

Jeff Hoover
Orlando, FL
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Education

Ph.D. Educational Psychology & Research, May 2022

University of Kansas – Lawrence, Kansas

- Dissertation: “Using Machine Learning to Identify Causes of Differential Item Functioning”
- Advisor: Bruce Frey
- Emphasis: Research, Evaluation, Measurement, and Statistics

M.Ed. Clinical Psychological Assessment, May 2016

Vanderbilt University – Nashville, Tennessee

M.S. Psychology, August 2013

Lipscomb University – Nashville, Tennessee

- Thesis: “Curbing the Defensive Reaction Associated with Obsessive Passion and Finding a Correlation between Personality Traits and Obsessive and Harmonious Passion”
- Advisor: Dale Alden

B.S. Mathematics, May 2011

Lipscomb University – Nashville, Tennessee

- Senior Project: “Overlaying Virtual Mosaic Knot Diagrams”
- Advisor: Mark Miller

Employment

Accessible Teaching, Learning and Assessment Systems (ATLAS)

August 2018 – present

University of Kansas

- Contribute to the development and implementation of a psychometric research program focused on diagnostic classification modeling, including presentation of findings to multiple audiences.
- Collaborate on the strategic identification of operational research studies to generate additional validity evidence.
- Lead projects across functional teams to design, implement, and expand the products delivered by an operational assessment program.
- Guide the responsible integration of emerging technologies (e.g., machine learning, artificial intelligence, process data) into an operational assessment program, ensuring technical rigor and operational feasibility.
- Develop and maintain internal and external software to support psychometric modeling, including operational development for ATLAS

Position History

- Senior Psychometrician (August 2026 – present)
- Psychometrician (May 2022 – August 2026)
- Psychometrician Associate (March 2020 – May 2022)
- Graduate research assistant (August 2018 – March 2020)

University of Kansas Medical Center

August 2016 – August 2018

Study and recruitment coordinator

- Coordinated participant recruitment from multiple clinics, databases, and community organizations
- Recruited participants, scheduled participant visits, coordinated study team appointments with participants, screened participants according to strict eligibility standards, assisted with baseline assessments, coordinated multiple arms of a clinical trial intervention, and maintained IRB information for site monitoring and IRB renewal
- Assisted lab members with their dissertation projects (e.g., manuscript preparation, recruitment, conceptualization), assisted students with proofreading and revisions on dissertation proposals and publications, and represented our lab on the Building Advisory Committee.

Peabody Research Institute

December 2014 – December 2016

Vanderbilt University

Meta-analysis coder

- Retrieved articles and studies, conducted eligibility screening, and coded full texts as a part of multiple meta-analysis projects
- Preparing coded study information to be analyzed and ensured the quality of the data contained in the database
- Recorded information pertinent to the research methodology used in the research studies, tracked progress for individual coding assignments, and queried authors for additional information

Publications

- Monzon, A. D., **Hoover, J. C.**, Pierce, J. S., Wasserman, R., Ulysse, S., & Patton, S. R. (*in press*). Behavioral interventions in pediatric Type 1 diabetes management: An updated meta-analysis. *Pediatrics*.
- Thompson, W. J., Nash, B., Clark, A. K., & **Hoover, J. C.** (2023). Using simulated retests to estimate the reliability of diagnostic assessment systems. *Journal of Educational Measurement*, 60(3), 455-475. doi: 10.1111/jedm.12359
- Hoover, J. C.** (2022). Neural networks. In B. B. Frey (Ed.) *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (2nd ed., Vol. 1, pp. 1055 - 1057). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781071812082.n385
- Hoover, J. C.** (2022). Machine learning. In B. B. Frey (Ed.) *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (2nd ed., Vol. 1, pp. 842 - 847). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781071812082.n314
- Hoover, J. C.** (2022). Adaptive designs in clinical trials. In B. B. Frey (Ed.) *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (2nd ed., Vol. 1, pp. 11 - 12). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781071812082.n11
- Hoover, J. C.** (2022). Bayesian adaptive randomization design. In B. B. Frey (Ed.) *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation* (2nd ed., Vol. 1, pp. 89 - 92). Thousand Oaks, CA: SAGE Publications, Inc. doi: 10.4135/9781071812082.n41

- Hoover, J. C.**, Alenazi, A. M., Alshehri, M. M., Alqahtani, B. A., Alothman, S., Sarmento, C., Yahya, A., Rucker, J. L., & Kluding, P. M. (2021). Recruiting and retaining patients with breast cancer in exercise trials: A meta-analysis. *Translational Journal of the American College of Sports Medicine*, 6(1).
- Alothman, S., **Hoover, J. C.**, Alshehri, M. M., Alenazi, A. M., Wick, J., LeMaster, J., Rucker, J., & Kluding, P. M. (2020). Test-retest reliability of ActivPAL in measuring sedentary behavior and physical activity in people with type 2 diabetes. *Journal of Physical Activity & Health*, 17(11), 1134-1139. doi: 10.1123/jpah.2019-0506
- Alqahtani, B. A., Alenazi, A. M., **Hoover, J. C.**, Alshehri, M. M., Aglhamdi, M., Osailan, A., & Khunti, K. (2020). Incidence of stroke among Saudi population: A systematic review and meta-analysis. *Neurological Sciences*, 41, 3099-3104. doi: 10.1007/s10072-020-04520-4
- Alshehri, M. M., Alenazi, A. M., **Hoover, J. C.**, Alothman, S., Phadnis, M., Miles, J. M., Kluding, P., & Siengasukon, C. (2020). A comparison of diabetes self-care behavior in people with Type 2 Diabetes with and without clinical insomnia. *Acta Diabetologica*, 57(6), 651-659. doi: 10.1007/s00592-019-10470-y
- Alshehri, M. M., Alenazi, A. M., **Hoover, J. C.**, Alothman, S. A., Phadnis, M. A., Rucker, J. L., Befort, C. A., Miles, J. M., Kluding, P. M., Siengasukon, C.F. (2019). Effect of cognitive behavioral therapy for insomnia-on-insomnia symptoms for individuals with Type 2 Diabetes: Protocol for a pilot randomized controlled trial. *JMIR Res Protoc*, 8(12):e14647. doi: 10.2196/14647
- Alqahtani, B. A., Alshehri, M. M., **Hoover, J. C.**, & Alenazi, A. M. (2019). Prevalence of falls among older adults in the Gulf Cooperation Council Countries: A systematic review and meta-analysis. *Archives of Gerontology and Geriatrics*, 83, 169-174. doi: 10.1016/j.archger.2019.04.006
- Hoover, J. C.**, Alothman, S., Alenazi, A. M., Alshehri, M. M., Rucker, J., & Kluding, P. M. (2018). Recruitment for exercise or physical activity interventions: A protocol for systematic review. *BMJ Open*, 8(3):e019546. doi:10.1136/bmjopen-2017-019546
- Alenazi, A. M., Alshehri, M. M., **Hoover, J. C.**, Yabroudi, M. A., Kachanathu, S. J., & Liu, W. (2018). The effect of t'ai chi exercise on lipid profiles: A systematic review and meta-analysis of randomized clinical trials. *The Journal of Alternative and Complementary Medicine*, 24(3), 220-230.
- Hoover, J. C.** (2017). Using routines to improve diversity in higher education institutions. *InterActions: UCLA Journal of Education and Information*, 13(2). Retrieved from <http://escholarship.org/uc/item/7cs2t44d>

Manuscripts Under Review

- Hoover, J. C.**, Thompson, W. J., Nash, B., & Clark, A. K. (*under review*). Process data evaluation and appraisal lens (PD-EVAL): Framework for vetting the evidentiary utility of process data.

External / Federal Grants (Currently Funded)

Other Personnel (Psychometrician): *Expanding the Functionality and Accessibility of Software for Diagnostic Measurement* (2024-2026). USED, Institution of Educational Sciences; \$350,000. PI: W. Jake Thompson

Other Personnel (Psychometrician): *Pathways for Instructionally Embedded Assessment (PIE)* (2022-2026). USED, Office of Elementary and Secondary Education, Office of School Support and Accountability; \$2,500,000. PI: Brooke Nash

External / Federal Grants (Submitted)

Principal Investigator: *AI-Enhanced Feedback for DCM-Based Assessments* (2025-2027). USED, Institution of Educational Sciences; \$400,000

Principal Investigator: *SUMVAL: Summarizing Validity Evidence for Process Data* (2025-2027). USED, Institution of Educational Sciences; \$300,000

Internal Grants (Funded)

Principal Investigator: *Advancing Personalized Map-Based Linkage Level Recommendations* (2026). Accessible Teaching, Learning, and Assessment Systems; \$20,000

Principal Investigator: *Feasibility of NEXTMAP (Next-Skill Evaluation & Targeting via Map-Based Analytics)* (2026). Accessible Teaching, Learning, and Assessment Systems; \$5,000

Conference Presentations

Clark, A., & Hoover, J. C. (2026, October). Next Skill Evaluation & Targeting via Map-Based Analytics. Coordinated session presented at the NCME Artificial Intelligence in Measurement and Education conference, Pittsburgh, PA.

Hoover, J. C., & Thompson, W. J. (2024, June). Evaluating Bayesian transition diagnostic classification models for reporting within-year progress. Presentation given at the Modern Modeling Methods conference, Storrs, CT.

Thompson, W. J., Nash, B., & Hoover, J. C. (2023, September). Using diagnostic models to evaluate student learning hierarchies in a large-scale assessment. Presentation given at the Frontier Research in Educational Measurement, Oslo, Norway.

Hoover, J. C., Thompson, W. J., & Frey, B. B. (2023, April). Using machine learning to identify causes of differential item functioning in log-linear cognitive diagnosis models. Paper presented at the National Council on Measurement in Education Annual Meeting, Chicago, IL.

Hoover, J. C., & Thompson, W. J. (2023, April). Evaluating the performance of person-fit detection methods in diagnostic classification models. Paper presented at the National Council on Measurement in Education Annual Meeting, Chicago, IL.

Hoover, J. C., & Thompson, W. J. (2022, April). Modifying the M₂ statistic to handle missing data. Paper presented at the National Council on Measurement in Education Annual Meeting, San Diego, CA.

- Hoover, J. C.,** Kobrin, J. L., Thompson, W. J., & Wang, W. (2022, April). Development and evaluation of a composite item-fit statistic for diagnostic classification models. Paper presented at the National Council on Measurement in Education Annual Meeting, San Diego, CA.
- Hoover, J. C.,** Thompson, W. J., Nash, B., & Kobrin, J. L. (2021, June). The I-SMART project: Empirical map validation. Paper presented at the National Council on Measurement in Education Annual Meeting, Baltimore, MD. (Virtual conference)
- Hoover, J. C.,** Thompson, W. J., Clark, A. K., & Nash, B. (2020, September). Diagnostic assessment: DIF detection from binary and aggregate mastery classifications. Paper presented at the National Council on Measurement in Education Annual Meeting, San Francisco, CA. (Conference cancelled)
- Rocha, L., Niileksela, C., Frey, B., DeLuca, T., Simonsen, M., Lee, S., Garcia, A., & **Hoover, J.** (2020, June). *Online graduate student surveys: Engagement, Technology, and instructor behaviors*. Poster presented at the International Society for Technology in Education, Anaheim, CA.
- Alshehri, M., Alenazi, A., Alothman, S., Alqahtani, B., **Hoover, J.**, Waitman, L., & Kluding, P. (2020, February). *The Prevalence and Association of Sleep Disorders with Osteoarthritis in Older Adults: A Retrospective Study*. Poster presented at the Combined Sections Meeting (CSM), Denver, CO.
- Hoover, J. C.,** Alenazi, A. M., Sarmiento, C., Alothman, S., Alshehri, M. M., Yahya, A., Rucker, J. L., Kluding, P. M. (2019, November). *Recruitment and Retention in Exercise or Physical Activity Studies Involving Patients with Breast Cancer*. Poster presented at the American Congress of Rehabilitation Medicine (ACRM) conference, Chicago, IL.
- Alqahtani, B., Alshehri, M. M., **Hoover, J. C.,** & Aqeel Alenazi, A. M. (2019, November). *Alarming high prevalence of falls among older adults in the Arabian Gulf Cooperation Council Countries*. Poster presented at the American Congress of Rehabilitation Medicine (ACRM) conference, Chicago, IL.
- Alenazi, A. M., Alshehri, M. M., **Hoover, J. C.,** Alothman, S., Yahya, A., Sarmiento, C., Rucker, J., & Kluding, P. M. (2019, January). *Factors related to successful recruitment and retention for exercise or physical activity interventions in people with arthritis: A systematic review and meta-analysis*. Poster presented at the Combined Sections Meeting (CSM), Washington D.C.
- Alshehri, M. M., **Hoover, J. C.,** Alenazi, A. M., Alothman, S., Yahya, A., Sarmiento, C., Rucker, J., & Kluding, P. M. (2019, January). *Recruitment and retention in exercise or physical activity related studies in pain: A systematic analytical review*. Poster presented at the Combined Sections Meeting (CSM), Washington D.C.
- Alenazi, A. M., Alshehri, M. M., Alothman, S., **Hoover, J. C.,** Sharma, N., Rucker, J., Bindawas, S., & Kluding, P. M. (2018, October). *The Impact of Diabetes on Knee Pain Severity and Bilateral Knee Joint Involvement: Data from the Osteoarthritis Initiatives*. Poster presented at the Missouri Physical Therapy Association (MPTA), Kansas City, MO.
- Hoover, J. C.,** Yahya, A., Rucker, J. L., Pasnoor, M., & Kluding, P. M. (2018, August). *Exercise-related blood glucose drop in adults with Diabetic Peripheral Neuropathy*. Poster presented at the American Psychological Association (APA), San Francisco, CA.

- Alshehri, M. M., Alenazi, A. M., Alajam, R., Jiawei, D., Alothman, S., **Hoover, J. C.**, Rucker, J., Siengsukon, C. P., Perlis, M. L., & Kluding, P. (2018, June). *The impact of insomnia on A1c variability and glucose level in people with type 2 diabetes: A retrospective analysis*. Poster presented at the Associated Professional Sleep Societies, LLC, Baltimore, MD.
- Alothman, S., Alshehri, M. M., Alenazi, A. M., **Hoover, J. C.**, Rucker, J., Pasnoor, M., & Kluding, P. M. (2018, April). *Sedentary behavior relationship with physical function in people with Type 2 Diabetes*. Poster presented at the Kansas Physical Therapy Association (KPTA), Wichita, KS.
- Hoover, J. C.**, Yahya, A., Rucker, J. L., Pasnoor, M., & Kluding, P. M. (2018, April). *Exercise-related blood glucose change in adults with Type 2 Diabetes and Diabetic Peripheral Neuropathy*. Poster presented at the Kansas Physical Therapy Association (KPTA), Wichita, KS.
- Alenazi, A. M., Alshehri, M. M., **Hoover, J. C.**, Yabroudi, M., Kachanathu, S., Rucker, J., & Liu, W. (2018, February). The effect of tai chi exercise on lipid profiles. A systematic review and meta-analysis of randomized clinical trials. Platform presentation given at the Combined Sections Meeting (CSM), New Orleans, LA.
- Alenazi, A. M., Alshehri, M. M., **Hoover, J. C.**, Alothman, S., Sharma, N., Bindawas, S., & Kluding, P. M. (2018, February). *The relationship between diabetes and knee pain severity, unilateral or bilateral knee pain: Data from the Osteoarthritis Initiatives*. Poster presented at the Combined Sections Meeting (CSM), New Orleans, LA.
- Alothman, S., Alshehri, M. M., Alenazi, A. M., **Hoover, J. C.**, Rucker, J., Pasnoor, M., & Kluding, P. M. (2018, February). *Sedentary behavior relationship with physical function in people with Type 2 Diabetes*. Poster presented at the Combined Sections Meeting (CSM), New Orleans, LA.
- Alshehri, M. M., Alenazi, A. M., Alsouhibani, A., Obaidat, S., **Hoover, J. C.**, Alothman, S., & Kluding, P. M. (2018, February). *Visceral fat and neuropathic pain in people with Diabetic Peripheral Neuropathy*. Poster presented at the Combined Sections Meeting (CSM), New Orleans, LA.
- Alshehri, M. M., Alenazi, A. M., Alothman, S., **Hoover, J. C.**, Siengsukon, C., & Kluding, P. M. (2017, April). *Poor sleep quality in people with painful neuropathy*. Platform presentation given at the Kansas Physical Therapy Association (KPTA), Wichita, KS.
- Alshehri, M. M., Alenazi, A. M., Alothman, S., **Hoover, J. C.**, Siengsukon, C., & Kluding, P. M. (2017, February). *Poor sleep quality in people with painful neuropathy*. Poster presented at the Combined Sections Meeting (CSM), San Antonio, TX.
- Hoover, J. C.** (2013, November). *Curbing the Defensive Reaction Associated with Obsessive Passion and Finding a Correlation between Personality Traits and Obsessive and Harmonious Passion*. Poster presented at the Tennessee Psychological Association (TPA), Nashville, TN.

Invited Presentations

- Hoover, J. C.** & Kingston, N. (2019, December). Using PPMC to check model fit in a random effects meta-analysis. *Educational Psychology Proseminar*, Lawrence, KS.
- Hoover, J. C.** (2019, September). Recruitment and Retention in the Breast Cancer Population. *Educational Psychology Proseminar*, Lawrence, KS.

Waitman, L. R., Vreeman, D. J., **Hoover, J. C.**, & Kluding, P. M. (2018, February). Partnering with Informatics to Enhance Participant Recruitment for Trials. *American Physical Therapy Association Combined Sections Meeting (CSM)*, New Orleans, LA.

Hoover, J. C. (2017, March). How to increase recruitment. *University of Kansas Medical Center Student Interest Group in Rehabilitation Science (SIGRS) Lecture Series*, Kansas City, KS.

Technical Reports

Winters, P., Karvonen, M., D'Brot, J., **Hoover, J. C.**, & Warren, S. H. (2022). State accountability systems: Measuring & reporting academic growth for students with significant cognitive disabilities. The Council of Chief State School Officers. <https://learning.ccsso.org/state-accountability-systems-measuring-reporting-academic-growth-for-students-with-significant-cognitive-disabilities>

Thompson, W. J., & **Hoover, J. C.** (2021). Using propensity scores to evaluate changes in cross-year performance distributions (Technical Report No. 21-01). University of Kansas, Accessible Teaching, Learning, and Assessment Systems.

Clark, A. K., Kavitsky, E., **Hoover, J. C.**, & Karvonen, M. (2021). Summary of 2020-2021 student performance on DLM assessments (Project Brief No. 21-03). University of Kansas, Accessible Teaching, Learning, and Assessment Systems.

Clark, A. K., Kavitsky, E., & **Hoover, J.** (2021). Preliminary summary of 2020-2021 participation in DLM assessments (Project Brief No. 21-02). University of Kansas, Accessible Teaching, Learning, and Assessment Systems.

Evaluation Reports

Niileksela, C. R., Frey, B. B., DeLuca, T. A., Summers Rocha, L., Garcia, A. M., & **Hoover, J. C.** (2020). Evaluation of the KU School of Education & Human Sciences Everspring Initiative: 6th Annual Report. Lawrence, KS: School Program Evaluation and Research (SPEaR).

Niileksela, C. R., Frey, B. B., DeLuca, T. A., Summers Rocha, L., Simonsen, M., Lee, S. W., Garcia, A. M., & **Hoover, J. C.** (2019). Evaluation of the KU School of Education Everspring Initiative: 5th Annual Report. Lawrence, KS: School Program Evaluation and Research (SPEaR).

R Packages

Thompson, W. J., & Hoover, J. C. (2026). *measr: Bayesian psychometric measurement using 'Stan'*. R package version 2.0.1. <https://doi.org/10.32614/CRAN.package.measr>

Hoover, J. C., & Thompson, W. J. (2023). *dcm2*. R package version 1.0.2. <https://cran.r-project.org/web/packages/dcm2/index.html>

Hoover, J. C., & Thompson, W. J. (2023). *tdcmStan*. R package version 2.0.0. <https://cran.r-project.org/web/packages/tdcmStan/index.html>

Hoover, J. C., & Kingston, N. (2019). *metamodelfitr*. R package version 0.1.0. <https://github.com/jeffreych Hoover/metaModelFitR>

Thompson, W. J., Pablo, N., & Hoover, J. C. (2019). *ratlas*. R package version 0.0.0.9000.
<https://github.com/atlas-aai/ratlas>

Professional Affiliations

- American Educational Research Association, 2020 - present
- National Council on Measurement in Education, 2019 - present
- Supporter of the Cochrane Collaboration, 2017 - present
- American Evaluation Association, 2019 - 2020
- Society for Personality and Social Psychology, 2018 - 2019
- International Society For Intelligence Research, 2018 - 2019
- American Psychological Association (APA), 2012 - 2018
 - American Psychological Association of Graduate Students (APAGS), 2012 - 2013

Institutional Service

- Educational Psychology Faculty Search Committee, University of Kansas, 2022
- Program student representative, University of Kansas, 2019-2020
- Educational Psychology Faculty Search Committee, University of Kansas, 2018-2019

Reviewer

- Behaviormetrika
- Educational Measurement: Issues and Practice
- Frontiers in Psychology: Personality and Social Psychology
- National Council on Measurement in Education annual meeting
- American Educational Research Association annual meeting

Honors and Awards

- University of Kansas School of Education Scholarship, 2019 - 2020
- University of Kansas Chancellors Fellowship, 2018 - present
- Lipscomb University Presidential Scholar, 2007 - 2011
- Lipscomb University Provosts List, 2008 - 2011
- Lipscomb University Deans List, 2007

Statistical Software Proficiency

- R
- Stan
- R Markdown

Relevant Skills

- Latex
- Git
- Python
- Zotero