Merve Sarac

CONTACT INFORMATION	1025 West Johnson Street Madison, WI 53706	*Voice:* (608) 419-1053 *E-mail:* sarac@wisc.edu *Linkedin:* www.linkedin.com/in/mrvsarac/ *Personal Website:* https://saracmrv.github.io/

RESEARCH INTERESTS

Quantitative Research Methodology, Latent Variable Models, Item Response Theory (IRT), Test Security, and Psychometrics

EDUCATION

University of Wisconsin-Madison, Madison, Wisconsin
Ph.D. Candidate, Quantitative Methods, May, 2023 (expected graduation)
Minor in Statistics

- Advisor: Dr. James Wollack

University of Connecticut, Storrs, Connecticut
M.A., Research Methods, Measurement, and Evaluation, August, 2018

- Masters Thesis: "English as a Second Language Proficiency: An IRT Approach to Scoring"
- Advisor: Dr. Eric Loken

Bogazici University, Istanbul, Turkey
M.S., Secondary School Mathematics Education, August, 2016

- Masters Thesis: "A Prospective Secondary Mathematics Teacher's Development of the Meaning of the Cartesian Form of Complex Numbers"
- Advisor: Dr. Gulseren Karagoz Akar

B.S., Integrated B.S. and M.S. Program in Teaching Mathematics, May, 2014

ACADEMIC APPOINTMENTS

Lecturer, University of Wisconsin-Madison (08/19 - 05/20)
–Ed Psych 773: Factor Analysis, Multidimensional Scaling & Cluster Analysis (Spring 2020)
–Ed Psych 771: Test Construction (Fall 2019)

Teaching Assistant, University of Wisconsin-Madison (08/18 - 05/19)
–Ed Psych 761: Statistical Methods Applied to Education II (Spring 2019)
–Ed Psych 760: Statistical Methods Applied to Education I (Fall 2018)

AWARDS & HONORS

Early Excellence in Teaching Award, University of Wisconsin-Madison (03/20): $1,000
Turkish Ministry of National Education Fellowship for Graduate Studies (02/14): $110,000
Prof. Dr. Hikmet Sebuktekin Education Grant Award, Bogazici University (11/13): $900
Turkish Ministry of National Education Scholarship for Undergraduate Studies: $7,200
International Student Exchange Program Grant in the United States: $20,000
High Honors Graduation Certificate, Bogazici University (06/14)

PROFESSIONAL & RESEARCH APPOINTMENTS

Project Assistant, The Office of Testing and Evaluation Services, University of Wisconsin-Madison (09/20 - present)

Research Intern, Office of Research Strategies, National Board of Medical Examiners (NBME) (06/22-08/22)

Statistical Consulting, The Office of Testing and Evaluation Services, University of Wisconsin-Madison (11/21 - 03/22)

Research Intern, Office of Research Strategies, National Board of Medical Examiners (NBME) (06/21-07/21)

Project Assistant, The Institute of Education Sciences (IES; #R305D190053) project *Bayesian dynamic borrowing: A method for utilizing historical data in education research.* Principal Investigators: David Kaplan, University of Wisconsin-Madison & Jianshen Chen, College Board (07/20)

Research Intern, The American Institute of Certified Public Accountants (AICPA) (06/20-08/20)

Project Assistant, The Office of Testing and Evaluation Services, University of Wisconsin-Madison (09/18 - 09/19)

Research Assistant, The Scientific and Technological Research Council of Turkey (10/15 - 09/16)

Research Assistant, Bogazici University (10/13 - 05/14)

PUBLICATIONS	Sarac, M. & Loken, E. (2022). Examining Patterns of Omitted Responses in a Large-Scale English Language Proficiency Test. *International Journal of Testing*, 1-17. https://doi.org/10.1080/15305058.2022.2070756

Sarac, M. & Feinberg, R. (2022). Exploring the Utility of Nonfunctional Distractors. In M. Wiberg, D. Molenaar, J. González, J.-S. Kim, & H. Hwang (Eds.), *Quantitative Psychology: The 86th Annual Meeting of the Psychometric Society* (pp. 83-93). Springer. https://doi.org/10.1007/978-3-031-04572-1_7

Murphy, D., Sarac, M., & Sedivy S. (2022). Why U.S. undergraduate students are (not) studying languages other than English. *Second Language Research & Practice*, 3(1), 1-33. https://doi.org/10125/69866

Karagoz Akar, G. & Sarac, M. (under review). Development of Complex Numbers Through Quantitative Reasoning: The Case of Esra. *Journal of Mathematical Behavior.*

Karagoz Akar, G., Sarac, M. & Belin, M. (under review). Exploring Prospective Teachers Development of the Cartesian Form of Complex Numbers. *Mathematics Teacher Educator.*

MANUSCRIPTS IN PREPARATION

Sarac, M. & Wollack, J. (in preparation). Reducing Score Bias Through Real-Time Rerouting of Examinees with Preknowledge.

Sarac, M. & Wollack, J. (in preparation). Real-Time Preknowledge Detection for Computer-Based Linear Tests.

LEADERSHIP & SERVICES

Deans Graduate Student Advisory Committee Member, Graduate School Deans Advisory Board, School of Education, University of Wisconsin-Madison (2022-present)

Inclusion Organizer, Diversity and Inclusion Association (DIA) Leadership, Department of Educational Psychology, University of Wisconsin-Madison (2022-present)

Graduate Student Representative, Diversity Issues and Testing Committee (CODIT), National Council on Measurement in Education (2022-present)

National Council on Measurement in Education-Graduate Student Issues Committee Standards Study Group (2021-present)

Brown Bag Panelist, *What to Expect from Faculty and What they Expect from You*, Educational Psychology Student Association, University of Wisconsin-Madison (09/2022)

Proposal Reviewer, 2023 American Educational Research Association Annual Meeting (09/2022)

Proposal Reviewer, 2023 National Council on Measurement in Education Annual Meeting (09/2022)

Event Organizer, *We're here too! An Exciting Networking Event for Historically Marginalized Researchers & Students*, Diversity Issues and Testing Committee (CODIT), National Council on Measurement in Education (04/2022)

Panel Session Organizer, *Not There Yet: Addressing Differential Educational Outcomes for Marginalized Populations in the Era of COVID-19*, Diversity Issues and Testing Committee (CODIT), National Council on Measurement in Education (04/2022)

Panel Session Organizer, *Intersectional Career Panel*, Diversity and Inclusion Association (DIA) Leadership, Department of Educational Psychology, University of Wisconsin-Madison (03/2022)

Quantitative Methods Area Student Representative, Diversity and Inclusion Association (DIA) Steering Committee, Department of Educational Psychology, University of Wisconsin-Madison (2022)

Educational Psychology Graduate Student Mentoring Program, Educational Psychology Student Association, University of Wisconsin-Madison (2019-present)

CONFERENCE PRESENTATIONS

Sarac, M. & Wollack, J. (2023, April). Comparison of Likelihood Ratio Test-Based Preknowledge Detection Statistics for Use in Real-Time. *National Council on Measurement in Education*, Chicago, IL.

Sarac, M., Feinberg, R., Liu, C., & Ross, L. (2023, April). Longitudinal Analysis of Response Accuracy and Time: Baseline Trends for Compromised Items. *National Council on Measurement in Education*, Chicago, IL.

Sarac, M. & Wollack, J. (2022, October). Examining Preknowledge Detection Statistics based on Likelihood Ratio Test for Use in Real-Time. *Conference on Test Security*, Princeton, NJ.

Sarac, M., Feinberg, R., Liu, C., & Ross, L. (2022, October). Identifying Statistical Trends for Potentially Exposed Items. *Conference on Test Security*, Princeton, NJ.

Sarac, M., Feinberg, R., O'Donnell, F., & Ong, T. Q. (2022, April). Interactive Score Reporting Dashboard Improvement through NLP Analysis of Focus Group Feedback. *National Council on Measurement in Education*, San Diego, CA.

Sarac, M. & Xu, T. (2021, December). Two-Step Detection of Examinees with Preknowledge and Exposed Items. *Conference on Test Security*, Virtual.

Sarac, M. & Feinberg, R. (2021, November). The Utility of Nonfunctioning Distractors for Credentialing Tests. *Conference on Test Security*, Virtual.

Sarac, M., Feinberg, R., O'Donnell, F., & Ong, T. Q. (2021, November). Topic Modeling and Sentiment Analysis of User Feedback: Improving a Score Reporting Dashboard. *Natural Language Processing (NLP) in Assessment*, National Board of Medical Examiners Educational Virtual Conference.

Sarac, M. & Wollack, J. (2021, October). Reducing Score Bias Through Real-Time Rerouting of Examinees with Anomalous Responses: Impact of Relaxing the Assumption of Identical Forms. *Conference on Test Security*, Virtual.

Feinberg, R. & Sarac, M. (2021, July). Exploring the Utility of Nonfunctioning Distractors. *International Meeting of the Psychometric Society 2021*, Virtual.

Sarac, M. & Wollack, J. (2021, June). Reducing Score Bias Through Real-Time Rerouting of Examinees with Anomalous Responses. *National Council on Measurement in Education*, Virtual.

Sarac, M. & Xu, T. (2021, June). Preknowledge Detection in Multiple-Format Testing. *National Council on Measurement in Education*, Virtual.

Sarac, M. & Wollack, J. (2020, September). Real-Time Anomalous Response Detection for Computer-Based Linear Tests. *National Council on Measurement in Education*, Virtual.

Sarac, M. & Loken, E. (2020, September). An Empirical Study of Omitted Answers on a Language Proficiency Test. *National Council on Measurement in Education*, Virtual.

Sarac, M. & Wollack, J. (2020, July). A Score Differencing Method for Item Preknowledge Detection in Real-time. *International Meeting of the Psychometric Society 2020*, Virtual.

Sarac, M. & Wollack, J. (2019, November). A Score Differencing Index for Real-Time Anomalous Response Detection for Computer-Based Linear Tests. *Ideas in Testing*, Chicago, IL.

Sarac, M. & Wollack, J. (2019, October). A Method for Real-Time Anomalous Response Detection for Computer-Based Linear Tests. *Conference on Test Security*, Miami, FL.

Sarac, M. & Karagoz Akar, G. (2017, October). A Prospective Secondary Mathematics Teachers Development of the Meaning of Complex Numbers Through Quantitative Reasoning. *39th Annual Meeting of the International Group for the Psychology of Mathematics Education North American Chapter (PME-NA 39)*, Indianapolis, IN.

INVITED PRESENTATIONS & WORKSHOPS	Writing Test Questions (2019, November). *Nursing Professional Development Fall Workshop*. South Central Wisconsin Affiliate of the Association for Nursing Professional Development, Madison, WI.
	Technical Advisory (2021, October). *Test Development Committee (Mathematics)*. The Office of Testing and Evaluation Services, University of Wisconsin-Madison, Madison, WI.
PROFESSIONAL TRAINING	People from Multiple Races or Identities: Best Practices in Handling Complex Social Identity Data (2022, September). Culturally Responsive and Equitable Evaluation (CREE) Learning Opportunities, The Society for Research on Educational Effectiveness.
	Resilience & Wellbeing (2022, September). Mentoring Session, Women in Measurement.
	Creating an Individual Development Plan (2021, March). University of Wisconsin-Madison Graduate School Professional Development, Madison, WI.
	Working Effectively in Teams: Fundamentals of Team Dynamics and From Conflict to Collaboration in Teams (2021, March). University of Wisconsin-Madison Graduate School Professional Development, Madison, WI.
	Modern Meta-analysis Research Workshop (2021, February). The AERA-ICPSR PEERS Data Hub.

Grant Writing (2021, January). University of Wisconsin-Madison Graduate School Professional Development, Madison, WI.

A Practical Approach to Project Management for Graduate Students (2021, January). University of Wisconsin-Madison Graduate School Professional Development, Madison, WI.

Learning Environment and Pedagogics Workshop (2021, January). *Teaching Academy*. University of Wisconsin-Madison, Madison, WI.

Inclusive Teaching Workshop (2020, November). *Inclusive Teaching in a Difficult Semester Series*. Delta Program in partnership with the UW-Madison Collaborative for Advancing Learning and Teaching, Madison, WI.

Workshop by Scott Long (2018, January). *Reproducible Results and the Workflow of Data Analysis*. University of Connecticut, Storrs, CT.

PROFESSIONAL MEMBERSHIPS	Psychometric Society National Council on Measurement in Education Educators of Measurement SIGIMIE at NCME Certification and Licensure SIGIMIE at NCME American Educational Research Association American Psychological Association American Evaluation Association
COMPUTER SKILLS	Programming Languages & Software: R, M*plus*, OpenBUGS, HLM, SPSS, G*Power, AMOS Applications: R Shiny, LaTeX, R Markdown
REFERENCES	**James Wollack** Professor Department of Educational Psychology University of Wisconsin-Madison jwollack@wisc.edu **Daniel Bolt** Professor Department of Educational Psychology University of Wisconsin-Madison dmbolt@wisc.edu **David Kaplan** Professor Department of Educational Psychology University of Wisconsin-Madison david.kaplan@wisc.edu