

PUBLICATIONS

Peer-reviewed Journal Manuscripts

Jurgenson, K. & Delaney, A. (In Press, 2020). The three little engineers. *Mathematics Teacher: Learning and Teaching Pre-K-12*.

Delaney, A. & **Jurgenson, K.** (2019). Building bridges: Connecting science and engineering with literacy and mathematics. *Science and Children*, 57(1), 82-88.

Jurgenson, K. & Appelgate, M. (2019). Using existing lessons to create three-dimensional lessons. *Science Scope*, 43(1), 70-74.

Appelgate, M., Jackson, C., **Jurgenson, K.**, & Delaney, A. (2018). Introducing mathematics concepts using STEM Connections. *Teaching Children Mathematics*, 24(6), 394-397.

Peer-reviewed Book Chapters

Jackson, C., Tank, K., Appelgate, M., **Jurgenson, K.**, Delaney, A., & Erden, C. (In Press). History of integrated STEM curriculum. *Handbook of Research on STEM Education*.

Peer-reviewed Proceedings

Jurgenson, K., Rokkum, J., Baker, A., & Bolles, H. (2019). Self-efficacy for self-regulatory behaviors and student achievement in an undergraduate calculus course. Proceedings to be included in Otten, S., de Araujo, Z., Candela, A., & Munter, C. (Eds.), *Proceedings of the 41st annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education*. St. Louis, MO: University of Missouri.

Appelgate, M., Jackson, C., **Jurgenson, K.**, & Delaney, A. (2018). Using text messages to connect linguistically diverse families with their child's mathematics classroom learning. In T. Hodges, G. Roy, & A. Tyminski (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education*. Greenville, SC: South Carolina University.

Jackson, C., Appelgate, M., Delaney, A., & **Jurgenson, K.** (2018). Influence of integrated STEM curricula on instruction. In T. Hodges, G. Roy, & A. Tyminski (Eds.), *Proceedings of the 40th annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education*. Greenville, SC: South Carolina University.

Manuscripts in Preparation

Jurgenson, K. & Hargrave, C. (In Progress). Educational Technology Journals' Examination of the Racial Digital Divide.

Appelgate, M., Jackson, C., **Jurgenson, K.**, & Delaney, A. (In Progress). Connecting Linguistically Diverse Families with What Their Child Is Learning in Mathematics in the Digital Age.

Jackson, C., Appelgate, M., **Jurgenson, K.**, & Delaney, A. (In Progress). Changes in Elementary Teachers' Conceptions of Teaching After Implementing Integrated STEM.

Jackson, C., Appelgate, M., **Jurgenson, K.**, & Delaney, A. (In Progress). The Effect of an Integrated STEM Unit on Students' Content Knowledge and STEM Self-efficacy.

SCHOLARLY CONFERENCE PARTICIPATION

Paper Presentations

Baker, A., **Jurgenson, K.**, & Bolles, H. (April 2020). *A Qualitative Examination of Epistemic Factors Driving Engagement in Team-Based College Calculus*. American Educational Research Association, San Francisco, CA.

Baker, A., **Jurgenson, K.**, & Bolles, H. (April 2020). *Investigating the Role of Student Engagement in Team-Based College Calculus*. American Educational Research Association, San Francisco, CA.

Jurgenson, K., Appelgate, M. (February 2020). *The evolution of teachers' perceptions of integrated STEM education over three years*. Association of Mathematics Teacher Educators, Phoenix, AZ.

Appelgate, M., **Jurgenson, K.**, & Jackson, C. (February 2020). *Developing an integrated STEM curriculum in partnership with engineers and teachers*. Association of Mathematics Teacher Educators, Phoenix, AZ.

Bolles, H., **Jurgenson, K.**, & Baker, A. (February 2020). *Changing the script: How teaching Calculus using team-based learning misaligns with students' views of how learning mathematics occurs*. Research in Undergraduate Mathematics Education, Boston, MA.

Jurgenson, K., Rokkum, J., Baker, A., & Bolles, H. (November 2019). *Self-efficacy for self regulatory behaviors and student achievement in an undergraduate calculus course*. 41st annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education, St. Louis, MO.

Delaney, A., Jackson, C., & **Jurgenson, K.** (April 2019). *Coding and logic: Play-based spatial reasoning and computational thinking in PK-2*. National Council of Teachers of Mathematics Annual Conference, San Diego, CA.

Jackson, C., Appelgate, M., **Jurgenson, K.,** I, J., & Huey, M. (February 2019). *Evolution of teachers' beliefs and attitudes towards teaching black and emerging bilingual students*. Association of Mathematics Teacher Educators, Orlando, FL.

Appelgate, M., Jackson, C., **Jurgenson, K.,** & Delaney, A. (November 2018). *Using text messages to connect linguistically diverse families with their child's mathematics classroom learning*. 40th annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education, Greenville, SC.

Jackson, C., Appelgate, M., Whitmer, C., Delaney, A., & **Jurgenson, K.** (April 2018). *Why boats float: It speaks volumes about mathematics*. National Council of Teachers of Mathematics Annual Conference, Washington, D.C.

Jurgenson, K. (February 2018). *"It was like being a first-year teacher": Doctoral students' experiences becoming mathematics teacher educators*. Association of Mathematics Teacher Educators, Houston, TX.

Poster Presentations

Jackson, C., Appelgate, M., Delaney, A., & **Jurgenson, K.** (November 2018). *Influence of integrated STEM curricula on instruction*. 40th annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education, Greenville, SC.

Appelgate, M., Jackson, C., **Jurgenson, K.,** & Delaney, A. (October 2018). *Using mathematically focused text messages to communicate with parents*. Interdepartmental Research Showcase, Ames, IA.

Appelgate, M., Jackson, C., **Jurgenson, K.,** & Delaney, A. (April 2018). *Using mathematically focused text messages to communicate with parents*. National Council of Teachers of Mathematics Research Conference, Washington, D.C.

Panelist

April 2018. Invited panelist for *Want a Faculty Job? Prepare at ISU*. Graduate and Professional Student Research Conference, Iowa State University.

RESEARCH

Grant Funded Research Projects

- Dec. 2017 - *Promoting Student Engagement and Productive Groups Dynamics in Team-Based Learning Calculus Courses*. Miller Faculty Fellowship. Award amount: \$14,986. Co-PIs: Amanda Baker, Ph.D. and Heather Bolles, Ph.D. **Role: Research Assistant.**
- May 2019
- May 2017 - *Design environment for Educator – Student Collaboration Allowing Real-Time Engineering-centric STEM (DESCARTES) exploration in middle grades*. Institute of Education Sciences, Department of Education Small Business Innovation Research. Award amount: \$310,475. (Full project amount: \$900,000). PI: Christopher Whitmer, Ph.D. Awarded as a subcontract to Christa Jackson, Ph.D. from Parametric Studio. **Role: Research Assistant.**
- Jun. 2019
- Apr. 2017 - *Effectively Supporting all Students to be Successful in Algebra (ES³A)*. Iowa Sep. 2018 Mathematics and Science Partnerships Program (Title II – B). Award amount: \$254,872. Amended Funding amount of \$95,341 for a Total Award Amount: \$350,213. PI: Christa Jackson, Ph.D. and Mollie Appelgate, Ph.D. **Role: Research Assistant.**
- Jul. 2016 - *Engineering Design Instruction Software for implementing Objectives of Next Jun. 2017 (EDISON) Generation Standards in K-12*. National Science Foundation. Award Amount: \$107,226 (Full project amount: \$225,000). PI: Christopher Whitmer, Ph.D. Awarded as a subcontract to Christa Jackson, Ph.D. from Parametric Studio. **Role: Research Assistant.**
- May 2016 - *Design environment for Educator – Student Collaboration Allowing Real-Time Dec. 2016 Engineering-centric STEM (DESCARTES) exploration in middle grades*. Institute of Education Sciences, Department of Education Small Business Innovation Research. Award Amount: \$49,813 (Full project amount: \$149,740). PI: Christopher Whitmer, Ph.D. Awarded as a subcontract to Christa Jackson, Ph.D. from Parametric Studio. **Role: Research Assistant.**
- Apr. 2016 - *Using Mathematically-Focused Text Messages to Improve Connections between Jun. 2017 Linguistically-Diverse Parents and Their Child’s Classroom Learning*. University of Northern Iowa Center for Educational Transformation. Award Amount: \$31,000. PI: Mollie Appelgate, Ph.D., Co-PI: Christa Jackson, Ph.D. **Role: Research Assistant.**

- July 2016 - *Literacy and STEM Summer Library Internship Program for Teacher Candidates.*
 Dec. 2017 Iowa State University – Human Sciences Extension and Outreach and the College of Human Sciences. Award amount: \$35,960. PI: Mollie Appelgate, Ph.D. **Role: Research Assistant.**
- May 2016 - *Growing Pre-service Teacher Practice using Screencasts of Elementary Students’*
 Aug. 2017 *Mathematical Thinking.* Award amount: \$9,431. Iowa State University – College of Human Sciences Seed Grant Program. PI: Mollie Appelgate, Ph.D. **Role: Research Assistant.**

Grants Applied for as Primary Investigator/Applicant

- Jan. 2020 *The evolution of teachers’ perceptions of integrated STEM education over three years.* Iowa State University Graduate and Professional Student Senate (GPSS) - Professional Advancement Grant (In review)
- Sep. 2019 *Investigating how elementary students learn mathematics concepts within an integrated STEM unit.* NASA Iowa Space Grant Graduate Fellowship Program (funded)
- Sep. 2018 *Using text messages to connect linguistically diverse families with their child’s mathematics classroom learning.* Iowa State University Graduate and Professional Student Senate (GPSS) - Professional Advancement Grant (funded)
- Feb. 2018 *Doctoral Students’ Experiences Becoming Mathematics Teacher Educators.* The Association for Graduate Enrollment Management - Graduate Student Research Grant, NAGAP (not funded)
- Jan. 2018 *Doctoral Students’ Experiences Becoming Mathematics Teacher Educators.* Iowa State University Graduate and Professional Student Senate (GPSS) - Professional Advancement Grant (funded)
- Oct. 2017 *Using Screencasting Technology to Support Preservice Teachers Mathematical Noticing.* Iowa State University - Teaching as Research Grant (not funded)

RESERACH EXPERIENCE

2016-Present **Research Assistant**

Iowa State University, School of Education

Supervisor: Christa Jackson

- Design integrated STEM units for grades 3-8 with colleagues
- Collected, managed, and analyzed qualitative and quantitative data
- Co-facilitate professional development for in-service mathematics teachers

- 2016-Present **Research Assistant**
Iowa State University, School of Education
Supervisor: Mollie Appelgate
- Conduct cognitive interviews with K-5 students
 - Design mathematically-focused text messages for linguistically diverse families and conducted focus groups with the families
 - Construct a database containing videos of elementary students' mathematical thinking
- 2018-2019 **Research Assistant**
Iowa State University, School of Education
Supervisor: Amanda Baker
- Interviewed and observed college Calculus students to understand their experiences with mathematics and team-based learning
 - Analyzed the qualitative data in terms of student motivation and engagement as well as team dynamics

TEACHING EXPERIENCE

- 2019 **Assistant to the Instructor**
Iowa State University, School of Education
EDUC 497/597 Teaching Secondary School Mathematics (Secondary mathematics methods)
- Created and presented content to pre-service secondary mathematics teachers
 - Facilitated small group and whole class discussions related to effective teaching practices and lesson planning for secondary mathematics
- 2017-2018 **Instructor**
Iowa State University, School of Education
CI448 Teaching Children Mathematics (Elementary mathematics methods)
- Supported preservice teachers in acquiring content and pedagogical content knowledge of elementary mathematics concepts
 - Promoted the value of rigorous mathematical tasks and engaging students in mathematical discourse
 - Supervised preservice teachers teaching lessons they designed based on student mathematical thinking and reasoning
- 2013-2016 **Mathematics Teacher**
Columbia Independent School, Columbia, MO
- Taught 6th and 7th grade mathematics, Algebra I, Algebra II, & AP Statistics
 - Implemented iPad textbooks in the classroom
 - Took on leadership roles regarding curriculum and led professional development for colleagues on a new learning management system

- 2012-2013 **Mathematics Teacher**
Columbia Public Schools, Columbia, MO
- Taught seventh grade and advanced seventh grade mathematics
 - Designed lessons that incorporated activities to promote active learning and student engagement
 - Conducted action research on the use of cooperative learning in the classroom

OUTREACH ACTIVITIES

- Oct. 2019 *STEM Camp for Early Childhood Girls.* Delaney, A., **Jurgenson, K.** Contributed to a program encouraging STEM learning to early childhood girls.
- Aug. 2019-
Oct. 2019 *STEM Curriculum Professional Development.* **Jurgenson, K.** Organized and led professional development for 4th and 5th grade teachers implementing the DESCARTES integrated STEM curriculum.
- Jun. 2019 *STEM InCYte Camp.* Jackson, C., **Jurgenson, K.**, Delaney, A., & Erden, C. Organized and implemented a five-day STEM camp for approximately 40 underrepresented 4th, 5th, and 6th graders.
- Oct. 2018 *STEM Camp for Early Childhood Girls.* Delaney, A., Jackson, C., Appelgate, M., **Jurgenson, K.** Contributed to a program encouraging STEM learning to early childhood girls.
- Mar. 2018-
May 2018 *Supporting the implementation of Cognitively Guided Instruction (CGI) in mathematics through research.* Appelgate, M. & **Jurgenson, K.** Working in collaboration with a district, an elementary school and the local AEA to understand the effects of CGI teacher training on teachers' attitudes, knowledge and instruction, as well as children's attitudes and achievement.
- Aug. 2017-
Aug. 2018 *Effectively Supporting all Students to Be Successful in Algebra professional development.* Jackson, C., Appelgate, M., I, J., Huey, M., Bolles, H., **Jurgenson, K.**, & Delaney, A. As a co-facilitator, planned and implemented professional development through the ESSSA grant for middle school mathematics teachers that focused on supporting equitable mathematics instruction for students of color and emerging bilinguals.
- Jun. 2018 *STEM InCYte Camp.* Jackson, C., Appelgate, M., **Jurgenson, K.**, & Delaney, A. Organized, planned, and implemented a three-day STEM camp for 45 underrepresented 4th and 5th graders.

- Mar. 2018 *STEM Camp for Early Childhood Girls*. Delaney, A., Jackson, C., Appelgate, M., **Jurgenson, K.** Contributed to a program encouraging STEM learning to early childhood girls.
- Oct. 2017 *STEM Camp for Early Childhood Girls*. Delaney, A., Jackson, C., Appelgate, M., **Jurgenson, K.** Contributed to a program encouraging STEM learning to early childhood girls.
- Sep. 2017-
May 2018 *Mathematics with Parents and Children*. Appelgate, M. & **Jurgenson, K.** Planned and implemented monthly mathematics activities in the Ames Public Library to engage parents and children in interesting and challenging mathematics learning.
- Jun. 2017 *STEM InCYte Camp*. Jackson, C., Appelgate, M., **Jurgenson, K.**, & Delaney, A. Organized, planned, and implemented a three-day STEM camp for 26 underrepresented 4th and 5th graders.
- Aug. 2016 *STEM Curriculum Professional Development*. Jackson, C., Appelgate, M., **Jurgenson, K.**, & Delaney, A. Co-facilitated professional development provided through the DESCARTES grant for 4th grade teachers implementing the integrated STEM curriculum.

SERVICE

- 2018-2019 Search committee member for a STEM education faculty position, *Iowa State University School of Education*
- 2018-2019 Graduate Student Advisory Council member, *Iowa State University*
- 2018 Proposal reviewer for the 41st annual meeting of the North American Chapter of the International Groups for the Psychology of Mathematics Education
- 2018 Invited panelist for “Mentoring the Next Generation of Faculty: Preparing Future Faculty and CIRTL”. Association of American Universities site visit, *Iowa State University*
- 2017-2018 Doctoral Learning Community Co-organizer, *Iowa State University*
- 2017-2018 New Graduate Student Mentor, *Iowa State University*
- 2017 Invited panelist for “Perspectives of Current Doctoral Students”. Prospective Doctoral Student Visit day, *Iowa State University*

AWARDS

- Spring 2020 Research Scholarship, *Iowa State University School of Education*
- Fall 2019-
Spring 2020 P.E.O. Scholar Award, *Philanthropic Educational Organization (P.E.O.)*

Fall 2019- Graduate Fellowship, *Iowa State University School of Education*
Spring 2020
Fall 2019 Three Minute Thesis Competitor, *Iowa State University*
Fall 2018 Research Scholarship, *Iowa State University School of Education*
Spring 2018 Research Scholarship, *Iowa State University School of Education*
Spring 2018 Excellence as a Ph.D. Student Scholarship, *Iowa State University School of Education*
Spring 2018 Nominated for Graduate Leadership Award, *Iowa State University*
Fall 2017 Excellence as a Ph.D. Student Scholarship, *Iowa State University School of Education*

PROFESSIONAL AFFILIATIONS

2019-Present School Science and Mathematics Association (SSMA) (Member)
2017-Present Association of Mathematics Teacher Educators (AMTE) (Member)
2017-Present National Council of Teachers of Mathematics (NCTM) (Member)
2017-Present Psychology of Mathematics Education- North America (PME-NA) (Member)
2017-Present American Educational Research Association (AERA) (Member)

TEACHING LICENSES

2013-Present Science grades 5-8, *Missouri*
2012-Present Mathematics grades 5-12, *Missouri*
2012-Present Mathematics grades 5-12, *Minnesota*

STATISTICAL SOFTWARE EXPERIENCE

MPLUS, SPSS, Dedoose

LEARNING MANGAGEMENT SYSTEM EXPERIENCE

Canvas, Blackboard, Moodle

PROFESSIONAL REFERENCES

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