



**Kari N.  
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**Curriculum Vitae**  
**September 2018**

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**EDUCATION**

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- 2020      **Ph.D. Mathematics Education (expected)**  
School of Education  
Iowa State University, Ames, IA  
*Committee:* Mollie Appelgate (Chair), Christa Jackson, Kristina Tank  
Connie Hargrave, and Todd Abraham  
*Graduate Certificate:* Graduate Student Teaching (expected)  
Preparing Future Faculty Scholar (expected)
- 2013      **M.Ed. Learning, Teaching, and Curriculum**  
College of Education  
University of Missouri, Columbia, MO  
*Specialization:* Mathematics Education
- 2012      **B.A. Mathematics Education**  
**B.A. Psychology**  
Department of Mathematics and Computer Science  
Department of Psychology  
Concordia College, Moorhead, MN  
*Distinction:* Summa Cum Laude

**RESEARCH**

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**Research Interests**

Teaching and learning of mathematics, elementary STEM education, mathematics and STEM teacher education, mathematics and STEM curriculum

**Grant Funded Research Projects**

- May 2017 -      *Design environment for Educator – Student Collaboration Allowing Real-Time*  
Jun. 2019      *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.**

Dec. 2017 - *Promoting Student Engagement and Productive Groups Dynamics in Team-Based*  
May 2019 *Learning Calculus Courses.* Miller Faculty Fellowship. Award amount: \$14,986.  
Co-PIs: Amanda Baker, Ph.D. and Heather Bolles, Ph.D. **Role: Research Assistant.**

Apr. 2017 - *Effectively Supporting all Students to be Successful in Algebra (ES<sup>3</sup>A).* 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: Crista 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

- 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 (In Review)
- 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)

## PUBLICATIONS

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### Peer-reviewed Journal Manuscripts – Published

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 – Accepted

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

### Peer-reviewed Article Length Proceedings - Published

Appelgate, M., Jackson, C., **Jurgenson, K.**, & Delaney, A. (2018). Using text messages to connect linguistically diverse families with their child's mathematics classroom learning. Proceedings to be included 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. Proceedings to be included 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 Review

**Jurgenson, K.** & Delaney, A. (In Review). *The Three Little Engineers*. Teaching Children Mathematics.

## Manuscripts in Preparation

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

**Jurgenson, K.** & Appelgate, M. (In Progress). Adapting Instruction to Align with Three Dimensional Learning in the NGSS.

**Jurgenson, K.** & Appelgate, M. (In Progress). The Evolution of Scientific Inquiry in K-12 Classrooms.

**Jurgenson, K.** & Delaney, A. (In Progress). Building Bridges Between Literacy and STEM.

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

## SCHOLARLY CONFERENCE PARTICIPATION

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### Paper Presentations

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, California.

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: South Carolina University.

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, Texas.

## Poster Presentations

Appelgate, M., Jackson, C., **Jurgenson, K.**, Delaney, A. (October 2018). *Using Mathematically focused Text Messages to Communicate with Parents*. Interdepartmental Research Showcase, Ames, IA: Iowa State University

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: South Carolina University.

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.

## PROFESSIONAL EXPERIENCE

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2017-2018

### Instructor

*Iowa State University, School of Education*

CI448 Teaching Children Mathematics (Elementary mathematics methods)

- Supported preservice teachers in content and pedagogical content knowledge of elementary mathematics concepts
- Promoted the value of rigorous mathematical tasks and engaging students in mathematical discourse
- Observed preservice teachers teaching lessons they designed based on student mathematical thinking and reasoning

2016-Present

### Research Assistant

*Iowa State University, School of Education*

- Helped design integrated STEM units for grades 3-8

- Interviewed teachers about their perceptions of STEM education and reflection on implementing a STEM unit
- Scored and analyzed various quantitative measures of students' content knowledge, self-efficacy, and STEM literacy
- Organized and managed hard copy and electronic data
- Conducted cognitive interviews with K-5 students

2013-2016

**Mathematics Teacher**

*Columbia Independent School, Columbia, MO*

- Taught Math 6, Algebra I, Algebra II, and AP Statistics
- Implemented iPad textbooks in the classroom
- Took on leadership roles to revise curriculum, choose textbooks, organize the school's master schedule, and offer professional development for colleagues about 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 effects of cooperative learning in the classroom

**OUTREACH ACTIVITIES**

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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-  
Present *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-  
Present *Effectively Supporting all Students to Be Successful in Algebra professional development.* Jackson, C., Appelgate, M., Yi, 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 4<sup>th</sup> and 5<sup>th</sup> 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 4<sup>th</sup> and 5<sup>th</sup> 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 4<sup>th</sup> grade teachers implementing the integrated STEM curriculum.

## SERVICE

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- 2018-2019 Search committee member for mathematics and science education lecturer, *Iowa State University School of Education*
- 2018-2019 Graduate Student Advisory Council member, *Iowa State University*
- 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-Present Doctoral Learning Community Co-organizer, *Iowa State University*
- 2017-Present 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

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- Spring 2018 School of Education Research Scholarship, *Iowa State University School of*

*Education*

- Spring 2018 Edgar A. and Evelyn Benzler Tanruther 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**

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

**TEACHING LICENSES**

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

**STATISTICAL SOFTWARE EXPERIENCE**

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- MPLUS
- SPSS
- NVivo

**LEARNING MANGAGEMENT SYSTEM EXPERIENCE**

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- Canvas
- Blackboard
- Moodle