

# Mengchen Su, Ph.D.

## Postdoctoral Associate

### Contact

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### Education

**Postdoctoral Associate**

University of Minnesota

**Ph.D., Educational Psychology &  
Quantitative Methods**

SUNY University at Buffalo

**M.A., Educational Psychology &  
Quantitative Methods**

SUNY University at Buffalo

**B.A., English Literature**

Beijing University of Technology

### Expertise

#### Research Methodology

- Quantitative design
- Comparative research
- Quasi-experimental design
  - Empirical design
  - Qualitative design
  - Mixed methods
- Psychometric analysis

Dr. Su is a Postdoctoral Associate in Learning Informatics Lab of the College of Education and Human Development at the University of Minnesota and a visiting researcher at Infinite Campus. Dr. Su is an interdisciplinary researcher and methodologist. Her main research interest is student balanced development in K-12 education. Her research aims to improve evidence-based policy toward holistic education, focusing on diversity and equity. She specializes in advanced and critical quantitative methods and secondary analysis of large-scale national/international education administrative/survey data.

### Experience

#### *October 2021 – Present*

#### **Postdoctoral Associate**

- Learning Informatics Lab • St. Paul, Minnesota

#### **Visiting Scholar**

- Infinite Campus • Blain, Minnesota

#### **Re-envisioning a K-12 Early Warning System with School Climate Factors**

##### *Project Director/Lead Methodologist, 2021-Present*

The Every Student Succeeds Act (ESSA) prescribes holistic school measures for student success and well-being. However, many K-12 early warning systems rely exclusively on the "Attendance, Behavior, Course" (ABC) taxonomy, which misses crucial determinants such as school climate and students' socioemotional learning. Schmidt Futures funds this larger project, which aims to apply machine learning methods to improve Infinite Campus's early warning system by incorporating school climate and socioemotional learning factors. Dr. Su worked with research team on research design, implementation, and build the key R&D partnership between the Nevada Department of Education (NDE), AIR, Infinite Campus, and Learning Informatics Lab.

**Skills**

- **Data analysis:**  
Multilevel model (HLM)  
Survival analysis  
Structural equation model (SEM)  
Primary/Secondary data analysis
- **Software:**  
SPSS, R, HLM, LISREL  
NVivo, ATLAS. Ti  
AM Statistical Software  
IDB Analyzer, Winsteps  
Microsoft Package
- **Others:**  
Project management  
Communication/Teamwork  
Language: English/Chinese  
(Mandarin)

**Content/Research Interest**

- Social and Emotional Learning
- Equity and Diversity policy
  - School Climate
  - Student Engagement
- Educational Technology
  - K-12 Education
  - Higher Education

**Certificates**

- Advanced Certificate of Applied Statistical Analysis
- CASEL Webinar Certificate: Demystifying Systemic Social/Emotional Learning

Dr. Su envisioned and sought out all appropriate teammates to build a research agenda in a large, interdisciplinary research team. She worked with colleagues to test and validate the machine-learned model on the combined administrative data from the student information platform and the Nevada School Climate/Social Emotional Learning Survey (NV-SCSEL). The project attempts to assist districts support students, as these measures can shed light on causes of risk.

**School-Wide Approaches to Social Emotional Learning on Low-income Immigrant Students: A Comparison of the U.S. and Finland**

*Principal Investigator, 2022-2023*

Spencer Foundation Small Research Grants

Funded Amount: \$49,989 Status: Pending

The achievement gap between immigrant and non-immigrant students in many countries is the main barrier to educational equity. Efforts are made, both in the U.S. and elsewhere, to surface such systemic inequities in areas of student development, including not only academic performance but also social and emotional learning (SEL). As education systems implement school-wide approaches to SEL, little is known whether these efforts benefit all students in different countries, especially for historically marginalized communities. As PI, Dr. Su collaborates with Co-PI (Dr. Bodong Chen) and leads the critical initiative to evaluate the potential of school-wide approaches to SEL in supporting immigrant and non-immigrant students in the U.S. and Finland. The proposed project will contribute to our knowledge base of equity and diversity policies by adding robust empirical evidence.

**Teacher and School Characteristics on Information and Communication Technology (ICT) Use for Teaching**

*Lead Methodologist/Consultant, 2021-2022*

Dr. Su built the research partnership with Dr. Siqi Li at Beijing Normal University on the research project exploring the relationship between multilevel school/teacher characteristics and teachers' frequency of ICT use for teaching practices. She designed hierarchical linear modeling on large scale, secondary data of International Computer and Information Literacy Study (ICILS). Dr. Su is the consultant for the project.

**Precise Distribution of Educational Resources under the Regional Economic, Social, and Cultural Status: Large-Data Analysis based on GIS in China**

*Lead Methodologist/Consultant, 2022-2024*

## Membership in Professional Organizations

2018- Present  
American Educational Research Association (AERA)

2021-Present  
American Psychological Association (APA)

2022  
American Education Finance and Policy (AEFP)

2022  
Comparative & International Education Society (CIES)  
Technology

*Funded Amount: \$37,735*

With the rising focus on educational equity in China, little is known about the relationship between education equity and equality. This project intends to explore regional patterns of ESCS based on the geographic information system (GIS) with big, open-source, and national data in China. As the Lead Analyst, Dr. Su guides the methodological design, including power estimates, tests of validity/reliability of scales, and various statistical models (SVM, HLM).

### *May 2021 – August 2021*

#### **Research Assistant**

• SEARS Experimental Learning • Buffalo, NY

#### **Expectancy-value theory (EVT) and Undergraduate Engineering Students' Co-Curricular Engagement Pattern: Do They Have the Time and Motivation?**

*Lead Analyst/Methodologist, 2021-Present*

Co-curricular activities are often touted as valuable STEM learning opportunities in higher education settings. Particularly in engineering, the industry encourages and seeks students with co-curricular experiences. However, relatively small numbers of engineering undergraduates have such experiences. Dr. Andrew Olewnik and Dr. Yunjeong Chang are principal investigators of the project, which presents a mixed-methods study focused on two research questions: 1) What time might undergraduate engineering students have available for co-curricular participation? And 2) Which motivation factors might explain undergraduate engineering students' engagement in co-curricular activities? Dr. Su designed the quantitative part to explore the relationship between EVT factors and student co-curricular engagement on primary data. She also tested the psychometrics of EVT scales.

### *August 2019 – May 2021*

#### **Graduate Research Assistant**

• Graduate School of Education • Buffalo, NY

#### **Academic and Sociocultural Readiness for Postgraduate Education among Immigrant and International Students: Promoting Equal Access and Success in Graduate Schools**

**Services**  
**Journal ad-hoc reviewer**  
 2020-2022  
 Studies in Educational Evaluation

2021  
 International Journal of  
 Evaluation and Research

*Lead Analyst, 2019-2021*

Dr. Su worked as a research assistant for the project led by Dr. Jaekyung Lee and Dr. Namsook Kim. Dr. Su was responsible for testing advanced hierarchical linear modeling and multinomial logistic regression on national, large-scale, secondary data of Beginning Postsecondary Students Longitudinal Study (BPS).

**Reassessing K-12 School Effectiveness: Multi-objective Value-added Measures (MOVAM) of Academic and Socioemotional Learning**

*Research Analyst, 2019-2021*

Under the Every Student Succeeds Act (ESSA), the policy shift towards broad-based school accountability calls for reassessing school effectiveness from whole child development perspectives and addressing potential biases and limitations of conventional value-added measures (VAM). Through multivariate multilevel analyses of the Early Childhood Longitudinal Study-Kindergarten (ECLS-K): 2011 data, Dr. Su was responsible to applied a multi-objective value-added measures (MOVAM) approach to assess and improve school effectiveness for academic and socioemotional learning using SPSS and AM statistics.

***August 2019 – May 2021***

**Teaching Assistant**

• Graduate School of Education • Buffalo, NY

CEP500—Fundamentals of Educational Research;  
 CEP510—Psychometric Theory in Education

**Dissertation Study**

**2021**

Committee: Dr. Jaekyung Lee (Advisor), Dr. Seong Won Han, Dr. Michele E. Shanahan

Dissertation title:

The Mediation Effect of Student Engagement on the Relationship between School Climate, Socioemotional Well-Being, and Academic Achievement: A Cross-Cultural Comparative Study of China, Korea, Finland, and the U.S.

## PUBLICATIONS

### Manuscripts under Review/Revision

**Su, M.** & Lee, J. (in press). Eastern versus Western Gaps in Whole Child Education: How School Climate Works for Academic Achievement and Well-being across China, Korea, Finland, and the United States.

Olewnik, A., Chang, Y., & **Su, M.** (in revision). Co-curricular Engagement Among Engineering Undergrads: Do They Have the Time and Motivation?

**Su, M.** (under review). Leaving Home, Living Abroad: Chinese International Students and their Multidimensional Engagement in High Education Institutions in the U.S.

### Peer-Reviewed Journal Articles

Lee, J., Kim, N., & **Su, M.** (2021). Immigrant and international college students' learning gaps: Improving academic and sociocultural readiness for career and graduate/professional education. *International Journal of Educational Research Open*, 2, 100047.

Lee, J., Kim, T., & **Su, M.** (2021). Reassessing school effectiveness: Multi-objective value-added measures (MOVAM) of academic and socioemotional learning. *Studies in Educational Evaluation*, 68, 100972.

### Conference Proceedings

**Su, M.**, Olson, L. A., Jarratt, D. C., Varma, S., Konstan, J. A., Keller, R., & Chen, B. (2022). Re-envisioning a K-12 early warning system with school climate factors. In *Proceedings of the Ninth ACM Conference on Learning @ Scale*.

### Book Chapters

Lee, J., & **Su, M.** (2022). Re-envisioning American Education Reform: How and Why Whole Community Environment Matters for Whole Child Development. In J. Lee & K. Wong (Eds.), *Centering Whole-Child Development in Global Education Reform: International Perspectives on Agendas for Educational Equity and Quality*. Routledge.

Yang, Y., **Su, M.**, & Liu, R. (2022). Concepts and Applications of Multivariate Multilevel (MVML) Analysis and Multilevel Structural Equation Modeling (MLSEM). In M.S. Khine (Eds.), *Methodology for Multilevel Modeling in Educational Research: Concepts and Applications*. Springer, Singapore.

### Presentations and Posters

#### *Invited Talks*

**Su, M.**, (2020, May). *Re-envisioning the K-12 Early Warning System with School Climate/Socioemotional Factors*. An Invited Talk in the Development Meeting organized by Infinite Campus, Infinite Campus, Blain, MN.

#### *Contributed Papers Presented at Professional Meetings and Conferences*

**Su, M.** (2022, Aug 4 - 6). *The Causal Effect of School Climate on Whole-Child Development in Korea: A Propensity Score Analysis* [Poster session]. APA2022

Convention, Minneapolis, MN, United States.

- Su, M.** (2022, Aug 4 - 6). *Taking a Whole Community Approach on Supporting U.S. Children's Socioemotional Learning on 2019 NSCH* [Poster session]. APA2022 Convention, Minneapolis, MN, United States.
- Su, M.**, Olson, L., Jarratt, D., Varma, S., Konstan, J., Keller, R., & Chen, B. (2022, June 1-3). Re-envisioning a K-12 early warning system with school climate factors [Poster session]. Ninth ACM Conference on Learning @ Scale. Roosevelt Island, NY, United States.
- Su, M.** (2022, Apr 18 - 22). *Leaving Home, Living Abroad: Chinese International Students and their Engagement on American Campuses* [Poster session]. CIES Annual Conference, Minneapolis, MN, United States.
- Su, M.** (2022, Mar 12 - 14). *Head or Heart? Revisioning School Accountability for Whole Child Development* [Poster session]. AEFPP Annual Conference, Denver, CO, United States.
- Su, M.** & Kim, S. (2021, Aug 12 - 14). *Opportunity, Engagement to Learn, and Students Math Literacy: A Structural Model on PISA2012* [Poster session]. APA2021 Convention, United States.
- Su, M.** & Lee, J. (2021, Apr 9 - 12). *Whole Child Education: China, Korea, Finland, and the U.S. Students' Academic Achievement and Socioemotional Well-being* [Roundtable Session]. AERA Annual Meeting, United States.
- Lee, J., Kim, N., & **Su, M.** (2021, Apr 9 - 12). *Do High-Impact Practices Work for College Success? Mixed-Methods Research on Academic and Sociocultural Learning Inequalities* [Roundtable Session]. AERA Annual Meeting, United States.
- Su, M.** (2020, Aug 6 - 8). *Stratification of High School Student Engagement, and the Transition to the Postsecondary Education: A Cox Regression Survival Analysis* [Poster session]. APA2020 Convention, United States.
- Su, M.** (2020, Aug 6 - 8) *Digital Literacy and Academic Competencies: A Comparative Study of Chinese and Korean Students' Math Achievement* [Poster session]. APA2020 Convention, United States.
- Su, M.** & Lee, J. (2020, Apr 17 - 21). *Smart and Happy Together? A Comparative Study of Korean Versus U.S. Students' Achievement and Well-Being* [Roundtable Session]. AERA Annual Meeting San Francisco, CA, United States. <http://tinyurl.com/r4vsw3p> (Conference Canceled)
- Lee, J., Kim, N. & **Su, M.** (2020, Apr 17 - 21). *Immigrant and International College Students' Gaps: Academic and Sociocultural Readiness for Career and Graduate Education* [Roundtable Session]. AERA Annual Meeting San Francisco, CA, United States. <http://tinyurl.com/u9gm5t7> (Conference Canceled)