

# Kenneth J. Nieser, PhD

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## RESEARCH INTERESTS

Health disparities, algorithmic fairness, quality measurement

## EDUCATION & TRAINING

- |              |   |
|--------------|---|
| 2023–present | Postdoctoral Fellow, Center for Innovation to Implementation<br>VA Palo Alto Health Care System, Menlo Park, CA   |
| 2023–present | Postdoctoral Fellow, Department of Surgery<br>Stanford-Surgery Policy Improvement Research and Education Center<br>Stanford School of Medicine, Stanford, CA              |
| 2018–2023    | Ph.D. Epidemiology, Minor in Statistics<br>Department of Population Health Sciences, University of Wisconsin–Madison<br>School of Medicine and Public Health, Madison, WI |
| 2009–2013    | B.A. Physics and Mathematics, High Honors<br>Swarthmore College, Swarthmore, PA   |

## RESEARCH & PROFESSIONAL EXPERIENCE

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|-----------|---|
| 2020–2023 | Research Assistant, Department of Population Health Sciences, University of Wisconsin–Madison, Madison, WI. (PI: Amy Cochran) |
| 2019–2020 | Project Assistant, Department of Population Health Sciences, University of Wisconsin–Madison, Madison, WI. (PI: Amy Cochran)  |
| 2017–2018 | Senior Analyst, Healthgrades, Madison, WI   |
| 2015–2017 | Market Analyst, Healthgrades, Madison, WI   |
| 2014–2015 | Healthcare Data Analyst for Wisconsin Medicaid, HP Enterprise Services, Madison, WI   |
| 2013–2014 | Technical Services Analyst, Epic, Verona, WI  |

## AWARDS & FELLOWSHIPS

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|---------|--|
| 2023–25 | Big Data-Scientist Training Enhancement Program, U.S. Department of Veterans Affairs & National Cancer Institute |
| 2020    | Rankin/Skatrud Travel Award  |
| 2019    | Biology and Medicine through Mathematics (BAMM!) Travel Award  |
| 2019    | Student Research Grants Competition–Conference Presentation Funds  |

2018–19                      New Graduate Student Fellowship

## PEER-REVIEWED JOURNAL ARTICLES

\*equal contribution

1. **Nieser, K. J.**, Harris, A. H. S. (2024). Comparing methods for assessing the reliability of health care quality measures. *Statistics in Medicine*. 43(23), 4575-4594. <https://doi.org/10.1002/sim.10197>
2. Harris, A. H. S., Eddington, H., Shah, V., Shwartz, M., Gurewich, D., Rosen, A., Quinteros, B., Wilcher, B., **Nieser, K. J.**, Jones, G., Wu, J., Morris, A. M. (2024). Statistical Methods to Examine Racial and Ethnic Disparities in the Surgical Literature: A Review and Recommendations for Improvement. *Annals of Surgery*. 280(6), 960-965. <https://doi.org/10.1097/SLA.0000000000006440>
3. Harris, A. H. S., Liu, P., Breland, J. Y., **Nieser, K. J.**, Schmidt, E. M. (2024). Differences across Race and Ethnicity in the Quality of Antidepressant Medication Management. *Health Services Research*. 59(5), e14347. <https://doi.org/10.1111/1475-6773.14347>
4. Pingeton, B. C., **Nieser, K. J.**, Cochran, A., Goodman, S. H., Laurent, H., Sbrilli, M. D., Knight, B., Newport, D. J., Stowe, Z. N. (2024). Childhood Maltreatment Exposure is Differentially Associated with Transdiagnostic Perinatal Depression Symptoms. *Journal of Affective Disorders*, 358, 183-191. <https://doi.org/10.1016/j.jad.2024.05.021>
5. **Nieser, K. J.**, Harris, A. H. S. (2024). Split-sample reliability estimation in health care quality measurement: Once is not enough. *Health Services Research*, 59(4), e14310. <https://doi.org/10.1111/1475-6773.14310>
6. **Nieser, K. J.**, Cochran, A. L. (2023). Quantifying and reducing inequity in average treatment effect estimation. *BMC Medical Research Methodology*, 23(297). <https://doi.org/10.1186/s12874-023-02104-2>
7. Green, R. K.\*, **Nieser, K. J.\***, Jacobsohn, G. C., Cochran, A. L., Caprio, T. V., Cushman, J. T., Kind, A. J., Lohmeier, M., Shah, M. N. (2023). Differential Effects of an Emergency Department-to-Home Care Transitions Intervention in an Older Adult Population: A Latent Class Analysis. *Medical Care*, 61(6), 400-408. <https://doi.org/10.1097/MLR.0000000000001848>
8. **Nieser, K. J.**, Stowe, Z. N., Newport, J., Coker J. L., Cochran, A. L. (2023). Detection of differential depressive symptom patterns in a cohort of perinatal women: an exploratory factor analysis using a robust statistics approach. *eClinicalMedicine*, 57, 101830. <https://doi.org/10.1016/j.eclinm.2023.101830>
9. **Nieser, K. J.**, & Cochran, A. L. (2023). Addressing heterogeneous populations in latent variable settings through robust estimation. *Psychological Methods*, 28(1), 39-60. <https://doi.org/10.1037/met0000413>

10. Cochran, A. L., **Nieser, K. J.**, Forger, D. B., Zöllner, S., & McInnis, M. G. (2020). Gene-set Enrichment with Mathematical Biology (GEMB). *GigaScience*, 9(10), gaaa091. <https://doi.org/10.1093/gigascience/giaa091>

*Liquid crystals (research done as an undergraduate)*

11. Collings, P. J., Goldstein, J. N., Hamilton, E. J., Mercado, B. R., **Nieser, K. J.**, & Regan, M. H. (2015). The nature of the assembly process in chromonic liquid crystals. *Liquid Crystals Reviews*, 3(1), 1-27. <https://doi.org/10.1080/21680396.2015.1025305>
12. Mercado, B. R., **Nieser, K. J.**, & Collings, P. J. (2014). Cooperativity of the assembly process in a low concentration chromonic liquid crystal. *The Journal of Physical Chemistry. B*, 118(46), 13312–13320. <https://doi.org/10.1021/jp510025j>

## SUBMITTED TO PEER-REVIEWED JOURNALS

13. Ortiz-Torres, B. S., Cochran, A. L., Zayas-Cabán, G., **Nieser, K. J.**, REMLA: An R Package for Robust Expectation-Maximization Estimation for Latent Variable Models.
14. **Nieser, K. J.**, Harris, A. H. S., Binswanger, I. A., Clark, S. C., Finlay, A. K. Legal-involved veterans are less likely to receive guideline-concordant colorectal cancer screening.

## SOFTWARE

1. REMLA: Robust Expectation-Maximization Estimation for Latent Variable Models. <https://CRAN.R-project.org/package=REMLA>

## PRESENTATIONS & POSTERS AT SCIENTIFIC MEETINGS

\*equal contribution

1. Harris, A.H., Davis-Lopez, K., **Nieser, K.**, Massarweh, N. (Oct. 19–22, 2024). Surveying the Landscape of Consensus-Based Entity-endorsed Surgery-related Quality Measures. Annual Clinical Congress of the American College of Surgeons in San Francisco, CA [presentation].
2. **Nieser, K.**, Schmidt, E., Harris, A. (Jun. 29–Jul. 2, 2024). Health Care Quality Measure Reliability Estimates Can Hinge on the Method. 2024 Academy Health Annual Research Meeting in Baltimore, MD [poster].
3. Schmidt, E. M., Chen, C., **Nieser, K.**, Wagner, T. H., Harris, A.H.S. (Jun. 29–Jul. 2, 2024). Differences in Follow up after Psychiatric Hospitalizations for VA Purchased Versus VA Provided Care. 2024 Academy Health Annual Research Meeting in Baltimore, MD [presentation].
4. Harris, A., Eddington, H., Shah, V., Shwartz, M., Gurewich, D., Rosen, A., Quinteros, B., Wilcher, B., **Nieser, K.**, Jones, G., Wu, J., Morris, A. (Jun. 29–Jul. 2, 2024). Statistical Methods

- to Examine Racial and Ethnic Disparities in the Surgical Literature: A Review and Recommendations for Improvement. 2024 Academy Health Annual Research Meeting in Baltimore, MD [poster].
5. **Nieser, K.** (Jun. 25, 2024). Quality measure reliability estimates can depend on the method and the population. U.S. Department of Veterans Affairs, Office of Performance Measurement [online presentation].
  6. Harris, A., Eddington, H., Shah, V., Shwartz, M., Gurewich, D., Rosen, A., Quinteros, B., Wilcher, B., **Nieser, K.**, Jones, G., Wu, J., Morris, A. (Nov. 13, 2023). Statistical Methods to Examine Racial and Ethnic Disparities in the Surgical Literature: A Review and Recommendations for Improvement. ISPOR Europe 2023 in Copenhagen, Denmark. [poster].
  7. Odeh-Couvertier, V., **Nieser, K.**, Patterson, B., Zayas-Cabán, G., Cochran, A. (Oct. 15-18, 2023). Quasi-Experimental Designs for Learning Health Systems. INFORMS Annual Meeting in Phoenix, AZ. [poster].
  8. **Nieser, K.** (Sep. 25, 2023). Improving health care equity requires reliable quality measurement. S-SPIRE Center, Department of Surgery, Stanford University [presentation].
  9. Cochran, A., Odeh-Couvertier, V., Zayas-Cabán, G., **Nieser, K.**, Patterson, B. (May 24-26, 2023). Quasi-Experimental Designs for Learning Health Systems. American Causal Inference Conference in Austin, TX. [poster].
  10. **Nieser, K.**, Cochran, A. (Jun. 14–17, 2022). Average Treatment Effects in Synthetic Samples with More Equitable Representation. Society for Epidemiologic Research Annual Meeting in Chicago, IL [poster].
  11. Hansmann, K.\*, Jenkins, M.\*, **Nieser, K.\***, Svenson, E.\*, Walts, Z.\* (Apr. 25, 2022). PHS Antiracism Initiative: Research Methods Toolkit. Population Health Sciences Monday Seminar, University of Wisconsin–Madison [online presentation].
  12. **Nieser, K.** (Apr. 9, 2021). Optimizing for whom? The role of robustness in equitable algorithms. Machine Learning Day, Arizona State University [online presentation].
  13. **Nieser, K.** (Feb. 3, 2021). Detecting Inequity in the Analysis of Mental Health. Data Science Research Bazaar: Data Science for the Social Good, University of Wisconsin–Madison [online lightning talk].
  14. **Nieser, K.** (Dec. 15–18, 2020). Bias Analysis of Depression Rate Comparisons between Racial/Ethnic Groups. Society for Epidemiologic Research Annual Meeting [online poster].
  15. **Nieser, K.**, Stowe, Z., Cochran, A. (Mar. 9, 2020). Addressing Heterogeneity in Mental Illnesses through Robust Estimation. Department of Population Health Sciences Annual Poster Session, University of Wisconsin–Madison [poster].
  16. **Nieser, K.**, Stowe, Z., Cochran, A. (May 17–19, 2019). Robust estimation for factor loadings

with application to postpartum depression. Biology and Medicine through Mathematics (BAMM!) in Richmond, VA [poster].

17. **Nieser, K.**, Collings, P. (Mar. 18–22, 2013). Kinetics of Assembly and Dis-assembly of Structures Forming a Chromonic Liquid Crystal at Low Concentrations. American Physical Society March Meeting in Baltimore, MD [presentation].

## TEACHING

Teaching Associate, Swarthmore College

Spring 2013	General Physics II
Spring 2012	General Physics II with Biomedical Applications
Fall 2011	General Physics I
Fall 2011–12	Spacetime, Quanta & Cosmology

Tutor, Swarthmore College

Spring 2013	General Physics II
Spring 2012	General Physics II with Biomedical Applications
Fall 2011–12	General Physics I

## MENTORING

Mentee	Years	Program
Bryan Saúl Ortiz-Torres	2023-present	PhD in Industrial & Systems Engineering at UW-Madison

Stanford Science Small Groups: Mentored 4 local community college students to each explore a scientific question of interest (10 weeks in Fall 2024).

## SERVICE

Ad-hoc manuscript review

*BMC Medical Informatics and Decision Making* (2024)

*Journal of Medical Internet Research* (2022)

Ad-hoc grant review

University of Wisconsin Institute for Clinical and Translational Research (2023)

Ad-hoc conference abstract review

Society for Epidemiologic Research Annual Meeting (2022)

Grader

Pop Health 798: Epidemiologic Methods (2020)

Pop Health 651: Advanced Regression Methods for Population Health (2020)

Math 888: Topics in Mathematical Data Science—Causal inference (2022)