

TIFFANY WU

DOCTORAL CANDIDATE, UNIVERSITY OF MICHIGAN

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EDUCATION

University of Michigan 2021–2026 (expected)

Ph.D. in Education and Psychology

Thesis: “Showing up is half the battle: How machine learning, psychometrics, and causal inference methods offer distinct yet complementary insights into reducing student absenteeism”

Dissertation Committee: Christina Weiland (chair), Allison Ryan, Ben Hansen, Kevin Stange

University of Michigan 2022–2026 (expected)

Master of Arts in Statistics (Dual Degree Program)

University of Chicago 2018–2019

Master of Arts in the Social Sciences

Concentration in Psychology

Thesis: “Multiplication is vexation and practice drives me mad: The relationship between math anxiety, retrieval practice, and test performance”

Advisor: Susan Levine

Northwestern University 2011–2015

Bachelor of Science in Secondary Education and History

Summa cum Laude

Illinois Middle School and High School Teaching License:

Professional Educator License (PEL) 2315234

PROFESSIONAL EXPERIENCE

2021– **University of Michigan, Early Learning Lab, Ann Arbor, MI**

Graduate Research Assistant, Dr. Christina Weiland

- Use causal inference, psychometric, and machine learning methods to inform the development of early childhood interventions and policies

2019–2021 **LEAP Innovations, Personalized Learning Education Technology Non-profit, Chicago, IL**

Research Analyst

- Conducted program efficacy research and analyzed academic achievement of students using LEAP’s edtech programming in Chicago Public Schools

2018–2019 **University of Chicago, Cognitive Development Lab, Chicago, IL**

Graduate Research Assistant, Dr. Susan Levine

- Designed a survey study, using a causal mediation analysis to examine the relationship between math anxiety, retrieval practice, and test performance

2015–2017 **Chicago Public Schools, Lindblom Math & Science Academy, Englewood, Chicago, IL**

High School Social Sciences Teacher

- Taught Psychology, Sociology, and Human Geography in a Title 1 school on the South Side of Chicago

- 2011-2015 **Northwestern University, Institute for Policy Research, Evanston, IL**
Research Assistant, Dr. Lindsay Chase-Lansdale
- Collaborated on the Two-Generation Education Intervention project, which combines education and workforce programs for young, low-income parents with high-quality, early childhood education programs for children

FELLOWSHIPS AND AWARDS

- 2024 Sarri Family Fellowship for Research on Educational Attainment of Children in Low Income Families, Institute for Social Research, University of Michigan (\$6000)
- 2024 Dr. Stuart A. Karabenick Fellowship, University of Michigan (\$1000)
- 2023 Rackham Conference Travel Grant, University of Michigan (\$900)
- 2022-2026 IES Causal Inference in Education Policy Research (CIEPR) Predoctoral Fellowship (4 years of full support for doctoral studies)
- 2022 Association for Public Policy Analysis and Management (APPAM) Equity and Inclusion Student Fellowship (\$600)
- 2022 Institute for Social Research-Rackham Summer Training Award, University of Michigan (\$3800)
- 2021 Rackham Regents Fellowship, University of Michigan (1 year of full support for doctoral studies)
- 2019 Dean's Scholarship, University of Chicago (\$5,250)
- 2019 Master of Arts in the Social Sciences Scholarship, University of Chicago (\$28,998)
- 2015 Highest Undergraduate GPA Award, School of Education and Social Policy, Northwestern University
- 2013-2015 Ralph Robinson Scholarship (\$5000), Northwestern University
- 2012 New Cosmic Frontiers Astronomy & Physics International Essay Competition Third Place, University of Chicago (\$10,000)

GRANTS

Awarded

- 2022, 2023 *Collaborative Partnership with Local Michigan Schools to Promote Interest in STEM*
 DEI Faculty Grant, Industrial and Operations Engineering, University of Michigan
 PIs: Salar Fattahi (PI), **Tiffany Wu** (co-PI)
 Total award amount: \$10,000

Under Review

- 2025 *Transforming Early Childhood Education Program Support Systems Using Modern Machine Learning Methods*
 Vision Grants Proposal, Spencer Foundation
 PIs: Pia Caronongan (PI), Paola Guerrero-Rosada (co-PI), Christina Weiland (consultant), **Tiffany Wu** (consultant; if awarded, will support development of a large-scale grant where I will serve as co-PI)
 Proposed budget: \$75,000

PUBLICATIONS

Peer-Reviewed Journal Articles (published or in press)

Wu, T., Weiland, C., McCormick, M., C., Hsueh, J., Snow, C., & Sachs, J. (2024). One score to rule them all: Comparing the predictive and concurrent validity of 30 ways to score the Hearts and Flowers task. *Assessment*, 1-19. [\[link here\]](#)

McCormick, M., Hanno, E., Weiland, C., **Wu, T.**, Pralica, M., Hsueh, J., Giles, A., Snow, C., & Sachs, J. (in press). Moving beyond point in time estimates: Using growth models to understand when PreK convergence happens, how, and for which skills. *Child Development*.

Working Papers

Wu, T. & Weiland, C. (2024). *Leveraging Modern Machine Learning to Improve Early Warning Systems and Reduce Chronic Absenteeism in Early Childhood*. Revise and resubmit, *Educational Evaluation and Policy Analysis* (also an EdWorkingPaper No. 24-1081. Annenberg Institute for School Reform at Brown University). [\[link here\]](#)

Policy Briefs

Weiland, C., McCormick, M., **Wu, T.**, MacDowell, C., Guerrero-Rosada, P., Taylor, A., Snow, C., & Sachs, J. (2023). *Professional Development in the Time of COVID-19: Evidence and Insights from Early Educators in the Boston Public Schools*. Boston Early Childhood Research Practice Partnership. [\[link here\]](#)

Wu, T., McCormick, M., Weiland, C., Hsueh, J., Sachs, J., & Snow, C. (2023). *What Sustains the Pre-K Boost? New Evidence from Boston Public Schools*. Boston Early Childhood Research Practice Partnership. [\[link here\]](#)

Wu, T., Weiland, C., McCormick, M., Sachs, J., Taylor, A., Hsueh, J., & Snow, C. (2023). *What if You Miss the First Year of an Aligned Curriculum? Boston Public Schools' Pre-K Non-Attendees Made Equivalent Learning Gains Whether or Not their Kindergarten Program was Aligned with Pre-K*. Boston Early Childhood Research Practice Partnership. [\[link here\]](#)

Works in Progress

Weiland, C., **Wu, T.**, Unterman, R., Shapiro, A., Lightner, S., Staines, T., & Taylor, A. *Impacts of Oversubscribed Boston Pre-K Programs through Middle School*. Under review at the Massachusetts Department of Elementary and Secondary Education (will be submitted for publication once approved).

Wu, T., Weiland, C., Diemer, M., Unterman, R., Shapiro, A., & Staines, T. *Measuring "Noncognitive" Skills at Scale: Building Longitudinal Student Behavior Composites Using Administrative Data*. Under review at the Massachusetts Department of Elementary and Secondary Education and Boston Public Schools (will be submitted for publication once approved).

Wu, T., Lightner, S., Staines, T., Weiland, C., Unterman, R., & Shapiro, A. *The Garden of Forking Absenteeism Paths: Unpacking the Many Measures of Student Attendance and Thresholds of Chronic Absenteeism.*

Wu, T. & Weiland, C. *Fair Warning? Improving Early Warning Systems for Ninth Grade Chronic Absenteeism through Longitudinal Trajectories, Assessment of Computational Cost, and Fairness Evaluation.*

Wu, T., Unterman, R., & Weiland, C. *Quantifying and Predicting Variation in the Long-Term Effects of Oversubscribed Prekindergarten Programs.*

Yerington, E., Weiland, C., **Wu, T.,** McCormick, M., Hsueh, J., Sachs, J., Snow, C., Guerrero-Rosada, P., & Xia, Y. *Teacher-Student Racial-Ethnic Match and Kindergarteners' Academic and Cognitive Gains: Evidence from Boston.* Under review at the Massachusetts Department of Elementary and Secondary Education and Boston Public Schools (will be submitted for publication once approved).

PRESENTATIONS, INVITED LECTURES, AND CONFERENCE ACTIVITY

Presentations

Weiland, C., **Wu, T.,** Unterman, R., Shapiro, A., Lightner, S., Staines, T., & Taylor, A. (2025, May). *Impacts of Oversubscribed Boston Pre-K Programs through Middle School.* Causal Inference in Education Research Seminar, Ann Arbor, MI.

Wu, T. & Weiland, C. (2025, May). *Leveraging Modern Machine Learning to Improve Early Warning Systems and Reduce Chronic Absenteeism in Early Childhood.* Supporting Students in their Earliest Years: Innovations at the State and Local Levels. Harvard University Strategic Data Project Convening, Boston, MA.

Yerington, E., Weiland, C., **Wu, T.,** McCormick, M., Hsueh, J., Sachs, J., Snow, C., Guerrero-Rosada, P., & Xia, Y. (2025, May). *Teacher-Student Racial-Ethnic Match and Kindergarteners' Academic and Cognitive Gains: Evidence from Boston.* Society for Research in Child Development (SRCD), Minneapolis, MN.

Wu, T. (2025, February). *Leveraging Modern Machine Learning to Improve Early Warning Systems and Reduce Chronic Absenteeism in Early Childhood.* Combined Program in Education and Psychology Brown Bag, Ann Arbor, MI.

Wu, T. & Weiland, C. (2024, September). *Leveraging Modern Machine Learning to Reduce Chronic Absenteeism in Early Childhood.* Society for Research on Educational Effectiveness (SREE), Baltimore, MD.

Wu, T., Weiland, C., Unterman, R., Shapiro, A. (2023, November). *Prekindergarten Absenteeism in Boston Public Schools: Predictors, Patterns, and Relationships to Learning Outcomes.* Association for Public Policy Analysis & Management (APPAM), Atlanta, GA.

Wu, T. & Weiland, C. (2023, August). *SMOTE, XGBoost, Action! Leveraging Machine Learning for Improving Chronic Absenteeism Prediction in Early Childhood*. Causal Inference in Education Research Seminar, Ann Arbor, MI.

Wu, T. (2019, June). *Multiplication is Vexation and Practice Drives Me Mad: Retrieval Practice Accuracy Mediates the Effect of Math Anxiety on Test Performance*. The University of Chicago MAPSS Conference, Chicago, IL.

Invited Lectures

Wu, T. (2025, February). *Leveraging Machine Learning to Improve Chronic Absenteeism Prediction in Early Childhood*. Guest Lecture in IOE 473: Advanced Data Analytics. University of Michigan, Ann Arbor, MI.

Wu, T. (2024, October). *Regression Discontinuity and the Effectiveness of Early Warning Systems*. Guest Lecture in PUBPOL 712: Causal Inference in Education Policy Research. University of Michigan, Ann Arbor, MI.

Posters

Wu, T., Weiland, C., McCormick, M., Hsueh, J., Snow, C., & Sachs, J. (2023, May). *One Score to Rule Them All? Comparing the Predictive and Concurrent Validity of 30 Ways to Score the Hearts and Flowers Task*. HighScope International Conference, Ypsilanti, MI.

Wu, T., Weiland, C., McCormick, M., Hsueh, J., Snow, C., & Sachs, J. (2023, May). *One Score to Rule Them All? Comparing the Predictive and Concurrent Validity of 30 Ways to Score the Hearts and Flowers Task*. American Educational Research Association (AERA), Chicago, IL.

Wu, T., Weiland, C., McCormick, M., Hsueh, J., Snow, C., & Sachs, J. (2023, March). *One Score to Rule Them All? Comparing the Predictive and Concurrent Validity of 30 Ways to Score the Hearts and Flowers Task*. The Susan B. Meister Lecture in Child Health Policy, the University of Michigan Child Health Evaluation and Research Center, Ann Arbor, MI.

Jenifer, J. & **Wu, T.** (2019, May). *Math Anxiety & Retrieval Practice: A Potential Strategy for Reducing Performance Gaps*. Association for Psychological Science (APS) 31st Annual Convention. Washington, D.C.

Sommer, T.E., Chase-Lansdale, L., Sabol, T.J., Yoshikawa, H., Brooks-Gunn, J., **Wu, T.** (2014, June). *Barrier or Opportunity to Promote Parental Employment?: Early Childhood Education Programs for Low-Income Children*. Work and Family Researchers Network Conference. New York City, NY.

TEACHING EXPERIENCE

Graduate Student Instructor

- Fall 2024 **University of Michigan, Ann Arbor, MI**
Psychometric Theory: Classical and Latent Trait Models (EDUC 707/PSYCH 803)
Teaching Assistant with Dr. Matthew Diemer
- Summer 2024 **University of Michigan, Ann Arbor, MI**
Latent Variable Modeling to Advance Diversity, Equity, and Inclusion
International Consortium for Political and Social Research (ICPSR) Summer Program
Teaching Assistant with Dr. Matthew Diemer

K-12 Teaching Experience

- 2015-2017 **Chicago Public Schools, Lindblom Math & Science Academy (Title 1 School), Englewood, Chicago, IL**
High School Social Sciences Teacher
- 2012-2015 **Northwestern University Center for Talent Development, Evanston, IL**
Teaching Assistant & Residential Teaching Assistant

PAID CONSULTANCIES

- 2023 **Johnson County Cabinet for Children and Youth, Vienna, IL**
Education Research Consultant

REFeree SERVICE

American Educational Research Association Open Access Journal (AERA Open), *ad hoc* reviewer, 2024

ACADEMIC SERVICE

Service to the University of Michigan

- 2024-2025** Coordinator, Causal Inference in Education Research Seminar (CIERS), Education Policy Initiative
- 2024-2025** Admissions Committee Member, Combined Program in Education and Psychology
- 2023-2024** Curriculum Committee Member, Combined Program in Education and Psychology
- 2022-2023** Social Committee Member, Combined Program in Education and Psychology
- 2022-2023** Executive Committee Member, Combined Program in Education and Psychology
- 2021-2022** Recruitment Committee Member, Combined Program in Education and Psychology

AFFILIATIONS

2024- Society for Research on Educational Effectiveness (SREE)
2022- Association for Public Policy Analysis & Management (APPAM)
2021- American Educational Research Association (AERA)

PROGRAMMING LANGUAGES

Most experienced with R, Python, Stata, and SQL.
Some experience with SPSS, MPlus, HTML, CSS, and Javascript.