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YoumiSuk

Curriculum Vitae

Updated on March 15, 2026

Education

2016–2021 **Ph.D. in Quantitative Methods**, *Department of Educational Psychology. University of Wisconsin-Madison*, (awarded on Aug. 22, 2021)

M.S. in Statistics, *Department of Statistics. University of Wisconsin-Madison*, (awarded on Dec. 22, 2019)

2014–2016 **M.A. in Educational Measurement and Evaluation**, *Department of Education. Seoul National University. South Korea*, (awarded on Aug. 20, 2016)

2010–2014 **B.S. in Earth Science Education**, *Department of Earth Science Education. Seoul National University. South Korea*, (awarded on Feb. 28, 2014)

Academic Positions & Employment

9/1/2022– **Assistant Professor of Applied Statistics**, *Department of Human Development, Teachers College, Columbia University*

11/9/2022– **Faculty Member of the Data Science Institute (DSI)**, *Columbia University*

8/10/2021–8/24/2022 **Assistant Professor of Data Science, General Faculty**, *School of Data Science, University of Virginia*

6/1/2018-8/8/2018 **Researcher Intern**, *American Institutes for Research (AIR), Washington D.C.*

Research Interests

Causal Machine Learning, Quasi-Experimental Designs, Optimal Treatment Regimes, Multilevel Modeling, Algorithmic Fairness, and Analysis of Process Data

– Leveraging process data to advance causal inference and psychometric methods
– Evaluating algorithmic fairness and test fairness in educational settings
– Developing robust machine learning for causal inference in multilevel data
– Designing optimal treatment regimes for data-driven, personalized education and learning
– Utilizing generative models for method evaluation

Publications

† = Methodological Work; * = Graduate Student Mentored. The publication year listed reflects the volume and issue year when available.

27† **Suk, Y.**, & Lyu, W. (2026). Rethinking item fairness using single world intervention graphs. *Journal of Educational and Behavioral Statistics*. https://doi.org/10.3102/10769986251415570

26† **Suk, Y.**, & Park, C. (2026). Causal mediation and functional outcome analysis with process data. *Psychometrika*. https://doi.org/10.1017/psy.2026.10087 (Equal Contribution)

25† **Suk, Y.**, Pan, C.*, & Yang, K. (2025). Using Generative AI for sequential data generation in Monte Carlo simulation studies. *Journal of Educational and Behavioral Statistics*. https://doi.org/10.3102/10769986251397559

24† Lee, Y., & **Suk, Y.** (2025). Evidence factors in fuzzy regression discontinuity designs with sequential treatment assignments. *Psychometrika, 90*(4), 1400-1418. https://doi.org/10.1017/psy.2025.10033

23† **Suk, Y.**, & Kim, Y. (2025). Fuzzy regression discontinuity designs with multiple control groups under one-sided noncompliance: Evaluating extended time accommodations. *Journal of Educational and Behavioral Statistics, 50*(6), 962-984. https://doi.org/10.3102/10769986241268902

22† **Suk, Y.**, & Han, K. T. (2025). Evaluating intersectional fairness in algorithmic decision making using intersectional differential algorithmic functioning. *Journal of Educational and Behavioral Statistics, 50*(5), 833-862. https://doi.org/10.3102/10769986241269820

21† **Suk, Y.** (2024). Regression discontinuity designs in education: A practitioner's guide. *Asia Pacific Education Review, 25,* 629–645. https://doi.org/10.1007/s12564-024-09956-3

20† **Suk, Y.**, & Han, K. T. (2024). A psychometric framework for evaluating fairness in algorithmic decision making: Differential algorithmic functioning. *Journal of Educational and Behavioral Statistics, 49*(2), 151-172. https://doi.org/10.3102/10769986231171711

19† **Suk, Y.** (2024). A within-group approach to ensemble machine learning methods for causal inference in multilevel studies. *Journal of Educational and Behavioral Statistics, 49*(1), 61-91. https://doi.org/10.3102/10769986231162096

18† **Suk, Y.**, & Park, C. (2023). Designing optimal, data-driven policies from multisite randomized trials. *Psychometrika*, 88, 1171–1196. https://doi.org/10.1007/s11336-023-09937-2

17† Lyu, W., Kim, J.-S., & **Suk, Y.** (2023). Estimating heterogeneous treatment effects within latent class multilevel models: A Bayesian approach. *Journal of Educational and Behavioral Statistics, 48*(1), 3-36. https://doi.org/10.3102/10769986221115446

16† **Suk, Y.**, & Kang, H. (2023). Tuning random forests for causal inference under cluster-level unmeasured confounding. *Multivariate Behavioral Research, 58*(2), 408-440. https://doi.org/10.1080/00273171.2021.1994364

15 Piasecki, T. M., Smith, S. S., Baker, T. B. **et al.** (2023). Smoking status, nicotine medication, vaccination, and COVID-19 hospital outcomes: Findings from the COVID EHR Cohort at the University of Wisconsin (CEC-UW) study. *Nicotine & Tobacco Research, 25*(6), 1184-1193. https://doi.org/10.1093/ntr/ntac201

14 Nolan, B., Piasecki, T. M., Smith, S. S. **et al.** (2023). Relations of current and past cancer with severe outcomes among 104,590 hospitalized COVID-19 patients: The COVID EHR cohort at the University of Wisconsin. *Cancer Epidemiology, Biomarkers & Prevention, 32*(1), 12-21. https://doi.org/10.1158/1055-9965.EPI-22-0500

13† **Suk, Y.**, Steiner, P. M., Kim, J.-S., & Kang, H. (2022). Regression discontinuity designs with an ordinal running variable: Evaluating the effects of extended time accommodations for English-language learners. *Journal of Educational and Behavioral Statistics, 47*(4), 459–484. https://doi.org/10.3102/10769986221090275

12† **Suk, Y.**, & Kang, H. (2022). Robust machine learning for treatment effects in multilevel observational studies under cluster-level unmeasured confounding. *Psychometrika, 87*(1), 310–343. https://doi.org/10.1007/s11336-021-09805-x

11 Fiore, M. C., Smith, S. S., Adsit, R. T. **et al.** (2022). The first 20 months of the COVID-19 pandemic: mortality, intubation and ICU rates among 104,590 patients hospitalized at 21 United States health systems. *PLOS ONE*. https://doi.org/10.1371/journal.pone.0274571

10 **Suk, Y.**, & Lee, J. (2021). Evaluating the effects of school club activities on collaborative competency using random forests for causal inference. *Survey Research, 22*(4), 55-78. http://dx.doi.org/10.20997/SR.22.4.3 (written in Korean)

9† **Suk, Y.**, Kang, H., & Kim, J.-S. (2021). Random forests approach for causal inference with clustered observational data. *Multivariate Behavioral Research, 56*(6), 829-852. https://doi.org/10.1080/00273171.2020.1808437

8† **Suk, Y.**, Kim, J.-S., & Kang, H. (2021). Hybridizing machine learning methods and finite mixture models for estimating heterogeneous treatment effects in latent classes. *Journal of Educational and Behavioral Statistics, 46*(3), 323-347. https://doi.org/10.3102/1076998620951983

7 Kent, R. D., Eichhorn, J., Wilson, E. M., **Suk, Y.**, Bolt, D. M., & Vorperian, H. K. (2021). Auditory-perceptual features of speech in children and adults with Down syndrome: a speech profile analysis. *Journal of Speech, Language, and Hearing Research, 64*(4), 1157-1175. https://doi.org/10.1044/2021_JSLHR-20-00617

6 **Suk, Y.**, Lyu, W., & Steiner, P. M. (2019, August 1). Review of the book Using Classification and Regression Trees: A Practical Primer, by X. Ma. Teachers College Record, https://www.tcrecord.org ID Number: 23015.

5 Kim, J.-S., & **Suk, Y.** (2019). Specifying multilevel mixture selection models in propensity score analysis. In Wiberg, M., Culpepper, S., Janssen, R., González, J., & Molenaar, D (Eds.), *Quantitative psychology research: The 83rd annual meeting of the psychometric society* (pp. 279-291). New York, NY: Springer.

4 **Suk, Y.**, & Kim, J.-S. (2019). Measuring the heterogeneity of treatment effects with multilevel observational data. In Wiberg, M., Culpepper, S., Janssen, R., González, J., & Molenaar, D (Eds.), *Quantitative psychology research: The 83rd annual meeting of the psychometric society* (pp. 265-277). New York, NY: Springer. https://doi.org/10.1007/978-3-030-01310-3_24

3 **Suk, Y.**, Cho, Y. H., & Jeong, D. H. (2017). Profile analysis of elementary school students' smart device usage. *Educational Technology International, 18*(1), 27-47.

2 Park, H.-J., Lee, J., & **Suk, Y.** (2016). A trend analysis of academically resilient students and school characteristics affecting students' academic resilience in middle school. *Asian Journal of Education, 17*(4), 193-213. (written in Korean)

1 Cho, Y. H., Park, H.-J., Kim, J. Y., **Suk, Y.**, & Lee, S. (2015). Exploring roles of feedback to facilitate online discussion. *Asian Journal of Education, 16*(2), 289-313. (written in Korean)

Papers Under Review or Revision

* = Graduate Student Mentored

R5 **Suk, Y.**, Cai, Y.*, & Lovett, B. J. (2026). Using response process data to measure test-taking effort in students receiving extended time accommodations (Under Review at *Applied Measurement in Education*)

R4 Akindele, S., **Suk, Y.**, & Yang, K. (2026) An empirical study of synthetic data generators for sequences. *The 2026 ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD 2026) (Under Review)

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R3 **Suk, Y.**, & Lyu, W. (2026). Identifying causes of test unfairness: Manipulability and separability. *arXiv*. `https://doi.org/10.48550/arXiv.2601.13449` (Under Review at *Journal of Educational and Behavioral Statistics*)

R2 Pan, C.*, Li, Y.*, & **Suk, Y.** (2026). Learning feasible optimal treatment regimes for personalized decision-making. *PsyArXiv*. `https://doi.org/10.31234/osf.io/arp48_v1`

R1 **Suk, Y.**, Park, C., Pan, C.*, & Kim, K. (2024+). Fair and robust estimation of heterogeneous treatment effects for optimal policies in multilevel studies. *PsyArXiv*. `https://doi.org/10.31234/osf.io/xz3jw_v2` (Conditionally accepted at *Multivariate Behavioral Research*)

Papers in Preparation

Suk, Y. & Li, Y.*. Robust causal effect estimation in multilevel studies with unmeasured covariates via Variational Autoencoders

Park, C., & **Suk, Y.** Separable effects in four-arm and two-arm designs

Pan, C.*, Li, Y.*, Harris, T.*, & **Suk, Y.** Estimating optimal dynamic treatment regimes for personalized education: A tutorial and applications with machine learning

Suk, Y., Pan, C.*, & Xiao, W.* AI-based Monte Carlo simulations for honest method evaluation using synthetic multilevel data

Grants and Funding

○ Funded Projects

1/2023-12/2026 **PI**, *Tailoring Personalized Mathematics Education for High School Students Using Dynamic Treatment Regimes*, National Science Foundation (NSF), $349,995.
`https://www.nsf.gov/awardsearch/showAward?AWD_ID=2225321&HistoricalAwards=false`

○ Submitted Projects

PI, *Causal Inference with Process Data in STEM Testing for Program Evaluation*, National Science Foundation Faculty Early Career Development Program (NSF CAREER), $973,960.

PI, *Beyond the Final Score: Leveraging Process Data for Time-Varying Separable Effects and Accurate Ability Estimation in Education*, NAEd/Spencer Postdoctoral Fellowship, National Academy of Education (NAEd)/Spencer, $70,000.
(Currently a semifinalist; awaiting final selection)

Co-PI, *Data-Driven Clinical Decision Support to Improve Retention and Recovery in Publicly Funded Substance Use Disorder Care*, National Institutes of Health (NIH)
(with PIs Drs. Saahoon Hong, Hea-Won Kim, and Greg Rhee, and Co-Is Drs. Leslie Hulvershorn, Changgeee Chang, and Betty Walton)

- Completed Projects

6/2024-12/2025 **PI**, *Using Response Process Data to Measure Test-Taking Effort in Students Receiving Extended Time Accommodations*, TC Provost's Faculty Collaboration Funds, $5,000.
(with co-PI Dr. Benjamin Lovett)

6/2022-1/2025 **PI**, *A Within-Group Approach to Random Forests for Evaluating Educational Programs in Multilevel Studies*, American Educational Research Association-National Science Foundation (AERA-NSF), $35,000.
`https://www.aera.net/Newsroom/AERA-Highlights-E-newsletter/AERA-Highlights-February-2022/AERA-Announces-Dissertation-and-Research-Grant-Awardees`

3/2021-6/2022 **PI**, *Regression Discontinuity Design with an Ordinal Discrete Running Variable: Evaluating the Effects of Extended Time Accommodations for English Language Learners*, American Educational Research Association (AERA) Division D, $5,000.

Honors and Awards

2026 **NCME Alicia Cascallar Award (Early-Career Award)**, *National Council on Measurement in Education (NCME)*

2026 **AERA Division D Early-Career Award**, *American Education Research Association (AERA)*

2026 **AERA Outstanding Reviewer**, *American Education Research Association (AERA) and the Journal of Educational and Behavioral Statistics (JEBS)*

2026 **NAEd/Spencer Postdoctoral Fellowship Semifinalist**, *NAEd/Spencer Postdoctoral Fellowship, National Academy of Education (NAEd)/Spencer*
Proposal: Beyond the Final Score: Leveraging Process Data for Time-Varying Separable Effects and Accurate Ability Estimation in Education (noticed on March 6; **awaiting final selection**)

2024 **Tom Ten Have Award (Honorable Mention)**, *The Society for Causal Inference (SCI) in connection with the 2024 American Causal Inference Conference (ACIC)*
Paper: Blessing of Multiple Control Groups in Fuzzy Regression Discontinuity Designs: Evaluating Extended Time Accommodations (awarded on May 16, 2024)

2024 & 2025 **NAEd/Spencer Postdoctoral Fellowship Semifinalist**, *NAEd/Spencer Postdoctoral Fellowship, National Academy of Education (NAEd)/Spencer*
Proposal: Causal Tools for Evaluating Extended Time Accommodations with Educational Assessment and Process Data (noticed on March 12, 2024; March 10, 2025)

Fall 2020 **School of Education Teaching Innovation Grant**, *University of Wisconsin-Madison*
Grant for faculty and instructional staff who need additional time to develop courses to high quality online or hybrid course designs that foster student engagement and student learning, $1,500. (awarded on July 17, 2020)

Spring 2019 **Conference Travel Award**, *University of Wisconsin-Madison*
Award for domestic and international conference travel for the purpose of presenting research, with a scholarship of $1,200.

2018 **2018 IMPS Best Poster Award**, *The Psychometric Society in connection with the 2018 International Meeting of Psychometric Society*
The outstanding poster award for recognizing excellence in research, poster design and presentation, with a monetary prize of $500. (awarded on July 13, 2018)
- *Title*: Measuring the Heterogeneity of Individual-level Treatment Effects with Multilevel Observational Data

2018 & 2019 **The Busk Travel Scholarship**, *University of Wisconsin-Madison*
Travel award to a major national/international conference in support of a sole- or first-author presentation of research, with a scholarship of $1,025 (2018) and $500 (2019).

Selected Conference Presentations

* = Graduate Student Mentored

Li, Y.*, & **Suk, Y.** (2026, June). *Using functional outcomes from response process data for accurate ability estimation.* Paper to be presented at the Modern Modeling Methods (M^3) Conference, New York, NY, U.S.

Pan, C.*, Li, Y.*, & **Suk, Y.** (2026, April). *Enhancing the interpretability of heterogeneous treatment effects using Kolmogorov Arnold Network.* Paper to be presented at the Modern Modeling Methods (M^3) Conference, New York, NY, U.S.

Suk, Y., Pan, C.*, & Yang, K. (2026, April). *Using Generative AI for sequential data generation in Monte Carlo simulation studies.* Paper to be presented at the National Council on Measurement in Education (NCME), Los Angeles, CA, U.S.

Suk, Y., & Lyu, W. (2026, April). *Rethinking item fairness using single world intervention graphs.* Paper to be presented at the National Council on Measurement in Education (NCME), Los Angeles, CA, U.S.

Li, Y.*, & **Suk, Y.** (2026, April). *Using functional outcomes from response process data for accurate ability estimation.* Paper to be presented at the National Council on Measurement in Education (NCME), Los Angeles, CA, U.S.

Li, Y.*, Pan, C.*, & **Suk, Y.** (2026, April). *Designing feasible optimal treatment regimes for personalized education.* Paper to be presented at the American Educational Research Association (AERA), Los Angeles, CA, U.S.

Pan, C.*, Li, Y.*, & **Suk, Y.** (2026, April). *Enhancing the interpretability of heterogeneous treatment effects using Kolmogorov Arnold Network.* Paper to be presented at the American Educational Research Association (AERA), Los Angeles, CA, U.S.

Li, Y.*, Pan, C.*, & **Suk, Y.** (2025, Oct). *Improving the feasibility of optimal treatment regimes for personalized education.* Paper presented at the 3rd Annual Conference of Advanced Quantitative Methods and Analytics for Public Policy Support (AQMAPPS), New York, NY, U.S.

Pan, C.*, Li, Y.*, & **Suk, Y.** (2025, Oct). *Investigating interpretable optimal treatment regimes using Kolmogorov-Arnold Networks.* Paper presented at the 3rd Annual Conference of Advanced Quantitative Methods and Analytics for Public Policy Support (AQMAPPS), New York, NY, U.S.

Pan, C.*, Li, Y.*, & **Suk, Y.** (2025, Oct). *Investigating interpretable optimal treatment regimes using Kolmogorov-Arnold Networks.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Chicago, IL, U.S.

Li, Y.*, Pan, C.*, & **Suk, Y.** (2025, Oct). *Improving the feasibility of optimal treatment regimes for personalized education.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Chicago, IL, U.S.

Suk, Y., Park, C., Pan., C.*, & Kim, K. (2025, Oct). *Fair and robust estimation of heterogeneous treatment effects in multilevel studies.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Chicago, IL, U.S.

Suk, Y., Park, C., Pan., C.*, & Kim, K. (2025, July). *Fair and robust estimation of heterogeneous treatment effects in multilevel studies.* Paper presented at the International Conference on Education Research (ICER), Seoul, South Korea.

Pan, C.*, & **Suk, Y.** (2025, May). *Designing realistic and interpretable optimal treatment regimes for personalized education.* Paper presented at the American Causal Inference Conference (ACIC), Detroit, MI, U.S.

Suk, Y., & Park, C. (2025, May). *Causal mediation and functional outcome analysis with process data.* Paper presented at the American Causal Inference Conference (ACIC), Detroit, MI, U.S.

Pan, C.*, Li, Y.*, & **Suk, Y.** (2025, May). *Learning interpretable optimal treatment regimes using Kolmogorov-Arnold Networks.* Paper presented at the Psychology@TC Student Research Conference, NY, U.S.

Li, Y.*, Pan, C.*, & **Suk, Y.** (2025, May). *Improving the feasibility of optimal treatment regimes for personalized education.* Paper presented at the Psychology@TC Student Research Conference, NY, U.S.

Pan, C.*, Li, Y.*, & **Suk, Y.** (2025, Apr.). *Learning interpretable optimal treatment regimes using Kolmogorov-Arnold Networks.* Paper presented at the Foundations of Data Science Workshop, Columbia University, Data Science Institute, NY, U.S.

Suk, Y., & Park, C. (2025, Apr.). *Causal mediation and functional outcome analysis with process data for program evaluation.* Paper presented at the National Council on Measurement in Education (NCME), Denver, CO, U.S.

Pan, C.*, & **Suk, Y.** (2025, Apr.). *Designing optimal dynamic treatment regimes using TMLE for personalized math course-taking plans.* Paper presented at the American Educational Research Association (AERA), Denver, CO, U.S.

Suk, Y., & Lyu, W. (2025, Apr.). *Rethinking item fairness with counterfactuals and single-world intervention graphs.* Paper presented at the European Causal Inference Meeting (EuroCIM), Ghent, Belgium.

Suk, Y., Pan, C.*, & Li, Y.* (2025, Feb.). *Designing personalized math course-taking plans for high school students using optimal treatment regimes.* The National Center for Education Statistics (NCES) Data Users Conference (DUC) (Virtual; canceled).

Suk, Y., & Pan, C.* (2024, Sep.). *Designing personalized math course-taking plans in high school using optimal treatment regimes.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Baltimore, MD, U.S.

Suk, Y., & Lee, Y. (2024, Sep.). *Evidence factors in fuzzy regression discontinuity designs with multiple control groups for evaluating extended time accommodations.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Baltimore, MD, U.S.

Suk, Y., & Yang, K. (2024, July). *Using Conditional Tabular Generative Adversarial Networks for process data generation in Monte Carlo simulation studies.* Paper presented at the International Meeting of Psychometric Society (IMPS), Prague, Czech Republic.

Suk, Y., & Lee, Y. (2024, May). *Evidence factors in fuzzy regression discontinuity designs with multiple control groups for evaluating testing accommodations.* Paper presented at the plenary session of the American Causal Inference Conference (ACIC), Seattle, WA, U.S.

Suk, Y., & Kim, Y. (2024, May). *Blessing of multiple control groups in fuzzy regression discontinuity designs: Evaluating extended time accommodations.* Paper presented at the American Causal Inference Conference (ACIC), Seattle, WA, U.S. **(2024 ACIC Tom Ten Have Award with Honorable Mention)**

Suk, Y., & Han, K. T. (2024, Apr.). *A framework for evaluating intersectional fairness in algorithmic decision making.* Paper presented at the National Council on Measurement in Education (NCME), Philadelphia, PA, U.S.

Suk, Y., Kim, K., & Park, C. (2024, Apr.). *Towards fair and personalized education policy: Reducing racial and state disparities in advanced math courses.* Paper presented at the American Educational Research Association (AERA), Philadelphia, PA, U.S.

Suk, Y., & Kim, Y. (2023, Sep.). *Fuzzy regression discontinuity designs with multiple control groups for evaluating extended time accommodations.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Arlington, VA, U.S.

Suk, Y., & Han, K. T. (2023, Sep.). *A psychometric framework for evaluating fairness in algorithmic decision making: Differential algorithmic functioning.* Paper presented at the Society for Research on Educational Effectiveness (SREE) for the symposium on *Algorithmic and Testing Fairness: Methods and Application*, Arlington, VA, U.S.

Suk, Y., & Han, K. T. (2023, July). *Differential algorithmic functioning: A framework for evaluating fairness in algorithmic decision making.* Paper presented at the International Meeting of Psychometric Society (IMPS), College Park, MD, U.S.

Suk, Y., & Park, C. (2023, May). *Designing optimal, data-driven educational policies from multisite randomized trials.* Paper presented at the American Causal Inference Conference (ACIC), Austin, TX, U.S.

Suk, Y. (2023, Apr.). *A within-group approach to ensemble machine learning methods for causal inference in multilevel studies.* Poster presented at the American Educational Research Association (AERA), Chicago, IL, U.S. **(Invited talk as a recipient of the AERA-NSF early-career scholar grant)**

Suk, Y., & Han, K. T. (2023, Apr.). *A framework for evaluating fairness in algorithmic decision making: differential algorithmic functioning.* Paper presented at the National Council on Measurement in Education (NCME), Chicago, IL, U.S.

Suk, Y., & Kang, H. (2022, Sep.). *Tuning random forests for causal inference under cluster-level unmeasured confounding.* Paper presented at the Society for Research on Educational Effectiveness (SREE), Arlington, VA, U.S.

Suk, Y., Steiner, P. M., Kim, J.-S., & Kang, H. (2022, Apr.). *Regression discontinuity designs with an ordinal running variable: evaluating the effects of extended time accommodations for English language learners.* Paper presented at the American Educational Research Association (AERA), San Diego, CA, U.S. **(Invited talk as a recipient of the AERA-Division D grant)**

Suk, Y., Steiner, P. M., Kim, J.-S., & Kang, H. (2021, Sep.). *Regression discontinuity designs with an ordinal running variable: evaluating the effects of extended time accommodations for English language learners.* Paper presented at the Society for Research on Educational Effectiveness (SREE; Virtual Conference).

Suk, Y., Steiner, P. M., Kim, J.-S., & Kang, H. (2021, July). *Regression discontinuity designs with an ordinal running variable: evaluating the effects of extended time accommodations for English language learners.* Paper presented at the International Meeting of Psychometric Society (IMPS; Virtual Conference).

Suk, Y., & Kang, H. (2021, Apr.). *Robust estimation of causal effects in multilevel observational studies under arbitrary cluster-level unmeasured confounding.* Paper presented at the American Educational Research Association (AERA; Virtual Conference).

Suk, Y., Steiner, P. M., & Kim, J.-S. (2020, Sep.). *Evaluating effects of extended time accommodations for NAEP: multiple control groups.* Paper presented at the National Council on Measurement in Education (NCME; Virtual Conference, Limited).

Suk, Y., Steiner, P. M., & Kim, J.-S. (2020, July). *Evaluating the effects of extended time accommodations in observational studies.* Paper presented at the International Meeting of Psychometric Society (IMPS; Virtual Conference).

Suk, Y., Kim, J.-S., & Kang, H. (2020, Apr.). *Remedying selection bias and omitted variable bias with multilevel observational data.* Paper presented at the American Educational Research Association (AERA; Conference Canceled).

Suk, Y., Kim, J.-S., & Kang, H. (2019, July). *Machine learning algorithms for causal inference with cluster-structured observational data.* Paper presented to the International Meeting of Psychometric Society (IMPS), Santiago, Chile.

Kim, J.-S., & **Suk, Y.** (2019, July). *Random forests versus matching methods for estimating heterogeneous treatment effects.* Paper presented at the International Meeting of Psychometric Society (IMPS), Santiago, Chile.

Suk, Y., & Kim, J.-S. (2019, Apr.). *Measuring treatment effects using random forests with multilevel observational data.* Paper presented at the American Educational Research Association (AERA), Toronto, Canada.

Suk, Y., Kim, Y. Y., & Zheng, X. (2019, Apr.). *Evaluating the effects of extended time accommodation on writing performance in NAEP.* Paper presented at the National Council on Measurement in Education (NCME), Toronto, Canada.

Kim, Y. Y., Zheng, X., & **Suk, Y.** (2019, Apr.). *Digital familiarity and warm-up effects in NAEP 2017 Mathematics.* Paper presented at the National Council on Measurement in Education (NCME), Toronto, Canada.

Suk, Y., & Kim, J.-S. (2018, July). *Measuring the heterogeneity of individual-level treatment effects with multilevel observational data*. Poster presented at the International Meeting of Psychometric Society (IMPS), New York City, NY, U.S. **(2018 IMPS Best Poster Award)**

Kim, J.-S., & **Suk, Y.** (2018, July). *Fixed versus random effects models for multilevel propensity score analysis.* Paper presented at the International Meeting of Psychometric Society (IMPS), New York City, NY, U.S.

Suk, Y., & Kim, J.-S. (2018, Apr.). *Linear probability models as alternatives to logistic regression models for multilevel propensity score analysis.* Paper presented at the American Educational Research Association (AERA), New York City, NY, U.S.

Invited Seminars/Talks

4/2026 Quant Psych Brownbag, University of California, Los Angeles
- *Title: AI-based simulation studies*

12/2025 Computational Social Science Working Group, Data Science Institute, Columbia University
- *Title: Multilevel fairness in policy learning: Estimating heterogeneous treatment effects under structural constraints*

11/2025 Joint Seminar of the Korea Institute for Curriculum and Evaluation
- *Title: AI-based simulation studies*

7/2025 The Summer Methodology Workshop, Chungnam National University
- *Title: Machine learning methods for causal inference*

11/2024 American Educational Research Association-National Science Foundation (AERA-NSF) Research Conference. `https://bit.ly/4g1xDwi`
- *Research talk:* Fair and robust estimation of heterogeneous treatment effects for optimal policies in multilevel studies
- *Panel discussion:* Pathways and experiences that inform your research agenda in early career (with other panelists, Xavier J. Monroe and Walker Swain)

10/2024 The Monday Symposium in Measurement and Statistics (MSMS), University of Maryland-College Park. - *Title: Evidence factors in fuzzy regression discontinuity designs with sequential treatment assignments.*

10/2024 The Psychometrics and Quantitative Psychology (PQP) Seminar, Fordham University.
- *Title: Evidence factors in fuzzy regression discontinuity designs with sequential treatment assignments.*

8/2024 The Educational Measurement and Evaluation Program Seminar, Seoul National University.
- *Title: Evidence factors in fuzzy regression discontinuity designs with multiple control groups.*

6/2024 Internship Collective. - *Title: New Researchers in Academia Panel Discussion* (Virtual; with other panelists, Man, K., Guzman-Alvarez, A., Edwards, K. & Runyon, C.).

5/2024 The Measurement and Statistics Program Seminar, University of Washington. - *Title: Causal devices for evaluating the effects of testing accommodations.*

3/2024 The Colloquium, Department of Educational Psychology, University of Wisconsin-Madison.
-*Title: Causal devices for evaluating the effects of testing accommodations*

11/2023 The Proseminar, Department of Human Development, Teachers College Columbia University.
-*Title: Advancing regression discontinuity designs for evaluating extended time accommodations*

9/2023 The Psychometrics Workshop at Columbia University. - *Title: A psychometric framework for evaluating fairness in algorithmic decision making: Differential algorithmic functioning*

10/2022 The quantitative lunch colloquium (Design and Data Analysis, or DADA), Department of Psychology, University of Virginia (Virtual). - *Title: Robust machine learning for treatment effects in multilevel observational studies under cluster-level unmeasured confounding*

3/2022 The 2022 Women in Data Science Charlottesville (Virtual; Organizer, Moderator, Speaker; with Eckerly, C., & Yuan, K.). - *Title: Applications of data science in education.*

11/2021 The Research Methods and Data Science (RMDS), School of Education and Human Development and School of Data Science, University of Virginia (Virtual). - *Title: Robust machine learning for treatment effects in educational data*

9/2021 The Proseminar, School of Data Science, University of Virginia. - *Title: Robust machine learning for treatment effects in complex educational assessment data*

Professional Memberships

Reviewer Psychometrika
Psychological Methods
Journal of Educational and Behavioral Statistics
Journal of the Royal Statistical Society Series A
Journal of the Royal Statistical Society Series C
Asia Pacific Education Review
Large-scale Assessments in Education
Educational and Psychological Measurement
Educational Psychology
Evaluation Review
Epidemiology
AERA Open
Journal of Counseling Psychology
Conferences e.g., The American Educational Research Association (AERA), the Society for Research on Educational Effectiveness (SREE), the International Meeting of Psychometric Society (IMPS), the National Council on Measurement in Education (NCME)

Panelist NSF Grant (2024)

Editorial Journal of Educational and Behavioral Statistics (JEBS; Editorial Board; 2024-Present)
Journal of Research on Educational Effectiveness (JREE; Editorial Board; 2025-Present)
Zeitschrift für Psychologie (Editorial Board and Special Issue Editor; 2025-Present)
- Issue Title: Machine Learning and Artificial Intelligence for Causal Inference in the Behavioral and Social Sciences: Methodological Advances and Applications

Member The American Educational Research Association (AERA)
The National Council on Measurement in Education (NCME)
The Psychometric Society
The Society for Research on Educational Effectiveness (SREE)
The Society for Causal Inference (SCI)

External Committee — 2026 AERA Division D Dissertation Award Committee

Teaching Experiences

Spring 2026 — **Instructor**, *HUDM 5133 Causal Inference for Program Evaluation (co-teaching)*

Instructor, *HUDM 5122 Applied Regression Analysis*

Fall 2025 — **Instructor**, *HUDM 5001 Programming for Data Science*

Instructor, *HUDM 5122 Applied Regression Analysis*

Spring 2025 — **Instructor**, *HUDM 5133 Causal Inference for Program Evaluation (co-teaching)*

Fall 2024 — **Instructor**, *HUDM 5001 Programming for Data Science (a permanent course)*

Instructor, *HUDM 5122 Applied Regression Analysis*

Spring 2024 — **Instructor**, *HUDM 5122 Applied Regression Analysis*

Fall 2023 — **Instructor**, *HUDM 5199 Programming for Data Science*

Instructor, *HUDM 5122 Applied Regression Analysis*

Spring 2023 — **Instructor**, *HUDM 5199 Programming for Data Science*, Department of Human Development, Teachers College, Columbia University (new course development)

Fall 2022 — **Instructor**, *HUDM 5122 Applied Regression Analysis*, Department of Human Development, Teachers College, Columbia University

Spring 2022 — **Instructor**, *DS 6999 Independent Study*, School of Data Science, University of Virginia

Instructor, *DS 3003 Communicating with Data*, School of Data Science, University of Virginia

Instructor, *DS 2001 Programming for Data Science*, School of Data Science, University of Virginia

Fall 2021 — **Instructor**, *DS 3003 Communicating with Data*, School of Data Science, University of Virginia

Fall 2020 — **Instructor**, *ED PSYCH 763 Regression Models in Education*

Spring 2020 — **Instructor**, *ED PSYCH 763 Regression Models in Education*

Fall 2019 — **Instructor**, *ED PSYCH 763 Regression Models in Education*, Department of Educational Psychology, University of Wisconsin-Madison

9/2017–5/2018 — **Statistical Consultant**, *Laboratory for Experimental Design (LED)*, Department of Educational Psychology, University of Wisconsin-Madison

Advising

○ Advisor for Ph.D

Yuxuan Li (PhD; 2024–Present)

Chenguang Pan (PhD; 2022–Present)

○ Committee Member at Columbia University

Josh Coleman (PhD in Cognitive Science in Education, Present)

Sharon Kim (PhD in School Psychology, Present)

Nicholas M. Rosemarino (PhD in Organizational Psychology, 2026)

Terry Zhang (PhD in Measurement and Evaluation, 2025)

Aisha Chahal (EdD in Nursing Education, 2025)

Sizheng Zhu (EdD in Measurement and Evaluation, 2025)

Sangbaek Park (PhD in Measurement and Evaluation, 2024)

Jitong Qi (PhD in Statistics, 2023)

Marilyn Campbell (EdD in Nursing Education, 2023)

- Research Supervisor

Airui Meng (MS in Applied Statistics; 2025–Present) – Regression discontinuity designs

Weixuan Xiao (PhD in Measurement and Evaluation; 2025–Present) – AI-based simulation

Thomas Harris (EdD in Math Education; 2025–Present) – personalized math curriculum

Hyunjee Oh (PhD in Measurement and Evaluation; Spring 2025) – process data

Yuxin Cai (MS in Applied Statistics; 2024–2025) – process data

Guoliang Xu (PhD in Measurement and Evaluation; 2023-2024) – personalized math curriculum

Ruixuan Li (MS in Applied Statistics; 2023) – process data

- Advisor for MS in Applied Statistics

Jinwan Huang; Hansheng Kang; Longzhen Zhou; Zhe Jiang; Bonian Jin, Jiani Liu (2025–Present)

Hongran Fang; Lee Li; Zhanghao Xi; Jiasheng Xu (2024–Present)

Weiliang Hu (2024–2025)

Computer Skills

R, Python, Mplus, SPSS, Stata, AMOS, HLM, MATLAB, HTCondor, GitHub, and LaTeX

Languange

English (fluent) and Korean (native)