

Michael S. Rugh

PhD Student (Curriculum and Instruction), Researching Mathematics Education at Aggie STEM
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RESEARCH INTERESTS

Mathematics Education, Informal STEM Education, Technology in Education,
Project-Based Learning, Interdisciplinary STEM Language

EDUCATIONAL BACKGROUND

- Ph.D. Curriculum & Instruction (emphasis in Mathematics Education), Texas A&M University,
(Expected Graduation – 2021)
- M.S. Mathematics (Teaching Track), Texas A&M University, 2015
- B.S. Mathematics, Texas A&M University, 2013

EMPLOYMENT HISTORY

Employment

- Assistant Editor, Journal of Urban Mathematics Education, June 2019 – Present
- GA – Teaching, TLAC, Texas A&M University, August 2018 – Present
- GA – Research, TLAC & Aggie STEM, Texas A&M University, August 2017 – Present
- Substitute Teacher, College Station ISD, College Station, TX, August 2016 – May 2017
- Research Assistant, TLAC, Texas A&M University, January 2016 – June 2016
- Mathematics SAT Tutor, C2 Education, College Station, TX, August 2015 – July 2017
- Grader, Department of Mathematics, Texas A&M University, July 2013 – May 2014

Consulting

- Summer Camp Instructor, Aggie STEM, Texas A&M University, June 2017 – Present

HONORS, AWARDS, AND LISTINGS

- Graduate Merit Fellowship, Texas A&M University, August 2017 – May 2020

PUBLICATIONS

- Rugh, M. S.**, Williams, A. M., Lee, Y., Capraro, R. M. (In Press). Do Texas STEM schools really teach algebra? *In Proceedings of the 50th Annual IEEE Frontiers in Education (FIE) Conference*. Piscataway, NJ: IEEE.
- Lee, Y., Bicer, A., Kwon, H., **Rugh, M. S.**, Capraro, R. M., Capraro, M. M., Barroso, L. (In Press). Post-secondary ready: Does the STEM curriculum matter? *In Proceedings of the 50th Annual IEEE Frontiers in Education (FIE) Conference*. Piscataway, NJ: IEEE.
- Bicer, A., Lee, Y., Capraro, R. M., Capraro, M. M., Barroso, L. R., **Rugh, M. S.** (In Press). Examining the effects of STEM PBL on students' divergent thinking attitudes related to creative problem solving. *In Proceedings of the 50th Annual IEEE Frontiers in Education (FIE) Conference*. Piscataway, NJ: IEEE.
- Kwok, M., Vela, K. N., **Rugh, M. S.**, Lincoln, Y. S., Capraro, R. M., & Capraro, M. M. (2019). Words and their meanings: Does clarifying language help? Manuscript submitted for publication.
- Beyette, D., **Rugh, M. S.**, Lin, J., Wang, X., Wang, Z., Liu, J.-C., Capraro, R. M. (2019). DIME: A dynamic interactive mathematical expression tool for STEM education. *In Proceedings of the 126th Annual Conference and Exposition of the American Society of Engineering Education (ASEE)*. PUBLISH
- Lee, Y., Bicer, A., Capraro, R. M., Capraro, M. M., Barroso, L. R., Kwon, H., & **Rugh, M. S.** (2018). Comparing mathematics and science achievement of students from schools with PLTW versus schools without PLTW. *In Proceedings of the 49th Annual IEEE Frontiers in Education (FIE) Conference*. Piscataway, NJ: IEEE.
- Rugh, M. S.**, Calabrese, J. E., Madson, M. A., Capraro, R. M., Barroso, L. R., Capraro, M. M., & Bicer, A. (2018). STEM language can be the stem of the problem. *In Proceedings of the 49th Annual IEEE Frontiers in Education (FIE) Conference*. Piscataway, NJ: IEEE.
- Wang, K., Wang, X. Q., Li, Y., & **Rugh, M. S.** (2018). A framework for integrating the history of mathematics into teaching in Shanghai. *Educational Studies in Mathematics*, 98, 135-155.

PRESENTATIONS

- Rugh, M. S.**, Williams, A. M., Lee, Y., Capraro, R. M. (2019, October). *Do Texas STEM schools really teach algebra?* Paper presented at the annual meeting of Frontiers in Education (FIE). Cincinnati, OH. (National/International)
- Lee, Y., Bicer, A., Kwon, H., **Rugh, M. S.**, Capraro, R. M., Capraro, M. M., Barroso, L. (2019, October). *Post-secondary ready: Does the STEM curriculum matter?* Paper presented at the annual meeting of Frontiers in Education (FIE). Cincinnati, OH. (National/International)
- Bicer, A., Lee, Y., Capraro, R. M., Capraro, M. M., Barroso, L. R., **Rugh, M. S.** (2019, October). *Examining the effects of STEM PBL on students' divergent thinking attitudes related to creative problem solving.* Paper presented at the annual meeting of Frontiers in Education (FIE). Cincinnati, OH. (National/International)

- Beyette, D., **Rugh, M. S.**, Lin, J., Wang, X., Wang, Z., Liu, J.-C., Capraro, R. M. (2019, June). *DIME: A dynamic interactive mathematical expression tool for STEM education*. Paper presented at the 126th Annual Conference and Exposition of the American Society of Engineering Education (ASEE). Tampa, FL. (National/International)
- Rugh, M. S.**, Wang, X., Lin, J., Barroso, L. R., Capraro, M. M., & Capraro, R. M. (2019, April). *Computer generated dynamic graphic organizer's effect on learning outcomes*. Paper presented at the National Council of Teachers of Mathematics (NCTM) research conference. San Diego, CA. (National/International)
- Also referenced online as:
Rugh, M. S., Wang, X., Lin, J., Beyette, D., Barroso, L. R., Capraro, M. M., Capraro, R. M., & Liu, J.-C. (2019, April). *Computer generated dynamic graphic organizer's effect on learning outcomes*. Paper available online in the repository of the National Council of Teachers of Mathematics (NCTM) Research Conference. San Diego, CA. (National/International)
- Wang, K., Li, Y., & **Rugh, M.** (2019, April). *Analysis of mathematics textbooks from a curriculum coherent perspective: The case of equivalent fractions*. Paper presented at the American Educational Research Association (AERA) conference. Toronto: Canada. (National/International)
- Rugh, M. S.**, Capraro, R. M., & Capraro, M. M. (2019, February). *Factors that influence deductive reasoning*. Presented at the annual meeting of the Southwest Educational Research Association (SERA) regional conference. San Antonio, TX.
- Rugh, M. S.**, Calabrese, J. E., Madson, M. A., Capraro, R. M., Barroso, L. R., Capraro, M. M., & Bicer, A. (2018, October). *STEM language can be the stem of the problem*. Paper presented at the annual meeting of Frontiers in Education (FIE). San Jose, CA. (National/International)
- Lee, Y., Bicer, A., Capraro, R. M., Capraro, M. M., Barroso, L. R., Kwon, H., & **Rugh, M. S.** (2018, October). *Comparing mathematics and science achievement of students from schools with PLTW versus schools without PLTW*. Paper presented at the annual meeting of Frontiers in Education (FIE). San Jose, CA. (National/International)
- Rugh, M. S.**, & Capraro, M. M. (2018, February). *The spin on fidget spinners*. Presented at the annual meeting of the Southwest Educational Research Association (SERA) regional conference. New Orleans, LA.

INVITED PRESENTATIONS

- Rugh, M. S. (2019, June). *The DIME map: A dynamic interactive mathematical expressions map*. Invited seminar. University of Swansea: Swansea, Wales.

PROFESSIONAL, COMMUNITY, AND CIVIC ACTIVITIES

Vice President, TLAC Graduate Student Association, May 2019 – Present

Revised 9/16/2019

TAMU Graduate Representative, Southwest Educational Research Association, 2019

Manuscript Reviewer, American Society for Engineering Education, 2019

Social Coordinator, TLAC Graduate Student Association, May 2018 – August 2019

Member, Kappa Delta Pi, May 2018 - Present

Manuscript Reviewer, IEEE's Frontiers in Education, 2018 – Present

Created Literacy-Infused Science Using Technology Opportunities (LISTO) Video, 2017

Proposal Reviewer, Southwest Educational Research Association, 2017 – Present

Various service callings, The Church of Jesus Christ of LDS, July 2016 – Present