

# SHENGHAI DAI

Department of Kinesiology and Educational Psychology  
Washington State University (WSU)  
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## EDUCATION

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<b>Ph.D.</b> Qualitative and Quantitative Research Methodology, Indiana University Bloomington <i>Focus:</i> Psychometrics & Quantitative Methodology <i>Chair:</i> Dr. Dubravka Svetina Valdivia	July 2017
<b>M.S.</b> Applied Statistics, Indiana University Bloomington	Dec. 2016
<b>M.A.</b> Language Testing, Beijing Language and Culture University	June 2011
<b>B.A.</b> Teaching Chinese as a Second Language, Beijing Language and Culture University	June 2005

## PROFESSIONAL POSITIONS

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<b>Associate Professor of Educational Psychology &amp; Methodology</b> WSU Department of Kinesiology and Educational Psychology	2023-present
<b>Director, <a href="#">Large-Scale Data Laboratory</a>,</b> WSU <a href="#">Learning and Performance Research Center</a>	2019-present
<b>Assistant Professor of Educational Psychology &amp; Methodology</b> WSU Department of Kinesiology and Educational Psychology	2017-23
<b>Research Assistant/Associate</b> Center for Collaborative Systems Change, Indiana Institute on Disability and Community, Bloomington, IN	2016-17
<b>Instructor of Statistics Labs (EDUC-Y500)</b> IUB Department of Counseling and Educational Psychology	2014-16
<b>Research Associate</b> Lilly Family School of Philanthropy, Indiana University–Purdue University Indianapolis, IN	Summer 2015
<b>Research Assistant</b> IUB AM-I-STEM Project (with Dr. Adam Maltese)	Summer 2014
<b>Psychometrician</b> Human Anatomy and Physiology Society (HAPS)	2013-14
<b>Research Assistant</b> NSF Project “ <i>What Mathematics Do Students Know? Implications from NAEP for Curriculum and Policy ?</i> ”, IUB Center for Evaluation and Education Policy	2011-14
<b>Test Item Writer &amp; Rater</b> Chinese Proficiency Test (HSK) Center, BLCU, Beijing, China	2008-11

<b>Exam/Test Assistant</b>	2006-08
Chinese Proficiency Test (HSK) Center, BLCU, Beijing, China	
<b>Teaching Assistant</b>	2005-06
IIEPM Training Center, Tsinghua University, Beijing, China	

## TEACHING EXPERIENCE

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**WSU College of Education, Sport, & Human Sciences** 2017-present

### Courses

ED RES 565 Quantitative Research  
 ED PSYCH 508 Educational Statistics  
 ED PSYCH 511 Classical and Modern Test Theory  
 ED PSYCH 512 Data Management & Visualization  
 ED PSYCH 569 Multivariate Data Analysis  
 ED PSYCH 574 Seminar in Educational Psychology  
 ED PSYCH 576 Factor Analytics Procedures  
 ED PSYCH 577 Item Response Theory  
 ED PSYCH 578 Advanced Item Response Theory  
 ED PSYCH 579 Large-Scale Surveys in Education  
 ED PSYCH 580 Missing Data Analysis  
 ED PSYCH 581 Machine Learning Applications in Education  
 ED PSYCH 582 Latent Variable Models and Structural Equations

### Workshop

Introduction to R Programming, LPRC Methods Workshop pre-session, May 2022

### Undergraduate research mentoring

Gerontechnology-Focused Student Undergraduate Research Experience (GSUR), NIH Training in Gerontechnology, 2024-2026

**IUB School of Education** 2014-16

Statistics Labs (EDUC-Y500) associated with Intermediate Statistics (Y502), Psychometric Theory (Y617), Experimental Design in Education Research (Y603), and Multivariate Data Analysis (Y604)

## PUBLICATIONS

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(\* = Work with Students)

### **Peer-Reviewed Journal Articles**

- Dai, S.**, French, B.F., & Finch, W.H. (in press). DIFplus: An R package for multilevel differential item functioning detection. *Applied Psychological Measurement*.
- \*Farias, S.T., Gavett, B., Luna, C., Harvey, D.J., Weakley, A.M., Fox, J.M., Schmitter-Edgecombe, M., Cook, D., & **Dai, S.** (accepted). The association between daily, real-time assessment of subjective cognitive function and objective cognition using ecological momentary assessment. *Neuropsychology*.
- \*Luna, K., Chilton, R., Rahman, S., Beech, B., Li, J., **Dai, S.**, Cook, D., & Schmitter-

- Edgecombe, M. (accepted). Promoting digital memory aid use in older adults with cognitive concerns: A pilot randomized controlled trial of adaptive web-based training. *Neuropsychology*.
- \*Zheng, X., **Dai, S.**, Kirakosian, A.T. (2026). When the sandwich makes you hesitate, replicate: On sampling variance estimation of multilevel models under complex sample design. *Large-scale Assessment in Education*, 14 (14).  
<https://doi.org/10.1186/s40536-026-00285-y>.
- \*Luna, K., **Dai, S.**, Pagan, C., Liu, C., & Schmitter-Edgecombe, M. (2025). Examining intra-individual variability of ecological momentary assessment with multilevel modeling: A systematic review and recommendations for research and practice. *The Clinical Neuropsychologist*. Advance online publication.  
<https://doi.org/10.1080/13854046.2025.2592660>.
- \*Taylor, J.P., Ramazan, O., Whittenburg, H.N., Sheftel, A., & **Dai, S.** (2025). Career and technical educational experiences and career trajectories of youth with disabilities: An examination of High School Longitudinal Study data. *Career and Technical Education Research*.
- Sunday, O.J., Adesope, O.O., **Dai, S.**, & Carbonneau, K. (2025). The effects of concept mapping experience, feedback timing, and motivation on students' learning outcomes. *Learning and Motivation*, 92, 102201.  
<https://doi.org/10.1016/j.lmot.2025.102201>.
- \*Kirakosian, A. T., **Dai, S.**, & Plunkett, S. W. (2025). The psychometric properties of the GAD-7 to assess generalized anxiety in Black American university students. *Journal of Psychoeducational Assessment*. Advance online publication. <https://doi.org/10.1177/07342829251388599>.
- Catena, R.D., **Dai, S.**, Allaire, B.T., Occhino, A., Banks, J.J., & Anderson, D.E. (2025). Obesity as a moderator of lumbar spine posture change during pregnancy. *Gait & Posture*. Advanced online publication. <https://doi.org/10.1016/j.gaitpost.2025.08.063>.
- Ardasheva, Y., **Dai, S.**, & Kangas, S. (2025). Opportunity gap at the intersection of language, disability, and science. *Science Education*, 110(2), 400-417.  
<https://doi.org/10.1002/sce.70011>.
- Qian, M., Wang, X., & **Dai, S.** (2025). Psychometric network analysis and dimensionality assessment: A software review. *Education Sciences*, 15(5), 555.  
<https://doi.org/10.3390/educsci15050555>.
- \*Ramazan, O., **Dai, S.**, & Danielson, R. (2025). Exploring validity evidence for mathematics self-concept of adolescents: Key findings from PISA 2022. *Journal of Psychoeducational Assessment*, Advanced online publication.  
<https://doi.org/10.1177/07342829251333844>.
- \*Rahman, S., **Dai, S.**, Libon, D.J., Woo, E., & D. Schmitter-Edgecombe, M. (2025). Cutoffs of the instrumental activities of daily living - compensation (IADL-C) scale for identification of functional limitations consistent with mild cognitive impairment and dementia. *Archives of Clinical Neuropsychology*, 40 (6), 1101-1111.

- <https://doi.org/10.1093/arclin/acaf028>.
- \*Schmitter-Edgecombe, M., Luna, C., Beech, B., **Dai, S.**, & Cook, D. (2025). Capturing cognitive capacity in the everyday environment across a continuum of cognitive decline using a smartwatch *n*-back task and ecological momentary assessment. *Neuropsychology*, 39(1), 28–43. <https://doi.org/10.1037/neu0000984>. [APA Editor's Choice selection].
- Gao, Q., Qian, M., Wang, A. X., & **Dai, S.** (2024). Examining the dimensionality of the self-perceptions of creativity scale using psychometric network analysis: A tutorial. *Creativity Research Journal*, 1-14. <https://doi.org/10.1080/10400419.2024.2433359>.
- \*Vo, T., **Dai, S.**, & French, B.F. (2024). Black girls' mathematics and science identities using large-scale assessment and survey data: A QuantCrit framework. *Methods in Psychology*, 11, 100158. <https://doi.org/10.1016/j.metip.2024.100158>.
- \*Schmitter-Edgecombe, M., Luna, C., **Dai, S.**, & Cook, D. (2024). Predicting daily cognition and lifestyle behaviors for older adults using smart home data and ecological momentary assessment. *The Clinical Neuropsychologist*, 1-25. <https://doi.org/10.1080/13854046.2024.2330143>.
- Kangas, S., **Dai, S.**, & Ardasheva, Y. (2024). The Intersection of language and disability: Progress of English learners with disabilities on NAEP reading. *The Journal of Special Education*, 58(2), 88-99. <https://doi.org/10.1177/00224669231213054>.
- \*Zhang, X., **Dai, S.**, Ardasheva, Y., & Hong, Y. (2023). Relationships among English language proficiency, self-efficacy, motivation, motivational intensity, and achievement in an ESP/EAP Context. *Journal of Psycholinguist Research*, 52, 3019-3038. <https://doi.org/10.1007/s10936-023-10034-9>.
- Stewart, B.C., **Dai, S.**, Havens, K., Eggleston, J.D., Bagwell, J., Deering, R.E., Little, E.E., & Catena, R. (2023). Determining fall risk change throughout pregnancy: The accuracy of postpartum survey and relationship to fall efficacy. *Ergonomics*, 68(1), 85–94. <https://doi.org/10.1080/00140139.2023.2296827>.
- Danielson, R.W., Gale, M.S., **Dai, S.**, Seyranian, V., Heddy, B., Marsh, J., & Polikoff, M.S. (2023). The development and validation of the elementary activity interest measure. *Journal of Experimental Education*, 93(2), 396–418. <https://doi.org/10.1080/00220973.2023.2276933>.
- \*Ramazan, O., **Dai, S.**, Danielson, R., Ardasheva, Y., Hao, T., & Austin, B. (2023). Students' 2018 PISA reading self-concept: Identifying predictors and examining model generalizability for emergent bilinguals. *Journal of School Psychology*. 101, 101254. <https://doi.org/10.1016/j.jsp.2023.101254>.
- \***Dai, S.**, Hao, T., Ardasheva, Y., Ramazan, O., Danielson, R., & Austin, B. (2023). PISA reading achievement: Identifying predictors and examining model generalizability for multilingual students. *Reading and Writing*. 36, 2763–2795. <https://doi.org/10.1007/s11145-022-10357-4>.
- Svetina Valdivia, D. & **Dai, S.** (2023). Number of response categories and sample size requirements in polytomous IRT models. *Journal of Experimental Education*. 92 (1),

- 154-185. <https://doi.org/10.1080/00220973.2022.2153783>.
- \* **Dai, S.**, Kehinde, O.J., Schmitter-Edgecombe, M., & French, B. (2023). Modeling daily fluctuations in everyday cognition and health behaviors at general and person-specific levels: A GIMME analysis. *Behaviormetrika*. 50, 563-583. <https://doi.org/10.1007/s41237-022-00191-x>.
- \*Kehinde, O.J., **Dai, S.**, French, B. (2022). Item parameter estimation for multidimensional graded response model under complex structure. *Frontiers in Education - Assessment, Testing and Applied Measurement*. 7, 947581. <https://www.frontiersin.org/articles/10.3389/feduc.2022.947581>.
- Dai, S.** & Svetina Valdivia, D. (2022). Dealing with missing responses in cognitive diagnostic modeling. *Psych*. 4(2), 318-341. <https://doi.org/10.3390/psych4020028>.
- \***Dai, S.**, Vo, T., Kehinde, O.J., He, H., Xue, Y., Demir, C., & Wang, X. (2021). Performance of polytomous IRT models with rating scale data: An investigation over sample size, instrument length, and missing data. *Frontiers in Education - Assessment, Testing and Applied Measurement*. 6, 721963. <https://www.frontiersin.org/articles/10.3389/feduc.2021.721963>.
- Dai, S.** (2021). Handling missing responses in psychometrics: Methods and software. *Psych*. 3(4), 673-693. <https://doi.org/10.3390/psych3040043>.
- \*Zhang, X., **Dai, S.**, & Ardasheva, Y. (2020). Contributions of (de)motivation, engagement, anxiety in English listening and speaking. *Learning and Individual Differences*, 79, 101856. <https://doi.org/10.1016/j.lindif.2020.101856>.
- Dai, S.**, Wang, X., & Svetina, D. (2019). The application of minimum discrepancy estimation in the implementation of diagnostic classification models. *Behaviormetrika*, 46, 453-481. <https://doi.org/10.1007/s41237-019-00094-4>.
- \*Strong, Z., McMain, E.M., Frey, K.S., Wong, R.M., **Dai, S.**, & Jin, G., (2019). Ethnically diverse adolescents recount third-party actions that amplify their anger and calm their emotions after perceived victimization. *Journal of Adolescent Research*, 35(4), 461-488. <https://doi.org/10.1177/0743558419864021>.
- Liu, Z., Roggio, R., Day, D., Zheng, C., **Dai, S.**, & Bian, Y. (2019). Leader development begins at home: Overparenting harms adolescent leader emergence. *Journal of Applied Psychology*, 104(10), 1226–1242. <https://doi.org/10.1037/apl0000402>.
- Wang, X., Svetina, D., & **Dai, S.** (2019). Exploration of factors affecting the added value of test subscores. *Journal of Experimental Education*. 87(2), 179-192. <https://doi.org/10.1080/00220973.2017.1409182>.
- Dai, S.**, Svetina, D., & Chen, C. (2018). Investigation of missing responses in Q-matrix validation. *Applied Psychological Measurement*. 42(8), 660–676. <https://doi.org/10.1177/0146621618762742>.
- Svetina, D., Feng, Y., Paulsen, J., Valdivia, M., Valdivia, A., & **Dai, S.** (2018). Examining DIF in the context of CDMs when the Q-matrix is misspecified. *Frontiers in psychology*, 9:696, 1-15. <https://doi.org/10.3389/fpsyg.2018.00696>.
- Dai, S.**, Svetina, D., & Wang, X. (2017). Reporting subscores using R: A software review.

*Journal of Educational and Behavioral Statistics*. 42(5), 617-638.

<https://doi.org/10.3102/1076998617716462>.

Svetina, D., **Dai, S.**, & Wang, X. (2017). Use of cognitive diagnostic model to study differential item functioning in accommodations. *Behaviormetrika*, 44(2), 313-349.

<https://doi.org/10.1007/s41237-017-0021-0>.

Svetina, D., Valdivia, A., Underhill, S., **Dai, S.**, & Wang, X. (2017). Recovery of parameters in multidimensional item response theory models under complexity and nonnormality. *Applied Psychological Measurement*. 41(7), 530-544.

<https://doi.org/10.1177/0146621617707507>.

### **Books**

Finch, W. H., French, B. F., Immekus, J., & **Dai, S.** (2025). *Educational and psychological measurement* (2<sup>nd</sup> ed.). Routledge. [www.routledge.com/9781032575230](http://www.routledge.com/9781032575230).

### **Book Chapters**

\*Ardasheva, Y., Lightner, L. K., **Dai, S.**, Ramazan, O., Guerrettaz, A. M., Karaer, G., Garcia, D., Suarez, G. C., Hsiao, Y-J., with Ramirez N. G., and Carrillo T. V. (2026). Exploring the psychology of language materials development in dual language science classrooms. In A. Sarkeshikian (Ed.), *Exploring the psychology of language materials development*. IGI Global. <https://doi.org/10.4018/979-8-3373-2995-6.ch007>

\*Van Orman, D. S. J., Ardasheva, Y., Maleki, G., Calderone, S., Hsiao, Y-J., & **Dai, S.** (2025). Building culturally sustaining orientations to teaching and assessment. In L. DeMartino & L. Fetman (Eds.), *Moving from trendy growth to asset-based mindsets in schools* (Vol. 2 *Demystifying social justice education: Moving from trendy to transformative equity and justice practices in schools*, pp.33-56). Myers Education Press.

**Dai, S.**, & Strong, Z. (2021). Educational applications using large-scale assessment and survey data: Opportunities and challenges. In U. Luhanga & G. Allen (Ed.), *Basic elements of survey research in education: Addressing the problems your advisor never told you about* (pp. 747-776). North Carolina. Information Age Publishing.

Wang, X. & **Dai, S.** (2021). Extreme response style in survey research. In U. Luhanga & G. Allen (Ed.), *Basic elements of survey research in education: Addressing the problems your advisor never told you about* (pp. 607-623). North Carolina. Information Age Publishing.

Brown, N., **Dai, S.**, & Svetina, D. (2016). Analyzing NAEP data at the item level. In P. Kloosterman, D. Mohr, & C. Walcott (Ed.), *What mathematics do students know and how is that knowledge changing? evidence from the National Assessment of Educational Progress* (pp. 33-44). North Carolina. Information Age Publishing.

Brown, N., Svetina, D., & **Dai, S.** (2016). Analyzing NAEP data at the construct level. In P. Kloosterman, D. Mohr, & C. Walcott (Ed.), *What mathematics do students know and how is that knowledge changing? Evidence from the National Assessment of*

*Educational Progress* (pp. 315-334). North Carolina. Information Age Publishing.

Kloosterman, P., Walcott, C., Brown, N. J. S., Mohr, D., Perez, A., **Dai, S.**, Roach, M., Wilson, L. D., & Huang, H. (2015). Using NAEP to analyze 8th-grade students' ability to reason algebraically. In Middleton, J. A., Cai, J., Hwang, S., (Eds.), *Large-scale studies in mathematics education* (pp. 179-208). New York. Springer.

### **Software Packages**

**Dai, S.**, Wang, X., & Svetina, D. (2022). subscore: Subscore computing functions in classical test theory. (R package version 3.3) [Computer software]. <http://CRAN.R-project.org/package=subscore>.

**Dai, S.**, Wang, X., & Svetina, D. (2021). TestDataImputation: Missing item responses imputation for test and assessment data. (R package version 2.3) [Computer software]. <http://CRAN.R-project.org/package=TestDataImputation>.

\***Dai, S.**, Kehinde, O.J., French, B.F., & Schmitter-Edgecombe, M. (2025). ROCpsych: Compute and compare diagnostic test statistics across groups. (R package version 1.4) [Computer software]. <https://CRAN.R-project.org/package=ROCpsych>.

**Dai, S.**, French, B.F., Finch, W. H. (2020). DIFplus: Multilevel Mantel-Haenszel statistics for differential item functioning detection. (R package version 1.1) [Computer software]. <https://cran.r-project.org/package=DIFplus>.

### **Abstracts**

\*Luna, C., **Dai, S.**, Farias, S., Cook, D., & Schmitter-Edgecombe, M. (2023). 80 Ecological momentary assessment of the fluctuations in cognitive performance and contextual states of community-dwelling older adults. *Journal of the International Neuropsychological Society*, 29(S1), 483-484.  
<https://doi.org/10.1017/S1355617723006288>.

## **PRESENTATIONS**

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(\* = Work with Students)

### **Conference Presentations (Refereed)**

Cavagnetto, A. & Dai, S. (2026, April). *The relationship between argumentation and debate opportunities and PISA performance*. 2026 National Association for Research in Science Teaching and Learning (NARST) Annual International Conference, Seattle, WA.

\*Karaer, G., **Dai, S.**, Ardasheva, Y., Guerrettaz, A.M, Hsiao, Y-J., Lightner, L.K., Garcia, D., & Coldiron, A.U. (2026, April). *Validity Evidence for Qualitative Data Analysis in Educational Research: Human vs. Machine Coding*. 2026 Annual Meeting of the National Council on Measurement in Education, Los Angeles, CA.

\*Ardasheva, Y., **Dai, S.**, Coldiron, A.U., Salsbury, T.L., Garcia, D., Hsiao, Y-J., Ramazan, O., Karaer, G., Lightner, L.K., Guerrettaz, A.M, & Vega, G. (2026, April). *Preparedness, knowledge, self-efficacy, and practices of teacher candidates of multilingual students:*

- Multi-campus-system comparisons*. 2026 Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*Ramazan, O., Ardasheva, Y., Lightner, L.K., **Dai, S.**, Guerrettaz, A.M, Karaer, G., Garcia, D., Suarez, G., & Hsiao, Y-J. (2026, April). *Developing dual-language materials for science classrooms: Psychology-informed approaches*. Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*Karaer, G., Guerrettaz, A.M, Vega, G., Hsiao, Y-J., Ardasheva, Y., **Dai, S.**, Garcia, D., Lightner, L.K., Ramazan, O., & Coldiron, A.U. (2026, April). *Case study of dual language teacher certification: New evidence-based solutions to the national teacher shortage*. Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*John, U., Ardasheva, Y., & **Dai, S.** (2026, April). Preservice teachers' problem identification and solution strategies in culturally responsive sustaining contexts. Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*He, P., Xue, Shin, N., **Dai, S.**, & Krajcik, J. (2026, April). *Leveraging learning progressions to support teacher adaptation and student 3d learning: A two-year case study*. Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*Buchner, P., Carbonneau, K.J., Gotch, C.M., **Dai, S.**, Ardasheva, Y., & Newcomer, S.N. (2026, April). *Investigating the effect of case and contextual features on preservice teachers' case-scenario response quality*. Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*Ramazan, O., Danielson, R.W., **Dai, S.**, & Gotch, C.M. (2026, April). *Psychometrics oversights: a systematic literature review of reliability, validation and fairness in reading self-concept measurements*. Annual Meeting of the American Educational Research Association, Los Angeles, CA.
- \*French, E., Luna, C., **Dai, S.**, Cook, D., Minor, B., & Schmitter-Edgecombe, M. (2026, March). *Mental alertness and heart rate via smartwatch predict everyday cognition: Multilevel and person-specific analyses*. International Society for Gerontechnology 15<sup>th</sup> World Conference, Vancouver, BC, Canada.
- \*Fabiyyi, D.G., **Dai, S.**, & Adesope, O.O. (2025, August). *The role of self-efficacy and perceptions in developing computer and information literacy (CIL)* [Poster presentation]. Annual convention of the American Psychological Association, Denver, CO.
- \*Jiang, K., **Dai, S.**, & Gotch, C. M. (2025, August). *Examining teacher occupational stress within a health impairments process: A path analysis* [Poster presentation]. Annual convention of the American Psychological Association, Denver, CO.
- \*Rednoske, V., **Dai, S.**, & Prashad, S. (2025, June 3-5). *Physical activity mediates age-related impairment in motor-adaptation in adults ages 50-65 years*. North American Society for the Psychology of Sport and Physical Activity Annual Conference. South Lake Tahoe, CA, United States.
- \*Feroy, B., Whiteley, N., Schmitter-Edgecombe, & **Dai, S.** (2025, February 12-15).

- Examining differential item functioning in older adults self-reported concerns about applied cognitive abilities* (Poster presentation). International Neuropsychological Society Annual Meeting, New Orleans, LO, United States.
- \*Lee, J., **Dai, S.**, Schmitter-Edgecombe, & Cook, D. (2025, February 12-15). *Examining consistency and accuracy of machine learning methods for predicting cognition using n-back measures* (Poster presentation). International Neuropsychological Society Annual Meeting, New Orleans, LO, United States.
- Zheng, X. & **Dai, S.** (2025, April 23-26). *On sampling variance estimation of multilevel models under complex sample design*. [Paper session]. National Council on Measurement in Education Annual Meeting, Denver, CO, United States.
- \*Kehinde, O., **Dai, S.**, & French, B. (2025, April 23-26). *The impact of Q-matrix on item parameter and attribute profile estimations in transitional diagnostic classification models*. [Poster session]. National Council on Measurement in Education Annual Meeting, Denver, CO, United States.
- \*Ramazan, O., Danielson, R. W., & **Dai, S.** (2025, April 23-26). *Exploring the validity of mathematics self-concept: Key findings from PISA 2022*. [Poster session]. National Council on Measurement in Education Annual Meeting, Denver, CO, United States.
- \*Calderone, S., Ardasheva, Y., Van Orman, D., Maleki, G., **Dai, S.**, Newcomer, S., Hsiao, Y-J., & Oloniyo, O. (2025, April 23-27). *Case-based instruction in teacher education: The learning impact of situating the reader and stating student learning objectives*. [Roundtable session]. American Educational Research Association Annual Meeting, Denver, CO, United States.
- Carbonneau, K., McMain, E., Ardasheva, Y., Van Orman, D., Gotch, C., **Dai, S.**, & Newcomer, S. (2025, April 23-27). *Case-based instruction in teacher education: The learning impact of situating the reader and stating student learning objectives*. [Paper session]. American Educational Research Association Annual Meeting, Denver, CO, United States.
- Vaughn, M., **Dai, S.**, Kennedy, E., & Shiel, G. (2025, April 23-27). *Exploring variables and reading achievement in Ireland: Insights from PIRLS 2021*. [Paper session]. American Educational Research Association Annual Meeting, Denver, CO, United States.
- \*Botter, P., Svetina Valdivia, D., & Dai, S. (2024, July). *Are CFA fit index cutoffs appropriate for IRT models?* Poster to be presented at the International Meeting of the Psychometric Society, Prague, Czech Republic.
- \*Botter, P., Svetina Valdivia, D., **Dai, S.** (2024, August). *Evaluating CFA and IRT Models for Categorical Data: A Critical Look at Global-Fit Indices Cutoffs*. Poster to be presented at the Annual Meeting of the American Psychological Association, Seattle, WA, United States.
- \*Kirakosian A.T., Jernigan, M., Cavagnetto, A.R., **Dai, S.**, & French, B.F. (2024, August). *Exploring the relationship between student universal traits and science performance on PISA 2015*. Annual Conference of American Psychological Association, Seattle, WA, United States.

- \*Kirakosian A.T., Jernigan, M., **Dai, S.**, Carbonneau, K., Onur, R., & Danielson, R.W. (2024, August). *Attitudes towards and achievement in mathematics: Model generalizability across demographics*. Annual Conference of American Psychological Association, Seattle, WA, United States.
- \*Ramazan, O., & **Dai, S.** (2024, August). *Comparing regularized machine learning methods in predicting reading self-concept of multilinguals*. Annual Conference of American Psychological Association, Seattle, WA, United States.
- \*Ramazan, O., Danielson, R. W., **Dai, S.**, & Gotch, C. (2024, April 11-14). *Examining test anxiety of the U.S. adolescents in the context of large-scale assessment*. [Poster session]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- \*Oluniyo, O. A., Gilmore, A. A., Ardasheva, Y., Newcomer, S., Van Orman, D., Hsiao, Y-J., Calderone, S., & **Dai, S.** (2024, April 11-14). *"I Am Not Black": "Educators Are Like, Well, Your Problem Isn't Relevant"*. [Roundtable session]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- \*Mainake, E., **Dai, S.**, Ardasheva, Y., Hsiao, Y-J., Calderone, S., & Newcomer, S. (2024, April 11-14). *Investigating pre-service teachers' culturally responsive, sustaining self-efficacy and competencies*. [Paper presentation]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- \*Jin, G., Dydasco, C., Adesope, O., Sunday, O. J., Nishida, K., Adesope, F., & **Dai, S.** (2024, April 11-14). *The effectiveness of self-constructed and correction concept map activities on chemistry learning*. [Paper presentation]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- \*Dydasco, C., Jin, G., Adesope, O., Sunday, O. J., Nishida, K., & **Dai, S.** (2024, April 11-14). *The effect of concept mapping activities on student motivation and self-efficacy in undergraduate chemistry*. [Poster session]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- \*Ardasheva, Y., **Dai, S.**, Newcomer, S., Mainake, E., Van Orman, D., Salinas, D., Hsiao, Y-J., & Calderone, S., (2024, April 11-14). *Investigating the efficacy of case-based instruction features on enhancing educators' culturally responsive, sustaining competencies*. [Poster session]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- Ardasheva, Y., **Dai, S.**, & Kangas, S. (2024, April 11-14). *Opportunity gap at the intersection of language, disability, and science*. [Roundtable session]. American Educational Research Association Annual Meeting, Philadelphia, PA, United States.
- \*Ramazan, O., **Dai, S.**, Danielson R. W., Kirakosian, A. T., & Carbonneau, K. J. (2023, August). *Confidence in mathematics across sex in the past decade: A measurement invariance investigation* [Poster Presentation]. Annual Conference of American Psychological Association (APA), Washington, D. C.
- \*Kehinde, O.J., **Dai, S.**, & French, B. (2023, April 12-15). *The impact of Q-matrix on classification accuracy and reliability in longitudinal diagnostic classification models*.

- [Paper presentation]. National Council on Measurement in Education Annual Meeting, Chicago, IL, United States
- \*Ramazan, O. & **Dai, S.** (2023, April 13-16). *Examining gender DIF in reading self-concept for the 4th grade American students in PIRLS assessments*. [Poster presentation]. American Educational Research Association Annual Meeting, Chicago, IL, United States.
- \*Carbonneau, K., Van Orman, D., Gotch, C., **Dai, S.**, & Newcomer, S. (2023, April 13-16). *Optimizing case-based instruction in teacher education: The impact of situating the reader*. [Poster presentation]. American Educational Research Association Annual Meeting, Chicago, IL, United States.
- Dai, S.**, Kangas, S., & Ardasheva, Y. (2023, April 13-16). *Opportunity gap at the intersection of language, disability, and mathematics*. [Roundtable presentation]. American Educational Research Association Annual Meeting, Chicago, IL, United States.
- \*Ramazan, O. & **Dai, S.** (2022, August 4-6). *Examining gender DIF in reading self-concept for American middle-grade students in PISA 2018*. [Paper presentation]. American Psychological Association Annual Convention, Minneapolis, MN, United States.
- \*Kehinde, O.J., **Dai, S.**, French, B. (2022, April 21-24). *Item parameter estimation for multidimensional graded response model under complex structure* [Poster presentation]. National Council on Measurement in Education Annual Meeting, San Diego, CA, United States.
- \*Alpizar, D., French, B. & **Dai, S.**, (2022, April 21-24). *A comparison of the testlet model against traditional approaches* [Poster presentation]. National Council on Measurement in Education Annual Meeting, San Diego, CA, United States.
- Svetina Valdivia, D. & **Dai, S.** (2022, April 21-24). *Number of response categories and sample size requirements in polytomous IRT models* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Diego, CA, United States.
- \*Vo, T., **Dai, S.**, French, B. (2022, April 21-24). *Opportunity-to-learn as explanatory sources of differential gender math performance: A multilevel framework* [Paper presentation]. National Council on Measurement in Education Annual Meeting, San Diego, CA, United States.
- Kangas, S., **Dai, S.**, & Ardasheva, Y. (2022, April 22-25). *Progress of English learners with disabilities on NAEP reading* [Paper presentation]. American Educational Research Association Annual Meeting, San Diego, CA, United States.
- \*Ramazan, O., **Dai, S.**, Danielson, R., Hao, T., & Ardasheva, Y. (2022, April 22-25). *Predicting reading self-concept for English learners on 2018 PISA reading* [Paper presentation]. American Educational Research Association Annual Meeting, San Diego, CA, United States.
- \*Vo, T., French, B., & **Dai, S.** (2022, April 22-25). *Black girls' mathematics and science identities using large-scale data: A QuantCrit framework* [Paper presentation]. American Educational Research Association Annual Meeting, San Diego, CA, United States.

- Qian, M., & **Dai, S.** (2022, April 22-25) Dimensionality of the creative personality scale: Psychometric network analysis and a simulation study. In K. Berthiaume (Chair), *Innovations in methodological approaches in creativity assessments for gifted student identification* [Symposium]. American Educational Research Association Annual Meeting, San Diego, CA, United States.
- \*Kehinde, O.J., **Dai, S.**, & French, B.F. (2021, August 12-14) *Application of text mining for the motivational-developmental assessment for university students* [Poster presentation]. American Psychological Association (Virtual) Annual Convention.
- \*Kehinde, O.J., **Dai, S.**, & French, B.F. (2021, May 18 – June 11) *Application of multilevel modeling in large-scale assessments: A systematic review* [Paper presentation]. National Council on Measurement in Education (Virtual) Annual Meeting.
- \*Wong, R. & **Dai, S.** (2021, April 8-12) *Does answer order influence undergraduate students' performance on in-class chemistry exams?* [Paper presentation]. American Educational Research Association (Virtual) Annual Meeting.
- \*Ramazan, O., **Dai, S.**, Danielson, R., Austin, B., Hao, T., & Ardasheva, Y. (2021, April 8-12) *Students' 2018 PISA reading self-concept: Identifying predictors and examining model generalizability for English learners.* [Roundtable presentation]. American Educational Research Association (Virtual) Annual Meeting.
- \*Hao, T., **Dai, S.**, Ardasheva, Y., Ramazan, O., Danielson, R., & Austin, B. (2021, April 8-12) *Student 2018 PISA reading achievement: Identifying predictors and examining model generalizability for English learners.* [Poster presentation]. American Educational Research Association (Virtual) Annual Meeting.
- Qian, M., **Dai, S.** & Wang, X. (2020, April 8-12) *Illustration of multilevel explanatory item response theory model differential item functioning testing with the creative thinking scale* [Poster presentation]. American Educational Research Association Annual Meeting, San Francisco, CA. <http://tinyurl.com/stc5x48> (Conference Canceled)
- \*Zhang, X., **Dai, S.** & Ardasheva, Y. (2020, April) *Factors predicting English listening and speaking learning in China's tertiary education* [Roundtable presentation]. American Educational Research Association Annual Meeting, San Francisco, CA. <http://tinyurl.com/vgbte98> (Conference Canceled)
- Dai, S.** (2019, April). *Identifying predictors of students' skipping behavior on NAEP mathematics assessments: A random forest approach.* Paper accepted at the annual meeting of the American Educational Research Association, Toronto, Canada.
- Dai, S.**, & Wang, X. (2019, April). *Classification methods and criteria in application of cognitive diagnostic models.* Paper accepted at the annual meeting of the American Educational Research Association, Toronto, Canada.
- \*McMain, E.M., Strong, Z., Wong, R.M., Frey, K.S., Jin, G., & **Dai, S.** (2019, April). *Ethnically diverse adolescents describe bystander actions that calm victims' emotions and amplify victims' anger.* Paper presented at the annual meeting of the American Educational Research Association, Toronto, Canada.
- Dai, S.**, & Strong, Z. (2019, August). *Identifying protective factors for Native American*

- student learning using NAEP data*. Paper presented at the annual meeting of the American Psychological Association, Chicago.
- \*Ceylan, M., & **Dai, S.** (2019, August). *Investigating item parameter drift across computer-based and paper-based assessments in PISA 2015*. Paper presented at the annual meeting of the American Psychological Association, Chicago.
- Qian, M., **Dai, S.**, & Wang, X. (2019 August). *DIF detection using multi-group CFA and explanatory IRT models*. Paper presented at the annual meeting of the American Psychological Association, Chicago.
- Wang, X., & **Dai, S.** (2019, August). *Is extreme response style irrelevant to item content?* Paper presented at the annual meeting of the American Psychological Association, Chicago.
- Dai, S.**, & Svetina, D. (2018, April). *Impact of Q-matrix and assessment designs on application of cognitive diagnostic models*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Dai, S.**, Wang, X., & Svetina, D. (2018, April). *A further investigation of the generalized dimensionality discrepancy measure for (multi)dimensionality assessment*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.
- Paulsen, J., **Dai, S.**, & Wang, X. (2018, April). *Comparing reliability estimation methods in CDMs*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Wang, X., **Dai, S.**, Paulsen, J., & Zhang, O. (2018, April). *The comparison of reliability estimates in multidimensional tests*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.
- Svetina, D., Valdivia, A., Feng, Y., Valdivia, M., Paulsen, J., & **Dai, S.** (2018, April). *Examining DIF in the context of CDMs when the Q-matrix is misspecified*. Paper presented at the annual meeting of the National Council on Measurement in Education, New York, NY.
- Dai, S.**, Wang, X., Svetina, D., Underhill, S., & Feng, Y. (2017, April). *The application of minimum discrepancy estimation in implementation of cognitive diagnostic models*. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
- Dai, S.**, & Svetina, D. (2017, April). *Investigation and treatment of missing responses in implementation of cognitive diagnostic models*. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
- Dai, S.**, Svetina, D., & Chen, C. (2017, April). *Dealing with missingness in cognitive diagnostic models when the Q-matrix is misspecified*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.
- Dai, S.**, Svetina, D., & Wang, X. (2017, April). *Making multilevel diagnostic inferences in large-scale assessments*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.
- Chen, C., **Dai, S.**, & Zhang, J. (2017, April). *Comparison of three Q-matrix validation*

- methods for developing cognitive diagnostic assessments*. Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.
- Wang, X., Svetina, D., **Dai, S.** & Zhang, O. (2017, April). *How much can we gain from collateral information for subscore reporting?* Paper presented at the annual meeting of the National Council on Measurement in Education, San Antonio, TX.
- Chen, C, Zhang, J., & **Dai, S.** (2017, April). *The effects of Q-matrix misspecification on classification accuracy and consistency for cognitive diagnostic assessment*. Paper presented at the annual meeting of the American Educational Research Association, San Antonio, TX.
- Svetina, D., Valdivia, R., Underhill, S., **Dai, S.**, & Wang, X. (2016, April). *Parameter recovery in multidimensional item response theory models under complexity and nonnormality*. Paper presented at the annual meeting of the National Council on Measurement in Education, Washington, D.C.
- Wang, X., Svetina, D., & **Dai, S.** (2016, April). *Exploration of factors affecting the necessity of reporting test subscores*. Paper presented at the annual meeting of the National Council on Measurement in Education, Washington, D.C.
- Dai, S.**, Svetina, D., & Brown, N. J. S. (2015, April). *Predicting skipping behavior in NAEP mathematics assessment: A multilevel modeling approach*. Poster presented at the annual meeting of the National Council on Measurement in Education, Chicago, IL.
- Maltese, A., Ross, H., & **Dai, S.** (2015, April). *Assessing multinational interest in STEM*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Maltese, A., Ross, H., & **Dai, S.** (2014, March). *A comparison of STEM experience in Australia, China, and the United States*. Paper presented at the Midwest Conference of the Comparative and International Education Society (CIES), Bloomington, IN.
- Brown, N., **Dai, S.** & Svetina, D. (2014, April). *Predictors of omitted responses on the 2009 National Assessment of Educational Progress (NAEP) mathematics assessment*. Poster presented at the annual meeting of the American Educational Research Association, Philadelphia, PA.
- Brown, N., Svetina, D., & **Dai, S.** (2014, April). *Impact of methods of scoring omitted responses on achievement gaps*. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- Chen, C., Zhang, J., & **Dai, S.** (2014, April). *A case study of optimizing Q-matrix in cognitive diagnostic assessment*. Paper presented at the annual meeting of the National Council on Measurement in Education, Philadelphia, PA.
- Dai, S.** (2013, April) *Do skill profiles and multidimensionality tell the same thing? Application of multidimensional item response theory models and cognitive diagnostic models to Chinese proficiency listening test*. Poster presented at the Cognition and Assessment SIG Poster Session, the annual meeting of the American Educational Research Association, San Francisco, CA.

### **Other Presentations (Non-Refereed)**

Howland, A., Wu, P-J., & **Dai, S** (2016). *The Indiana Maternal, Infant, Early Childhood Home Visiting Program (IN-MIECHV) Quarterly Benchmark Reports for FY15*. Report discussions presented to the Indiana State Department of Health, Indiana Department of Child Services, Healthy Families Indiana, and Indiana Nurse-Family Partnership, Indianapolis, IN.

Howland, A. & **Dai, S** (2017). *The Indiana Maternal, Infant, Early Childhood Home Visiting Program (IN-MIECHV) Quarterly Benchmark Reports for FY15*. Report discussions presented to the Indiana State Department of Health, Indiana Department of Child Services, Healthy Families Indiana, and Indiana Nurse-Family Partnership, Indianapolis, IN.

### **Panels**

**Dai, S.** (2025, October 21) *Advancing AI at Washington State University*. In session *Incorporating AI into Educational Measurement: Faculty, Research, Curriculum, and Universities*. Artificial Intelligence in Measurement and Education Conference (AIME-Con). National Council on Measurement in Education, Pittsburg, PA.

Van Orman, D., Wu, Y-C, **Dai, S.**, & Andrade, A. (2025, April 23-26). *Interrogating the value of classroom-external assessment: A foundational discussion for the field*. [Organized discussion session]. National Council on Measurement in Education Annual Meeting, Denver, CO, United States.

### **Invited Talks**

*Interrogating the value of classroom-external assessment: A foundational discussion for the field* (with Andrade, H. & Van Orman, D.). NCME Large-Scale Assessment SIGIMIE Fireside Chat, October 2025.

*Missing Data in IRT*. University of Denver Morgridge College of Education, April 2025.

## **GRANTS, CONTRACTS, & FUNDING**

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### **Awarded - External**

2025-2027, **Statistician/Senior Personnel**, *Real-time dynamics of stress, promotive factors, and academic and mental health outcomes among racially/ethnically minoritized students during the transition to high school*, PI: C. Liu. Spencer Research Grant. Amount requested: \$49,976.

2025-2029, **Co-Principal Investigator & Program Evaluator**, *Certifying and advancing multilingual teachers by increasing numbers through three grow-your-own strands (CAMINOS)*. PI: Y. Ardasheva. Department of Education Office of English Language Acquisition - National Professional Development Grant. Amount: \$3,067,509.

2025, **Statistician**, *A digital memory notebook to support everyday functioning, decrease caregiver burden and track health status*. PI: Schmitter-Edgecombe. Department of Defense (AZ190055), 2021-2025. Dai share: \$4,750.

2023-2024, **Statistician**, *Creating adaptive, wearable technologies to assess and intervene for individuals with ADRDs*. PI: Schmitter-Edgecombe, M. National Institute on Aging (R35 AG071451), 2021-2026, Amount: \$4,590,000.

2023-2024, **Statistician**, *Multi-modal assessment and intervention for functional independence*. PI: Schmitter-Edgecombe, M. National Institute on Aging (R01 AG065218), 2020-2025, Amount: \$2,992,391.

2022, **Statistician**, *Clinician-in-the-loop smart technology to support health monitoring and intervention for chronic conditions*. PIs: Cook/Fritz/Schmitter-Edgecombe. NIH: National Institute of Nursing Research (R01 NINR016732), 2017-2022, Amount: \$1,826,091.

### **Awarded - Internal**

2024-2026, **Principal Investigator**, *Examining test-taking behaviors of multilingual learners in NAEP digital assessments: Roles of accommodations, universal design elements, and item features*. WSU College of Education Faculty Funding Award. Amount: \$9,995.

2024-2025, **Co-Principal Investigator**, *Career and technical education to promote stem employment pathways for youth with disabilities*. PI: J. Taylor. WSU College of Education Faculty Funding Award. Amount: \$9,664.

2022-2024, **Co-Principal Investigator**, *Infusing teacher- and leader-preparation curriculum with case-based instruction focused on culturally responsive pedagogy and leadership*. PI: Y. Ardasheva. WSU College of Education Faculty Funding Award. Amount: \$9,976.

2021-2022, **Co-Principal Investigator**, *Using case-based instruction to create authentic and effective classroom experiences for preservice teachers*. PI: K. Carbonneau. WSU College of Education Faculty Funding Award. Amount: \$9,705.

2021-2022, **Psychometrician and Statistician**, *Data analysis for the motivated strategies for learning questionnaire (MSLQ) project*. (With A. Adesope). WSU Pharmacy and Pharmaceutical Sciences. Amount: \$18,288.

2019-2021, **Principal Investigator**, *Education research in the era of big data – Evidence from large-scale surveys*. CO-PI: K. Carbonneau. WSU College of Education High-Risk/High-Reward Grant. Amount: \$10,000.

2019-2021, **Principal Investigator**, *Advancing education research using large-scale assessment data*. WSU the Office of Research Advancement and Partnerships New Faculty Seed Grant Competition. Amount: \$18,191.

2019-2020, **Psychometrician**, *Psychometric analysis for the IT-related self-efficacy measure*. WSU Carson College of Business. (With D. Compeau). Amount: \$6,000.

### **PROFESSIONAL MEMBERSHIPS**

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[American Educational Research Association](#)

2012-present

Division D - Psychometrics, Measurement, and Assessment

SIG – Cognition and Assessment

SIG – Large-Scale Assessment

SIG – NAEP Studies	
<a href="#">National Council on Measurement in Education</a>	2012-present
SIGIMIE – Large-Scale Assessment	2021-present
<a href="#">Psychometric Society</a>	2012-present
<a href="#">American Psychological Association</a>	2018-present
Division 5 - Quantitative and Qualitative Methods	
Division 15 - Educational Psychology	

## SERVICE

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### External/Professional Service

#### **Editorial Boards**

Associate Editor, <a href="#">Journal of Psychoeducational Assessment</a>	2025-present
Statistical and Methodological Advisor, <a href="#">Journal of School Psychology</a>	2018-present
Consulting Editor, <a href="#">Journal of Experimental Education</a>	2019-present
Editorial Board member, <a href="#">Monographs of the Society for Research in Child Development</a>	2025-present
Editorial Board member, <a href="#">Educational Researcher</a>	2022-present
Editorial Board member, <a href="#">Psychological International</a>	2024-present
Associate Editor, <a href="#">Frontiers in Education, section Assessment, Testing and Applied Measurement</a>	2020-25
Review Editor, <a href="#">Frontiers in Education</a>	2018-20

#### **Positions & Committees**

Member, AERA Div. D Outstanding Dissertation Award Committee	2024-25
Chair, NCME Large-Scale Assessment SIGIMIE	2023-24
Co-Chair, NCME Large-Scale Assessment SIGIMIE	2022-23
Secretary & Treasurer, AERA SIG 167 – Cognition and Assessment	2020-23
Member, NCME Annual Awards Committee	2021-24

#### **Reviewing**

##### Grants & Scholarships

<i>American Psychological Foundation</i>	2024-2026
<u>Journal Manuscripts (selected)</u>	2015-present
<i>Psychometrika, Psychological Methods, Journal of Educational Measurement, Applied Psychological Measurement, Educational and Psychological Measurement, British Journal of Mathematics and Statistical Psychology, Educational Measurement: Issues and Practice, Behaviormetrika, Journal of Educational and Behavioral Statistics, Behavior Research Methods, Educational Psychology, International Journal of Testing, Journal of Child and Family Studies, European Journal of Psychological Assessment, Large-Scale Assessment in Education, Teaching and Teacher Education, Journal of Engineering Education</i>	
<i>Methodology - European J. of Research Methods in Behavioral and Social Sciences</i>	

### Conference Proposals

American Educational Research Association	
Division D - Psychometrics, Measurement, and Assessment	2015-18
SIG - Cognition and Assessment	2015-19
SIG - Large-Scale Assessment	2016-17
SIG – NAEP Studies	2024
National Council on Measurement in Education	
Annual Meeting	2016-18
Graduate Student Research Session	2015-16

### ***Others***

NCME Annual Meeting Session Chair	2017
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### **WSU University Service**

Center for Institutional Research Computing Advisory Committee	2017-present
Showcase for Undergraduate Research and Creative Activities judge	2026
GPSA Research Exposition judge	2026
Graduate School Scholarship Committee	2024-2026
New Faculty SEED Grant Competition reviewer	2021
RA and \$10K Competition reviewer/judge	2019
New Faculty Orientation - Second-Year Faculty Panel Speaker	2018

### **WSU College of Education, Sport, & Human Sciences Service**

CESHs Scholarship Committee	2025-present
Faculty Excellence Awards Committee	2024-25
Research Advisory Committee	2023-present
Faculty Funding Award reviewer	2022-23
Graduate Studies Committee member	2022-24
Scholarship reviewer	2018, 2025-present
Graduate Studies Committee member	2018-20

### **WSU Department Service**

Ed-Psych Recruitment Committee	2017-present
Ed-Psych program website design/maintenance	2017-present

### **Others**

Faculty Search Committee, Inquiry Methodology, IUB	2015-16
Workshop in Methods (WIM) Advisory Board, IU, student member	2014-16
AERA Div. D Membership Committee, student representative	2014-15
Inquiry Brownbag Committee, IU, vice president	2014-15
Inquiry Brownbag Committee, IU, secretary	2013-14
Beijing Linguistics Association, Beijing, secretary	2007-11

### **GRADUATE COMMITTEES CHAIRED**

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<i>Student</i>	<i>Degree</i>	<i>Program</i>	<i>Campus</i>	<i>Duration</i>
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Mehriban Ceylan	M.A.	Ed Psych	Pullman	Aug 2018 – Dec 2019
Ruo Chen Zhang	M.Ed.	Ed Psych	Pullman	Aug 2018 – Dec 2019
Olasunkanmi Kehinde	Ph.D.	Ed Psych	Pullman	Aug 2019 – May 2024
Onur Ramazan <sup>#</sup>	M.A. & Ph.D.	Ed Psych	Pullman	Nov 2021 – May 2025
Antranik Kirakosian	Ph.D.	Ed Psych	Pullman	Mar 2022 – May 2025
David Buitenveld	M.A.	Ed Psych	Pullman	Apr 2025 –

*Note.* # Co-Chairing.

## **PROFESSIONAL DEVELOPMENT**

### **Training and Workshops**

#### ***Research-Related***

An Introduction to Machine Learning for The Social Sciences (by Dr. Tracy Sweet), WSU Learning and Performance Research Center (LPRC) Methods Workshop, on Zoom, June 2022.

Mixed Methods (by Dr. Matthew McCrudden), WSU LPRC Methods Workshop, Pullman, WA, May 2019.

Latent Growth Curve Modeling (by Dr. Greg Hancock), WSU LPRC Methods Workshop, Pullman, WA, May 2018.

Manipulating Data and Analytics Using SAS University Edition, WSU Center for Interdisciplinary Statistical Education and Research, Pullman, WA, Nov 2017.

The NAEP Database Training Seminar, sponsored by the National Center for Education Statistics (NCES), Institute of Education Sciences (IES), and U.S. Department of Education, Washington, DC, 2012.

Equipping Your Statistical Toolbelt: The Regression, ANOVA, etc. (GLM) workshop, Indiana Statistical Consulting Center (ISCC), Bloomington, IN, 2012.

#### ***Teaching-Related***

Teaching Innovation Forum, WSU AOI Faculty Training and Workshop Series, Pullman, WA, 2020.

Refresh and Restart Community of Practice, WSU Academic Outreach and Innovation, Pullman, WA, 2017.

Dealing with Difficult Situations with Students, WSU New Faculty Workshop, Pullman, WA, 2017.

Teaching in the Round in the Spark, WSU Workshop on Learning about Teaching “In the Round” in the New Digital Classroom Building’s Active Learning Hall, Pullman, WA, 2017.

#### **Certificates**

Teaching Chinese as a Second Language, the Committee for Certifying Qualification to Teach Chinese as a Foreign Language, 2005

Machine Learning, Coursera (<https://www.coursera.org/course/ml>), 2014

## RESEARCH INTERESTS

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**Psychometrics:** (Multidimensional) item response theory, large-scale assessments and surveys, cognitive diagnostic models, classical test theory, instrument development and validation, measurement invariance and differential item functioning, and language assessment.

**Quantitative Methods:** Latent variable modeling, missing data analysis, structural equation modeling, multilevel/hierarchical modeling, longitudinal data analysis, & machine learning applications in education.