Steven Silber
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EDUCATION

University of Delaware, Newark, DE — **Summer 2022**
Ph.D. in Mathematics Education
Dissertation: *The Evolution of Undergraduate Developmental Mathematics Students' Problem Posing and Attention to Mathematical Information*
Advisor: Jinfa Cai, Ph.D.

West Virginia University, Morgantown, WV
M.S. in Mathematics — **2012**

West Virginia University, Morgantown, WV
B.S. in Mathematics — **2010**

HONORS AND AWARDS

University Graduate Fellowship Award — **2016 - 2017**

Competitive award ($18,000) granted by the University of Delaware to doctoral students showing academic achievement, evidence of professional commitment and potential contribution in their field of study.

TEACHING EXPERIENCE

Virginia Tech, Blacksburg, VA — **2017 - Present**
Instructor
Taught several sections of introductory calculus courses for science and engineering students. Taught mathematics courses for teachers, focused on developing conceptual understanding of numbers, mathematical operations, and geometric and spatial reasoning. Taught mathematics education courses for pre-service high school math teachers participating in early field experiences and tutoring experiences, focused on noticing and reacting to students' mathematical thinking. Mentored first time graduate teaching assistants to improve their teaching skills. Coordinated the first-semester calculus course.

University of Delaware, Newark, DE
Graduate Teaching Assistant – MATH 252: Mathematics for K-8 Teachers: Rational Numbers and Probability — **Spring 2016**
Taught one section of a 3-credit hour course designed for elementary pre-service teachers, focusing on developing conceptual understanding of rational numbers, operations with rational numbers, proportion and probability

Graduate Teaching Assistant – MATH 251: Mathematics for K-8 Teachers: Number and Operation — **Fall 2014, Fall 2015**
Taught one section of a 3-credit hour course designed for elementary pre-service teachers, focusing on developing conceptual understanding of arithmetic operations in the Hindu-Arabic

number system.

West Virginia University, Morgantown, WV

Graduate Teaching Assistant – "First- Year Seminar" **2011 - 2012**

Taught multiple sections of a one-hour first-year seminar course designed for first year undergraduate students; mentored first-year students who were at risk for failing out of the university

Mentor – Institute for Mathematics Learning **2010 - 2011**

Tutored and assisted students studying undergraduate mathematics courses, such as college algebra, trigonometry, and calculus; administered and monitored computerized testing for lab-associated mathematics courses

RESEARCH EXPERIENCE

University of Delaware, Newark, DE **2012 -**

Graduate Research Assistant **2015**

Research Assistant to Dr. Jinfa Cai in the Department of Mathematics; conducted data analysis for the Longitudinal Investigation of the Effect of Curriculum on Algebra Learning (LIECAL) project; work includes presentation at an international conference and co-authorship of a book chapter.

PUBLICATIONS

Silber, S.P. (in progress). Interpreting and engaging in mathematical problem posing: A case study of three undergraduate remedial mathematics students.

Silber, S., & Cai, J. (2021). Exploring underprepared undergraduate students' mathematical problem posing. *ZDM Mathematics Education* (53), 877-889. DOI: 10.1007/s11858-021-01272-z

Silber, S.P., & Cai, J. (2017). Pre-service Teachers' Free and Structured Mathematical Problem Posing. *International Journal of Mathematical Education in Science and Technology*. DOI: 10.1080/0020739X.2016.1232843

Cai, J., Silber, S., Hwang, S., Nie, B., Moyer, C., & Wang, N. (2016). The LieCal Project and Its Investigation of Problem-Solving Strategies as a Measure of Longitudinal Curricular Effects on Students' Learning. *REMATEC, 11*(21), 123-140.

Marzocchi, A.S., Miller, E.K., & Silber, S.P. (2016). Charting paths toward "common ground": Fostering collaboration between mathematicians and mathematics educators: Review of *Mathematics & Mathematics Education: Searching for Common Ground* by Michael N. Fried and Tommy Dreyfus (Eds., 2014). *Journal for Research in Mathematics Education, 47*(2), 199-203.

Cai, J., Hwang, S., Jiang, C. & Silber, S. (2015). Problem posing research in mathematics: Some answered and unanswered questions. In F.M. Singer, N. Ellerton, & J. Cai (Eds.), *Problem Posing: From Research to Effective Practice*. Springer.

Cai, J., Silber, S., Hwang, S., Nie, B., Moyer, J. C., & Wang, N. (2014). Problem-solving strategies as a measure of longitudinal curricular effects on student. In S. P. Liljedahl, C. O. Nicol, S. Oesterle, & D. Allan (Eds.), *Proceedings of the joint meeting of the 38th International Group and the 36th North American Chapter for the Psychology of Mathematics Education* (Vol. II) (pp. 233-240). Vancouver, British Columbia, Canada:

International Group for the Psychology of Mathematics Education.

PRESENTATIONS

Silber, S. (2018, February). *Examining Students' Problem Posing through a Creativity Framework*. Paper presented at the 21st Annual Conference on Research on Undergraduate Mathematics Education. San Diego, CA.

Silber, S. (2017, February). *Problem Posing and Developmental Mathematics Students*. Poster presented at the 20th Annual Conference on Research on Undergraduate Mathematics Education. San Diego, CA.

Silber, S. (2016, April). *The Role of Task Orientation in Undergraduate Developmental Mathematics Students' Problem Posing*. Paper presented at the University of Delaware College of Education and Human Development 2016 Steele Symposium, Newark, DE.

Silber, S. (2015, April). *Pre-service Teachers' Mathematical Thinking under Free and Structured Problem-Posing Situations.* Paper presented at the University of Delaware College of Education and Human Development 2015 Steele Symposium, Newark, DE.

Silber, S. (2015, April). *Pre-Service Teachers' Free and Structured Mathematical Problem Posing: An Exploratory Study*. Poster presented at the 2015 Annual Meeting of the American Educational Research Association, Chicago, Illinois.

Cai, J., Silber, S., Hwang, S., Nie, B., Moyer, C., & Wang, N. (2014, July). *Problem-solving strategies as a measure of longitudinal curricular effects on student learning*. Research report presented at the meeting of The 38th Conference of the International Group for the Psychology of Mathematics Education, Vancouver, Canada.

Silber, S. (2014, May). *The effect of posing guides on pre-service teachers' mathematical problem posing*. Poster presented at the University of Delaware College of Education and Human Development 2014 Steele Symposium, Newark, DE.

SERVICE

Ad hoc reviewer for
Journal for Research in Mathematics Education
Journal of Mathematical Behavior

PROFESSIONAL MEMBERSHIPS

Mathematical Association of America (MAA)
National Council of Teachers of Mathematics (NCTM)

LANGUAGES

English – native language
Spanish – speak, read, and write with basic competence

REFERENCES

Jinfa Cai, Ph.D.
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University of Delaware
501 Ewing Hall
Newark, DE 19716
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