

Matthew J. Madison

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Mary Frances Early College of Education
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Education

<i>Degree</i>	<i>Program</i>	<i>Institution</i>	<i>Year</i>
Ph.D.	Quantitative Methodology	University of Georgia	2016
M.S.	Statistics	University of Georgia	2014
M.A.	Mathematics	Central Michigan University	2011
B.S.	Mathematics	University of South Carolina	2009

Academic Positions

University of Georgia 2020 – Present
College of Education
Department of Educational Psychology
Assistant Professor, Quantitative Methodology

Clemson University 2018 – 2020
College of Education
Department of Education and Human Development
Assistant Professor, Learning Sciences

University of California – Los Angeles 2016 – 2018
Graduate School of Education and Information Studies
Social Research Methodology Division
Assistant Professor, Advanced Quantitative Methods

Research Interests

Psychometrics; diagnostic classification models; longitudinal measurement

Publications

*Indicates collaboration with a graduate student.

**Indicates alphabetical order with equal contribution.

*Maas, L., **Madison, M. J.**, Brinkhuis, M. J. S. (in press). Properties and performance of the one-parameter log-linear cognitive diagnosis model. *Frontiers in Education*.
<https://doi.org/10.3389/feduc.2024.1287279>.

- **Ackerman, T. A., Bandalos, D. L., Briggs, D. C., Everson, H. T., Ho, A. D., Lottridge, S. M., **Madison, M. J.**, Sinharay, S., Rodriguez, M. C., Russell, M., von Davier, A. A., & Wind, S. A. (2023). Foundational Competencies in Educational Measurement. *Educational Measurement: Issues and Practice*. <https://doi.org/10.1111/emip.12581>.
- ***Madison, M. J.**, Chung, S., Kim, J., Bradshaw, L. P. (2023). Approaches to estimating longitudinal diagnostic classification models. *Behaviormetrika*. <https://doi.org/10.1007/s41237-023-00202-5>.
- **Jurich, D., & **Madison, M. J.** (2023) Measuring item influence for diagnostic classification models. *Educational Assessment*. <https://doi.org/10.1080/10627197.2023.2244411>.
- Arastoopour Irgens, G., Hirsch, S., Herro, D., & **Madison, M. J.** (2023). Analyzing a teacher and researcher co-design partnership through the lens of communities of practice. *Teaching and Teacher Education*, 121. <https://doi.org/10.1016/j.tate.2022.103952>.
- *Herro, D., **Madison, M. J.**, Arastoopour Irgens, G., Hirsch, S., Abimbade, O. & Adisa, O. (2022). Exploring Elementary Teachers' Perceptions of Data Science and Curriculum Co-Design through Professional Development. *Journal of Technology and Teacher Education*, 30(4), 493-525.
- Madison, M. J.** (2019). Reliably assessing growth with longitudinal diagnostic classification models. *Educational Measurement: Issues and Practice*, 38(2), 68-78. <https://doi.org/10.1111/emip.12243>.
- Madison, M. J.**, & Bradshaw, L. (2018). Assessing growth in a diagnostic classification model framework. *Psychometrika*, 83(4), 963-990. <https://doi.org/10.1007/s11336-018-9638-5>.
- Madison, M. J.**, & Bradshaw, L. (2018). Evaluating intervention effects in a diagnostic classification model framework. *Journal of Educational Measurement*, 55(1), 32-51. <https://doi.org/10.1111/jedm.12162>.
- Bradshaw, L., & **Madison, M. J.** (2016). Invariance properties for general diagnostic classification models. *International Journal of Testing*, 16(2), 99-118. <https://doi.org/10.1080/15305058.2015.1107076>.
- Madison, M. J.**, & Bradshaw, L. (2015). The effects of Q-matrix design on classification accuracy in the LCDM. *Educational and Psychological Measurement*, 75(3), 491-511. <https://doi.org/10.1177/0013164414539162>.
- Piatek-Jimenez, K., **Madison, M. J.**, & Przybyla-Kuchek, J. (2014). Equity in mathematics textbooks: A new look at an old issue. *Journal of Women and Minorities in Science and Engineering*, 20(1), 55-74. <https://doi.org/10.1615/JWomenMinorScienEng.2014008175>.
- Piatek-Jimenez, K., & **Madison, M. J.** (2012). Equity in mathematics textbooks: A report on progress. *Proceedings of the 34th annual meeting of the North American Chapter of the*

Manuscripts Under Review

*Indicates collaboration with a graduate student.

***Madison, M. J.**, Bao, J., Pan, Q., & Schellman, M. Ten frequently asked questions about diagnostic classification models. Manuscript under review.

*Hirsch, S., Herro, D., Kelley, M., **Madison, M. J.**, & Taylor, J. Elementary educators' understanding and implementation of universal design for learning practices in data science instruction. Manuscript under review.

*Schellman, M., & **Madison, M. J.** Estimating the reliability of skill transition in longitudinal diagnostic classification models. Manuscript under review.

***Madison, M. J.**, Jeon, M., Moore, A., Zor, S., Fager, M., Maas, L., Haab, S., & Cotterell, M. E. The effects of measurement and structural model misspecifications in longitudinal diagnostic classification models. Manuscript under review.

***Madison, M. J.**, Wind, S. A., Maas, L., Yamaguchi, K., & Haab, S. A one-parameter diagnostic classification model with familiar properties. Manuscript under review.

*Harrison, A., **Madison, M. J.**, Naqvi, N., Bowman, K., & Campbell, J. Autism stigma and knowledge questionnaire (ASK-Q): Cross-cultural psychometric investigation and measure revision. Manuscript under review.

***Madison, M. J.**, Jeon, M., Cotterell, M. E., Haab, S., & Zor, S. TDCM: An R package for estimating longitudinal diagnostic classification models. Manuscript under review.

Dumas, D., Nguyen, M. H., & **Madison, M. J.** A proposal to shift educational testing practice in the post-affirmative action era. Manuscript under review.

Manuscripts In Preparation

*Indicates collaboration with a graduate student.

Yuan, Y., & Madison, M. J. Psychometric methods for the empirical evaluation of learning progressions. Manuscript in preparation.

*Resch, J., Baugh, S., Duan, H., Tang, J., Jeon, M., & **Madison, M. J.** Bayesian transition diagnostic classification models with Pölya-gamma augmentation. Manuscript in preparation.

***Madison, M. J.**, Zor, S., Shen, Y., & Morris, A. More meaningful metrics: A case for diagnostic models in educational research. Manuscript in preparation.

Current Grant Support

Co-Principal Investigator: *FY24 Anderson School District 5* (2023 – 2024). Anderson Five School District ~ \$148,196.

Principal Investigator: *Generalized, Multilevel, and Longitudinal Psychometric Models for Evaluating Educational Interventions* (2022 – 2025). Institute of Educational Sciences ~ \$899,550.

Co-Principal Investigator: *CT-STEM Pop-Ups4All: A Research-Practice-Partnership for Agile Learning* (2020 – 2024). National Science Foundation ~ \$948,551.

Co-Principal Investigator: *Native STEM Portraits: A Longitudinal, Mixed-Methods Study of the Intersectional Experiences of Native Learners and Professionals in STEM* (2020 – 2024). National Science Foundation ~ \$1,545,963.

Principal Investigator: *A Family of Diagnostic Models for Evaluating Learning Progressions* (2019 – 2024). National Science Foundation ~ \$229,430.

Grant Proposals Under Review

Co-Principal Investigator: *FY25 Anderson School District 5* (2024 – 2025). Anderson Five School District ~ \$148,196.

Co-Principal Investigator: *Diagnostic Instrument for Teachers' Content and Pedagogical Content Knowledge of Numbers and Operations* (2024 – 2028). Institute of Education Sciences ~ \$1,999,999.

Previously Funded Grants

Principal Investigator: *Doubly Mixture Psychometric Models for Modeling Learning Progressions* (2021 – 2023). UGA Faculty Seed Grants in the Sciences ~ \$22,206.

Principal Investigator: *Assessing Nested Effects in a Diagnostic Classification Model Framework* (2017 – 2018). UCLA Faculty Research Grant ~ \$6,305.

Honors and Awards

2024 Distinguished Paper Award 2024
South Carolina Educators for the Practical Use of Research (SCEPUR)
36th Annual SCEPUR Conference

Outstanding Reviewer 2022
Journal of Educational and Behavioral Statistics
American Educational Research Association

Presenter's Choice Award STEM for All Video Showcase Portraits of Giving Back by Native Individuals in STEM	2022
Paul L. Beasley TRiO Trailblazer McNair Alumni Award University of South Carolina TRIO Programs	2019
Outstanding Dissertation Award American Educational Research Association Cognition and Assessment Special Interest Group	2019
Owen W. Scott Award for Academic Merit and Professional Promise University of Georgia Department of Educational Psychology	2015
UGA Amazing Student University of Georgia College of Education	2014
2 nd Place: Quantitative Division Poster <i>Group-mean centering in hierarchical linear models: A weighting approach.</i> Poster presented at the 2013 College of Education Graduate Student Research Conference in Athens, GA.	2013
Outstanding Tutor Honorable Mention Central Michigan University Department of Mathematics	2012
Outstanding Teaching Assistant Central Michigan University Department of Mathematics	2011
Emerging Scholar Award University of South Carolina Ronald E. McNair Scholars Program	2008

Research Presentations

*Indicates collaboration with a graduate student.

2024

*Morris, A., & Madison, M. J. (2024, April). *Exploring the impact of culturally-relevant assessment material on black students' reading comprehension.* Poster to be presented at the 2024 Annual Meeting of the National Council on Measurement in Education in Philadelphia, PA.

- *Haab, S., & **Madison, M. J.** (2024, April). *Continuous effect loglinear diagnostic classification model: Incorporating general continuous effects in the LCDM*. Poster to be presented at the 2024 Annual Meeting of the National Council on Measurement in Education in Philadelphia, PA.
- *Li, J., Madison, M. J., & Lu, Z. (2024, April). Comparing CGS and PME on estimating diagnostic classification model attribute mastery profiles. Poster to be presented at the 2024 Annual Meeting of the National Council on Measurement in Education in Philadelphia, PA.
- *Schellman, M., & **Madison, M. J.** (2024, April). *Student growth percentiles in a diagnostic model framework*. Paper to be presented at the 2024 Annual Meeting of the National Council on Measurement in Education in Philadelphia, PA.
- ***Madison, M. J.**, Haab, S., Jeon, M., Cotterell, M. E. (2024, April). *TDCM: An R package for estimating longitudinal DCMs*. Innovative demonstration to be presented at the 2024 Annual Meeting of the National Council on Measurement in Education in Philadelphia, PA.
- *Hirsch, S. E., Herro, D., Kelley, M., **Madison, M. J.**, & Taylor, J. (2024, April). *Elementary teachers' understanding and implementation of UDL practices in data science instruction*. Paper to be presented at 2024 Annual Meeting of American Educational Research Association in Philadelphia, PA (invited speaker session).
- *Hirsch, S. E., Herro, D., Kelley, M., **Madison, M. J.**, & Taylor, J. (2024, February). *Elementary teachers' understanding and implementation of UDL practices in data science instruction*. Paper presented at the South Carolina Educators for Practical Use of Research.

2023

- ***Madison, M. J.**, Wind, S. A., Maas, L., Yamaguchi, K., & Haab, S. (2023, August). *A one-parameter diagnostic classification model with familiar measurement properties*. Paper presented at the 2023 Joint Statistical Meetings in Toronto, Ontario, CA.
- ***Madison, M. J.**, Moore, A., Zor, S., & Fager, M. (2023, April). *The effects of measurement and structural model misspecifications in longitudinal diagnostic classification models*. Paper presented at the 2023 Annual Meeting of the National Council on Measurement in Education in Chicago, IL.
- *Moore, A., & **Madison, M. J.** (2023, April). Examining the effects of retrofitting diagnostic models to item response theory data. Paper presented at the 2023 Annual Meeting of the National Council on Measurement in Education in Chicago, IL.

2022

***Madison, M. J.**, Langi, M., & Suh, Y.-S. (2022, April). *Detecting learning progressions with longitudinal DCMs*. Paper presented at the 2022 Annual Meeting of the National Council on Measurement in Education in San Diego, CA.

2021

*Schellman, M., & **Madison, M. J.** (2021, July). *Estimating the reliability of skill transition in longitudinal DCMs*. Paper presented virtually at the 2021 International Meeting of the Psychometric Society.

***Madison, M. J.**, Bradshaw, L., & Schellman, M. (2021, June). *Navy Education: Preliminary results and comparisons*. Paper presented virtually at the annual meeting of the National Council on Measurement in Education.

***Madison, M. J.**, Bao, Y., Chung, S., Kim, J., & Bradshaw, L. (2021, June). *A Longitudinal Diagnostic Classification Model with Polytomous Attributes*. Paper presented virtually at the annual meeting of the National Council on Measurement in Education.

***Madison, M. J.**, Fager, M., & Moore, A. (2021, June). *Weighing parsimony and flexibility in diagnostic classification model selection*. Paper presented virtually at the annual meeting of the National Council on Measurement in Education.

Bao, Y., **Madison, M. J.**, (2021, June). *An invariance preserving cognitive diagnostic computer adaptive testing algorithm*. Paper presented virtually at the annual meeting of the National Council on Measurement in Education.

2020

Madison, M. J. (2020, April). *A longitudinal and hierarchical diagnostic classification model for evaluating learning progressions*. Paper to be presented at the annual meeting of the National Council on Measurement in Education in San Francisco, CA. Cancelled due to COVID-19 pandemic.

Fager, M., & **Madison, M. J.**, (2020, April). *Weighing parsimony and flexibility in diagnostic classification model selection*. Paper to be presented at the annual meeting of the National Council on Measurement in Education in San Francisco, CA. Cancelled due to COVID-19 pandemic.

2019

Madison, M. J., Fager, M. (2019, October). *Revisiting diagnostic classification model invariance properties*. Paper presented at the annual meeting of the Northeastern Educational Research Association in Trumbull, CT.

Madison, M. J. (2019, April). *Effects of Item Parameter Drift on Longitudinal Diagnostic Classification Models*. Paper presented at the annual meeting of the National Council on Measurement in Education in Toronto, Ontario, CA.

*Kim, J., **Madison, M. J.**, Chung, S., & Bradshaw, L. (2019, April). *Approaches to estimating longitudinal diagnostic classification models*. Paper presented at the annual meeting of the National Council on Measurement in Education in Toronto, Ontario, CA.

*Soo, Y. S., **Madison, M. J.** (2019, April). *Effects of Local Dependence on Longitudinal Diagnostic Classification Models*. Paper presented at the annual meeting of the National Council on Measurement in Education in Toronto, Ontario, CA.

2018

Madison, M. J., & Bao, Y. (2018, July). *A longitudinal and polytomous diagnostic classification model*. Paper presented at the International Meeting of the Psychometric Society in New York, NY.

*Keenan, E. G., **Madison, M. J.**, Wood, J. J., & Lerner, M. D. (2018, May). *Psychometric analysis of the autism spectrum quotient using diagnostic classification modeling*. Poster presented at the Annual Meeting of the International Society for Autism Research, Rotterdam, Netherlands.

Madison, M. J. (2018, April). *Item influence measures for diagnostic classification models*. Paper presented at the annual meeting of the National Council on Measurement in Education in New York, NY.

*Cho, A. C. B., Wood, J., & **Madison, M. J.** (2018, January). *Personality matters: A latent profile analysis of personality subgroups in children with autism spectrum disorder*. Poster presented at the Annual Conference for the University of California Center for Research on Special Education, Disabilities, and Developmental Risk in Davis, CA.

2017

Madison, M. J., (2017, October). *A diagnostic approach to reliably assessing growth*. Paper presented at the annual meeting of the Northeastern Education Research Association in Trumbull, CT.

*Cruz, E., & **Madison, M. J.** (2017, October). *Diagnosing teachers' statistical preparation: A Pilot Study*. Paper presented at the Annual Meeting of the Society for Advancement of Chicanos/Hispanics and Native Americans in Science in Salt Lake City, UT.

Madison, M. J., & Bradshaw, L. (2017, April). *Evaluating intervention effects in a diagnostic classification model framework*. Paper presented at the annual meeting of the National Council on Measurement in Education in San Antonio, TX.

2016

*Grantham, T., **Madison, M. J.**, Collins, K., & Luckey, J. (2016, November). *Single-subject acceleration for gifted Black males using the Math Hall and Ball afterschool program*. Paper presented at the annual meeting of the National Association for Gifted Children in Orlando, FL.

Madison, M. J., & Bradshaw, L. (2016, October). *Evaluating innovative instruction using a longitudinal diagnostic classification model*. Paper presented at the annual meeting of the Northeastern Education Research Association in Trumbull, CT.

Madison, M. J., & Bradshaw, L. (2016, July). *Assessing growth in a general diagnostic classification model*. Paper presented at the International Meeting of the Psychometric Society in Asheville, NC.

Xiong, X., **Madison, M. J., & Mattar, J.** (2016, April). *Speededness for task-based simulations items in a multi-stage licensure examination*. Paper presented at the annual meeting of the National Council on Measurement in Education in Washington, D.C.

Madison, M. J., & Bradshaw, L. (2016, April). *Assessing growth in a diagnostic classification model framework*. Poster presented at the 2016 College of Education Graduate Student and Faculty Research Conference in Athens, GA.

2015

Madison, M. J., & Bradshaw, L. (2015, October). *Invariance properties for general diagnostic classification models*. Paper presented at the annual meeting of the Northeastern Education Research Association in Trumbull, CT.

Madison, M. J., & Bradshaw, L. (2015, April). *Using Q^* Power to refine diagnostic assessment designs*. Paper presented at the annual meeting of the American Educational Research Association in Chicago, IL.

Madison, M. J. & Bradshaw, L. (2015, February). *Developing Diagnostic Formative Assessments in Graduate Statistics Courses*. Poster presented at the 2015 College of Education Graduate Student and Faculty Research Conference in Athens, GA.

2014

Madison, M. J. & Bradshaw, L. (2014, April). *The effects of Q -matrix design on classification accuracy in the LCDM*. Poster presented at the 2014 College of Education Graduate Student and Faculty Research Conference in Athens, GA.

Madison, M. J., Bradshaw, L., & Hollingsworth, B. (2014, April). *The role of Q -matrix design in diagnostic assessment*. Paper presented at the annual meeting of the National Council on Measurement in Education in Philadelphia, PA.

2013

Madison, M. J. & Bradshaw, L. (2013, October). *The effects of Q -matrix design on classification accuracy in the LCDM*. Paper presented at the annual meeting of the Northeastern Education Research Association in Rocky Hill, CT.

Madison, M. J., & Templin, J. (2013, April). *Group-mean centering in hierarchical linear models: A weighting approach*. Poster presented at the 2013 College of Education Graduate Student Research Conference in Athens, GA. Awarded 2nd place research prize.

2012

- Bradshaw, L., Brown, C., Cohen, A., **Madison, M. J.**, & Templin, J. (2012, December). *Evaluating the statistical properties of epistemic network analysis*. Poster presented at the 4th annual Discovery Research K-12 Meeting in Madison, WI.
- Piatek-Jimenez, K., & **Madison, M. J.** (2012, November). *Equity in mathematics textbooks: A report on progress*. Poster presented at the annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education in Kalamazoo, MI.
- Marcinek, T., & **Madison, M. J.** (2012, July). *Learning to interpret the mathematical thinking of others in pre-service mathematics courses: potential and limitations*. Paper presented at the 12th International Congress on Mathematical Education in Seoul, Korea.
- Hamed, D., & **Madison, M. J.** (2012, April). *Factors affecting student achievement in business calculus*. Poster presented at the annual Student Research and Creative Endeavors Exhibition in Mount Pleasant, MI.

Invited Panels/Presentations/Workshops

- Madison, M. J.** (2022, October). *Switching jobs in academia and industry*. Invited panelist at the annual meeting of the Northeastern Educational Research Association in Trumbull, CT.
- Madison, M. J.** (2022, October). *Introduction to diagnostic measurement models*. Invited workshop presented at the annual meeting of the Northeastern Educational Research Association in Trumbull, CT.
- Madison, M. J.** (2022, October). *A one-parameter diagnostic classification model with familiar properties*. Invited presentation the Morgan State University Psychometric Colloquium Series.
- Madison, M. J.** (2020, June). *Graduate training in educational measurement and psychometrics: A curricula review of graduate programs in the U.S.* Invited panelist at the annual meeting of the National Council on Measurement in Education in San Francisco, CA. Virtual format due to COVID-19 pandemic.
- Madison, M. J.** (2020, April). *Advice on transitioning from graduate training to the professional world (GSIC Featured Session)*. Invited panelist at the annual meeting of the National Council on Measurement in Education in San Francisco, CA. Cancelled due to COVID-19 pandemic.
- Madison, M. J.** (2019, December). *Some exciting applications of diagnostic classification models*. Invited presentation the University of Georgia Department of Educational Psychology.

- Madison, M. J.** (2019, December). *Longitudinal diagnostic classification models*. Guest lecture for ERSH 8140, University of Georgia Quantitative Methodology Program.
- Madison, M. J.** (2019, March). *Meaningful metrics in mathematics education research*. Invited presentation the UCLA Curtis Center Mathematics and Teaching Conference.
- Madison, M. J.** (2018, October). *Introduction to diagnostic measurement models*. Invited workshop to University of Massachusetts Amherst Research, Educational Measurement, and Psychometrics Program.
- Madison, M. J.** (2018, April). *A diagnostic classification analysis of an MDTP Test*. Invited presentation to the Working Group of the Mathematics Diagnostic Testing Project. Long Beach, CA.
- Madison, M. J.** (2018, March). *Meaningful metrics in educational research*. Invited presentation to the Quantitative Methodology Colloquium, University of Georgia Department of Educational Psychology.
- Madison, M. J.** (2018, February). *Getting more out of educational assessments*. Invited presentation to the Precision Institute at National University in San Diego, CA.
- Madison, M. J.** (2018, January). *Non-arbitrary metrics in educational research*. Invited presentation to the Teaching and Learning Lab (TALL), UCLA Department of Psychology.
- Madison, M. J.** (2017, October). *Getting ready to publish*. Invited panelist at the annual meeting of the Northeastern Educational Research Association in Trumbull, CT.
- Madison, M. J.** (2017, October). *Evaluating learning (and forgetting) over time via a diagnostic classification model*. Invited presentation to the Cognitive Psychology CogFog Meeting, UCLA Department of Psychology.
- Madison, M. J.** (2017, October). *Psychometric models for the reliable measurement of multiple latent traits*. Invited presentation to the UCLA Department of Statistics Research Seminar.
- Madison, M. J.** (2017, April). *Evaluating an instructional intervention with a longitudinal diagnostic model*. Invited presentation to the Human Development and Psychology Colloquium, UCLA Department of Education.
- Madison, M. J.** (2016, May). *Navigating the academic job market*. Invited presentation to Graduate Researchers in Educational Psychology at the University of Georgia.
- Madison, M. J.** (2016, January). *Getting more out of educational assessments*. Invited presentation at the 2016 University of Georgia College of Education Doctoral Recruitment Weekend in Athens, GA.

Technical Reports

Madison, M. J. (2018). *A Diagnostic Classification Analysis of an MDTP Test*. Technical Report. Mathematics Diagnostic Testing Project.

Madison, M. J. (2015). *Examining the Speediness of the Uniform CPA Examination*. Technical Report. American Institute of Certified Public Accountants.

Developed Software

Madison, M. J., Haab., S., Jeon, M., & Cotterell, M. E. (2023). TDCM: An R package for estimating longitudinal diagnostic classification models. [Computer software]. Available at <https://cran.r-project.org/web/packages/TDCM/index.html>.

Madison, M. J., Bradshaw, L. P. (2015). Q*Power (1.0): A tool for prospective diagnostic assessment design. [Computer software]. Athens, GA.

Teaching Experience

Graduate Courses

Instructor: ERSH 8140 – Introduction to Diagnostic Measurement Models University of Georgia	2022
Instructor: ERSH 7800 – Survey of Latent Variable Models University of Georgia	2021
Instructor: ERSH 6300 – Applied Statistical Methods in Education University of Georgia	2021
Instructor: ERSH 8360 – Categorical Data Analysis in Education University of Georgia	2020; 2023
Instructor: EDF 9310 – Survey of Latent Variable Models Clemson University	2020
Instructor: EDF 9870 – Multivariate and Categorical Educational Research Clemson University	2019
Instructor: EDF 9770 – Multiple Regression / General Linear Models in Education Clemson University	2019
Instructor: EDF 9270 – Quantitative Research Design and Statistics in Education Clemson University	2018
Instructor: EDUC 255 – Diagnostic Classification Models University of California – Los Angeles	2017

Instructor: EDUC 231C – Categorical Data Analysis 2017
University of California – Los Angeles

Co-instructor: EDUC 288 – Research Apprenticeship Course 2017
University of California – Los Angeles

Instructor: EDUC 230B – Linear Models in Social Sciences: Multiple Regression 2017; 2018
University of California – Los Angeles

Instructor: EDUC 230A – Introduction to Research Design and Statistics 2016; 2017
University of California – Los Angeles

Teaching Assistant: ERSH 8310 – Applied Analysis of Variance in Education 2013 – 2015
University of Georgia

Undergraduate Courses

Instructor: MTH 217 – Business Calculus 2012
Central Michigan University

GRE Mathematics Preparatory Instructor 2011 – 2012
Central Michigan University Ronald E. McNair Scholars

Instructor: MTH 105 – Intermediate Algebra 2009 – 2011
Central Michigan University

Instructor: MTH 055 – Beginning Algebra 2010
Central Michigan University

Supplemental Instruction Leader: MTH 141 – Calculus I 2006 – 2009
University of South Carolina

Professional Development Training Sessions/Workshops

Madison, M. J. (April, 2024). *Longitudinal Diagnostic Classification Models: Theory and Applications*. Half-day virtual training session presented at the annual meeting of the National Council on Measurement in Education.

Madison, M. J. (April, 2023). *Diagnostic Classification Models: Advanced Applications*. Half-day virtual training session presented at the annual meeting of the National Council on Measurement in Education.

Madison, M. J. (2022, October). *Introduction to diagnostic measurement models*. Invited workshop presented at the annual meeting of the Northeastern Educational Research Association in Trumbull, CT.

Madison, M. J. (2018, October). *Introduction to diagnostic measurement models*. Invited workshop to University of Massachusetts Amherst Research, Educational Measurement, and Psychometrics Program.

Madison, M. J. (April, 2019). *Diagnostic Classification Models: Advanced Applications*. Half-day training session presented at the annual meeting of the National Council on Measurement in Education in Toronto, Ontario, CA.

Bradshaw, L., & **Madison, M. J.** (April, 2018). *Diagnostic Classification Models Part I: Fundamentals*. Half-day training session presented at the annual meeting of the National Council on Measurement in Education in New York, NY.

Madison, M. J., & Bradshaw, L. (April, 2018). *Diagnostic Classification Models Part II: Advanced Applications*. Half-day training session presented at the annual meeting of the National Council on Measurement in Education in New York, NY.

Bradshaw, L., & **Madison, M. J.** (April, 2017). *Diagnostic Measurement: Theory, Methods and Applications*. Full day training session presented at the annual meeting of the National Council on Measurement in Education in San Antonio, TX.

Mentorship

Ph.D. Dissertation Committee Member

In Progress

Joy Mitchell, School Psychology, University of Georgia

Ph.D. Dissertation Committee Member

In Progress

Yuchen Song, Applied Cognition and Development, University of Georgia

Ph.D. Dissertation Committee Member

In Progress

Madeline Schellman, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

In Progress

Ye Yuan, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

In Progress

Meina Bian, Quantitative Methodology, University of Georgia

M.A. Thesis Committee Chair

In Progress

Allen Moore, Quantitative Methodology, University of Georgia

M.A. Thesis Committee Chair

In Progress

Anastasia Kreisel, Quantitative Methodology, University of Georgia

M.A. Thesis Committee Chair

Completed (2024)

Armani Morris, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

Completed (2023)

Yvette Jackson Lee, Psychometrics, Morgan State University

Ph.D. Dissertation Committee Chair

Completed (2023)

Selay Zor, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

Completed (2023)

Cigdem Toptas, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

Completed (2023)

Annessia Bullard, Gifted and Creative Education, University of Georgia

M.A. Thesis Committee Chair

Completed (2023)

Sergio Haab, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

Completed (2023)

Zach Feldberg, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Committee Member

Completed (2023)

Robert O'Hara, Learning Sciences, Clemson University

Ph.D. Dissertation Committee Member

Completed (2023)

Georgia McKown, Learning Sciences, Clemson University

M.A. Thesis Committee Member

Completed (2022)

Yuchen Song, Applied Cognition and Development, University of Georgia

M.Ed. Committee Chair

Completed (2022)

Annessia Bullard, Quantitative Methodology, University of Georgia

Postdoctoral Research Fellow Supervisor

Completed (2021)

Eric Setoguchi, UCLA + National University Precision Institute

Ph.D. Dissertation Committee Member

Completed (2021)

Jiajun Xu, Quantitative Methodology, University of Georgia

Ph.D. Dissertation Chair

Completed (2021)

Karen Franklin, Learning Sciences, Clemson University

Pre-/Postdoctoral Research Fellow Supervisor

Completed (2020)

Meghan Fager, UCLA + National University Precision Institute

Ph.D. Dissertation Co-Chair

Completed (2019)

Eric Setoguchi, Social Research Methodology, UCLA

Ph.D. Dissertation Committee Member

Completed (2019)

Anne Blackstock-Bernstein, Human Development and Psychology, UCLA

Ed.D. Dissertation Committee Member

Completed (2019)

Christina E. Apostolakis, Educational Leadership, UCLA

Second Year Project Committee Member

Completed (2018)

An Cho, Human Development and Psychology, UCLA

Service Activities/Leadership Positions

Editorial Leadership and Service

Associate Editor

Journal of Educational Measurement

2022 – Present

Editorial Board Member

Journal of Educational and Behavioral Statistics

2021 – Present

Educational Assessment

2020 – Present

Journal of Educational Measurement

2019 – 2022

Peer Reviewer for Journals

Applied Psychological Measurement
Behavior Research Methods
Behaviormetrika
British Journal of Mathematical and Statistical Psychology
Cognition and Instruction
Educational and Psychological Measurement
Educational Measurement: Issues and Practice
Frontiers in Psychology
International Journal of Methods in Psychiatric Research
International Journal of Testing
Journal of Psychoeducational Assessment
Psychometrika

Peer Reviewer for Conferences and Organizations

American Educational Research Association
Institute of Education Sciences
National Council on Measurement in Education
National Science Foundation
Northeastern Educational Research Association
Sage Publications

Organizational Leadership and Service

Faculty Search Committee Co-chair University of Georgia Department of Educational Psychology	2023
Faculty Search Committee University of Georgia Department of Physics and Astronomy	2023
Faculty Search Committee University of Georgia Department of Educational Psychology	2022
Task Force on Foundational Competencies National Council on Measurement in Education	2021 – Present
Quantitative Access and Diversity Working Group	2020 – Present
Chair, Diagnostic Measurement Special Interest Group National Council on Measurement in Education	2020 – Present
Brenda Loyd Outstanding Dissertation Award Committee National Council on Measurement in Education	2019 – Present

Merit Review Committee Clemson College of Education Department of Education and Human Development	2019
Faculty Search Committee Clemson College of Education Department of Education and Human Development	2018
Program Chair American Educational Research Association Special Interest Group 167: Cognition and Assessment	2018 – 2019
Outstanding Dissertation Committee American Educational Research Association, Division D	2018 – 2022
Membership Chair Northeastern Educational Research Association	2017 – 2018
Core Faculty Member UCLA Department of Education Educational Leadership Program	2017 – 2018
Academic Personnel Committee UCLA Department of Education	2017 – 2018
Faculty Search Committee UCLA Department of Psychology	2017 – 2018
California State University Sally Casanova Pre-Doctoral Scholars Program Undergraduate Research Faculty Mentor	2017
Membership Committee Northeastern Educational Research Association	2016 – 2017
DCMNET: Diagnostic Classification Model Network Listserv Owner and Operator	2016 – Present
Standards and Test Use Committee National Council for Measurement in Education	2015 – 2016
Project U-SPARC: Math Hall and Ball Co-director University of Georgia / Howard B. Stroud Elementary	2015
The 2014 Frasier Equity & Excellence STEM Conference Planning Committee University of Georgia, College of Education	2014 – 2015

Graduate Student Liaison American Educational Research Association Special Interest Group 167: Cognition and Assessment	2013 – 2016
Mathematics Curriculum Team University of Georgia	2013 – 2015
Training and Professional Development Committee National Council for Measurement in Education <i>Graduate Student Representative</i>	2013 – 2014
Graduate Researchers in Educational Psychology University of Georgia <i>Executive Committee: Treasurer</i> <i>Program Representative: Quantitative Methodology</i>	2013 – 2014 2012 – 2013

Other Professional Activities

Psychometric Consultant Navy Education	2018 – 2022
Graduate Research Assistant <i>Developing Enhanced Assessment Tools for Capturing Students' Procedural Skills and Conceptual Understandings in Mathematics.</i> United States Department of Education, Institute of Educational Sciences award number R324A150035.	2015 – 2016
Psychometric Intern American Institute of Certified Public Accountants	Summer 2015
Graduate Assistant <i>Georgia Center for Assessment</i>	2014 – 2015
Graduate Research Assistant <i>AutoMentor: Virtual Mentoring and Assessment in Computer Games for STEM Learning.</i> National Science Foundation: Division of Research on Learning award number 0918409.	2012 – 2014

Software Skills

Fortran, Mplus, Python, R, SAS, SPSS, Visual Studio, Visual Basic, Linux

Professional Affiliations

American Statistical Association	2015 – Present
Psychometric Society	2015 – Present
Northeastern Educational Research Association	2013 – Present

American Educational Research Association
National Council on Measurement in Education

2012 – Present
2012 – Present