele, L.** (2018). "Spillover effects in cluster randomized trials with noncompliance." arXiv:1808.06418.

Kang, H., and **Keele, L.** (2018). "Estimation methods for cluster randomized trials with noncompliance: A study of a biometric smartcard payment system in India." arXiv:1805.03744.

Grants

2022 PCORI (21-12555). Improved Statistical Methods for IV Designs in CER. Co-PI.

2021 National Library of Medicine (R01LM013361). Efficient Nonparametric Estimation of Heterogeneous Treatment Effects in Causal Inference. Co-PI.

2021 Institute of Education Sciences (R305D210014). Statistical Innovations for Clustered Observational Studies. Co-PI.

2019 Spencer Foundation Grant. Matching in Multilevel Contexts. Co-PI.

2015 Picwell Corp Grant for Research on Program Evaluation.

2001 National Science Foundation Dissertation Improvement Grant (SES-0112198).

Honors and Awards

2015 Best Software Award for the `mediation` package in `R`.

2013 Recipient of the Emerging Scholar Award for a young scholar making exceptional contributions to political methodology who is within ten years of their terminal degree, awarded by the Society of Political Methodology.

2011 Thomas R. Ten Have Citation for "exceptionally creative or skillful research on causal inference."

2002 Royster Society of Fellows Dissertation Fellowship. University of North Carolina-Chapel Hill.

2002 UNC-Chapel Hill Royster Society of Fellows Dissertation Completion Fellowship.

Conference Presentations

International Conference on Econometrics and Statistics. (2018-2023).

9th International Conference on Computational and Methodological Statistics. (2016, 2019-2023).

European Causal Inference Conference. (2016-2019,2023).

Joint Statistical Meetings. (2015-2021).

Atlantic Causal Inference Meeting. (2011-2012, 2015-2019, 2022-2023.)

Association for Public Policy Analysis & Management, Fall Research Conference. (2012-2013, 2015-2016)

West Coast Experiments Conference. (2013)

The Annual Meeting of the American Political Science Association (2001-2006, 2008-2021)

The Annual Meeting of the Midwest Political Science Association (2001-2016)

The Annual Summer Political Methodology Meetings (2001-2005, 2008-2016, 2018-2020, 2023)

Professional Activities

Secretary, American Statistical Association, Council of Sections

President, *Society for Causal Inference*

Steering Committee, *Society for Causal Inference*

Associate Editor, *Journal of the Royal Statistical Society, Series A*

Associate Editor, *Journal of Causal Inference*

Associate Editor, *Observational Studies*

Editorial Board, *Journal of Politics*

Editorial Board, *Journal of the Royal Statistical Society, Series A*

Editorial Board, *American Political Science Review*

Referee for *American Political Science Review*, *American Journal of Political Science*, *American Journal of Sociology*, *American Sociological Review*, *Biometrical Journal*, *Biometrics*, *Biostatistics*, *British*

Journal of Mathematical and Statistical Psychology, Cambridge University Press, *Economic & Politics*, *Economics and Human Biology*, *Electoral Studies*, *Journal of the American Statistical Association*, *Journal of Business and Economic Statistics*, *Journal of Educational and Behavioral Statistics*, *Journal of Experimental Political Science*, *Journal of Politics*, *Journal of the Royal Statistical Society, Series A, B, C*, *Medical Decision Making*, National Science Foundation, Oxford University Press, *PLoS One*, *Political Science Research and Methods*, *Prevention Science*, *Psychological Methods*, *Political Analysis*, *Political Behavior*, *Political Psychology*, *Public Opinion Quarterly*, *State Politics and Policy Quarterly*, *Statistics in Medicine*, *Statistical Methodology*, *Statistical Methods in Medical Research*, *Structural Equation Modeling*, Wiley & Sons.

Member of American Political Science Association, Methodology Section; Midwest Political Science Association; American Statistical Association; American Economic Association.

Consulting Experience

Program Evaluation. Department of Labor. (2020)

Educational Program Evaluation. American Institutes for Research. (2013-2017)

Educational Program Evaluation. Villanova University. (2011-2012)

Statistical Consultant. Booz Allen Hamilton. (2010-2012)

Statistical Consultant. Science Applications Corp. (2010-2012)

Invited Presentations

Northwestern University (2022); Princeton University (2022); UCLA (2020); Duke University (2020); Duke University (2019); Brown University (2019); University of Florida Statistics Workshop (2019); New York University (2019); University of Rochester (2017); American University (2017); University of Sydney (2017); Harvard Graduate School of Education (2017); European Union Institute (2017); White House Social and Behavioral Sciences Team (2016); Center for Surgery and Health Economics, University of Pennsylvania School of Medicine (2016); WZB - Berlin Social Science Center (2016); University of Florence (2016); University of Michigan (2016); Georgetown University (2015); Washington University, St. Louis (2015); Yale University (2015); University of Michigan (2015); University of California, Berkeley (2015); University of California, Davis (2015); University of Pennsylvania, Graduate School of Education (2015); Georgetown University (2014); NYU (2014); Columbia University (2014); Bloomberg School of Public Health, Johns Hopkins University; Oxford University (2014); American University (2013); West Coast Experiments Conference, Stanford University (2013); University of Illinois, Champagne-Urbana (2013); Abt Associates, Evaluation Methods Center Speaker Series (2013); Texas A&M (2013); American Institutes for Research (2013); Stanford Political Science Dept (2012); Stanford Graduate School of Business (2012); Columbia University (2012); Yale University (2011); University of Wisconsin, Madison (2011); University of Pennsylvania (2011); New York University (2011); Temple University (2011); Texas A&M (2010); Penn State University (2010); University of Michigan (2010); Columbia University (2010); University of Rochester (2009); New York University (2009); Columbia University (2008); Princeton University (2008); New York University (2006); Nuffield College, Oxford University (2004); Washington University in St. Louis (2004); University of South Carolina (2004); University of California-Berkeley (2004); Pennsylvania State University (2004); University of Rochester (2004); Ohio State University (2004); University of California, Davis (2003); University of Texas at Dallas (2003).