KIMBERLY BECK

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EDUCATION

Ph.D. in Education   **Expected 2024**
    Specialization: Curriculum & Instruction
    Concentration: Mathematics Education & Leadership
    Utah State University, Logan UT

M.Ed. in Secondary Education   **2012**
    Specialization: Curriculum & Instruction
    Concentration: Mathematics Education & Leadership
    Utah State University, Logan UT
    Teaching Certificate: Secondary Mathematics Level III

B.S. in Mathematics   **2020**
    Weber State University, Ogden UT

B.S. in Architectural Engineering   **2005**
    Emphasis: Structural Systems
    University of Wyoming, Laramie WY

PROFESSIONAL HISTORY

Graduate Research and Teaching Assistant   **2021 - present**
    School of Teacher Education and Leadership, Utah State University
    Research assistant on NSF-funded project on mathematics and computer science integration in elementary classrooms. Main responsibilities include communicating with teachers, planning and participating in design meetings, attending and contributing to research team meetings, literature reviews, data collection, and qualitative data coding and analysis.
    Teaching assistant for undergraduate elementary education mathematics methods courses. Main responsibilities include designing and implementing course materials and activities, demonstrating inquiry-based teaching strategies, and supervising and mentoring practicum students.

Assistant Professor, General Education/Mathematics   **2020 - present**
    Nightingale College, Salt Lake City UT
    Teacher of mathematics courses for undergraduate nursing students. Main responsibilities include designing course materials for and teaching College Algebra and Intro to Statistics online courses, communicating frequently with students, and maintaining regular office and tutoring hours, with a teaching load of twelve credit hours per semester.

Instructor, Mathematics   **2019 - 2020**
    Johns Hopkins Center for Talented Youth
    Supervised progress of online students in accelerated gifted program. Communicated regularly with students and parents and held online office hours to provide additional guidance to students in Honors Algebra II course.

Adjunct Instructor, Mathematics   **2015 - 2020**
    Weber State University, Ogden UT

Taught quantitative literacy mathematics courses, including both face-to-face and online formats. Worked closely with students to bolster mathematics skills and encourage progression toward a college degree. Maintained a collaborative learning environment where group work and other innovative teaching principles were employed regularly.

Instructor, High School Mathematics   **2009 - 2015**

Academy at Solstice, Layton UT
High school mathematics instructor at private residential treatment facility for at-risk teenaged girls. Designed curriculum for all mathematics courses taught at the academy. Worked closely with students' therapists and doctors to create an effective learning environment for at-risk youth.

Civil Engineer, Water Resources   **2005 - 2009**

Layton City Corporation, Layton UT
Designed and managed $7 million West Gentile Street Reconstruction Project, acted as Layton City Water Conservation Coordinator, directed design and construction of new wells and tanks, oversaw water sampling and safety programs, performed water modeling for new developments and to solve existing system deficiencies, managed City maps and database of infrastructure.

PUBLICATIONS

Journal Articles (Refereed)

Beck, K.E., Shumway, J.F., Shehzad, U., Clarke-Midura, J., & Recker, M. (2023). *Facilitating mathematics and computer science connections: A cross-curricular approach.* [Under review]. Utah State University.

Book Review (Non-Refereed)

Beck, K. (2020). Achieving equity in the mathematics classroom [Review of the book *The impact of identity in K-8 mathematics: Rethinking equity-based practices*, by Aguirre et al.]. *Utah Mathematics Teacher, 13*, 100-104. www.utahctm.com/journal

UNIVERSITY TEACHING

Utah State University, Logan, Utah (2023-present)

ELED 4062: Teaching Elementary School Mathematics II: Number, Operations, and Algebraic Reasoning
Students develop pedagogical content knowledge in number, operations, and algebraic reasoning for teaching grades preschool to grade six, including methods for designing and implementing mathematics instruction, assessment, remediation, and intervention.
Face-to-face on campus: Spring 2023, Fall 2023

Nightingale College, Salt Lake City, Utah (2020-present)

MAT100: College Algebra
This course provides knowledge of Intermediate Algebra and its applications. Emphasis is placed on algebraic techniques with polynomials, rational expressions, exponents, radical expressions and equations, factoring, linear and quadratic equations, inequalities, logarithmic and exponential functions, and solving systems of two or more linear equations.
Online: Spring 2021, Summer 2021, Fall 2021, Spring 2022, Summer 2022, Fall 2022, Spring 2023, Fall 2023

MAT220: Introduction to Statistics
> In this course, learners will look at the properties behind the basic concepts of probability and statistics and focus on applications of statistical knowledge. Learners will learn about how statistics and probability work together. The subject of statistics involves the study of methods for collecting, summarizing, and interpreting data. Learners will learn how to understand the basics of drawing statistical conclusions. This course will begin with descriptive statistics and the foundation of statistics, move on to probability and random distributions, the latter of which enables statisticians to work with several aspects of random events and their applications. Finally, learners will examine a number of ways to investigate the relationships between various characteristics of data.
> Online: Spring 2021, Summer 2021, Fall 2021

Weber State University, Ogden, Utah (2015-2020)

MATH 0950: Pre-Algebra
> An introduction to mathematical literacy including number sense, algebraic thinking, proportional reasoning, and math learning strategies. Topics include properties of and operations with whole numbers, integers, decimals, fractions and percent; introductory operations and applications with exponents, algebraic expressions, linear equations, and basic geometry.
> Face-to-face on campus: Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017

MATH 0970: Pathway to Contemporary Mathematics
> This course integrates geometry, numeracy, proportional reasoning, algebraic reasoning, and topics in statistics and functions (linear, quadratic, rational, radical, exponential and logarithmic) using modeling, problem solving, and critical thinking.
> Face-to-face on campus: Summer 2019, Spring 2020

MATH 0990: Beginning Algebra
> An introduction to algebraic literacy using properties of real numbers, solving linear equations and inequalities, geometry, ratio and proportion, applications, graphing, solving linear systems, exponents, scientific notation, polynomials, factoring, and solving quadratic equations. Learning strategies for mathematics success, including development of a mathematical growth mindset are integrated into the course.
> Face-to-face on campus: Fall 2015, Spring 2016, Fall 2016, Spring 2018 (2), Summer 2018

MATH 1010: Intermediate Algebra
> Inequalities (including absolute value and systems), systems of equations, applications, functions (inverse, exponential, and logarithmic), variation, factoring, rational expressions, radicals, complex numbers, quadratic equations, parabolas, circles, quadratic formula, formulas, properties and applications of logarithms.
> Face-to-face on campus: Fall 2019 (2)
> Online: Fall 2017

MATH 1030: Contemporary Mathematics
> Topics from mathematics which convey to the student the beauty and utility of mathematics, and which illustrate its application to modern society. Topics include geometry, statistics, probability, and growth and form.
> Face-to-face on campus: Summer 2016, Fall 2016, Spring 2017, Summer 2017, Fall 2017, Summer 2018, Fall 2018, Fall 2019

CEPR 1494: Math 1030/1040 Prep
> This abbreviated review course is for students that previously met the entrance requirements for Math 1030/1040 but the prerequisite has since expired.
> Face-to-face on campus: Summer 2018, Spring 2019, Summer 2019

Guest Lectures

Guest lecture, ELED 4062 Teaching Elementary School Mathematics II (2022, Feb). For Dr. Jessica Shumway, Utah State University.

Guest speaker, TEAL 7551 Mathematics Education Research Foundations (2022, Dec). For Dr. Jessica Shumway, Utah State University.

GRANT-FUNDED RESEARCH PROJECTS

Collaborative Research: Supporting Rural Paraprofessional Educators and their Students with Computer Science Professional Learning and Expansively Framed Curriculum. (2021-current). My role: Graduate Research Assistant funded by National Science Foundation grant. Working on collaborative team to adapt existing fifth-grade computer science and mathematics curriculum to an integrated model. Assisting in creation of professional development for rural paraprofessionals and teachers. (with Principal Investigator, Dr. Mimi Recker, Utah State University, and Co-Investigators, Drs. Jody Clarke-Midura, Utah State University, Jessica Shumway, Utah State University, and Victor Lee, Stanford University.

AWARDS AND PROFESSIONAL RECOGNITION

Utah State University Kaysville Campus General Scholarship, 2020

University of Wyoming Trustee's Scholarship (full academic scholarship awarded to top 1% of Wyoming high school graduates), 2001-2005

Riverton High School Class Valedictorian, 2001

OUTREACH FOR PUBLIC SCHOOLS

Cache County School District, Logan, Utah. *Cache Code Math PD and Curriculum Planning*. (2021, February, June, August, and December; 2022, March, June, August, October, and December). Professional development and curriculum planning sessions for up to 10 teachers and two administrators as part of the Computer Science for Paraprofessionals NSF-funded research project. Included Scratch programming instruction, model lesson teaching, and curriculum co-planning (with Drs. Mimi Recker, Jessica Shumway, Jody Clarke-Midura, and Victor Lee).

PROFESSIONAL MEMBERSHIPS

Mathematical Association of America, 2021-present

National Council of Teachers of Mathematics, 2021-present

Special Interest Group Computer Science Education, 2021-2022

YouCubed, 2020-present

NATIONAL PRESENTATIONS
American Educational Research Association (AERA)

Shehzad, U., Clarke-Midura, J., **Beck, K.E.**, Shumway, J.F., & Recker, M. (2023, April). *Rethinking Integrated Computer Science Instruction: A Cross-Context and Expansive Approach in Elementary Classrooms.* Paper Presentation, American Educational Research Association (AERA) Annual Meeting, Chicago, Illinois.

International Society of the Learning Sciences (ISLS)

Shehzad, U., Clarke-Midura, J., **Beck, K.E,** Shumway, J., & Recker, M. (2023, June). Integrated, Elementary-Level Computer Science: A Cross Contextual and Expansive Approach. *In Building Knowledge and Sustaining Our Community: The International Conference of the Learning Sciences (ICLS).* Montreal QC Canada: International Society of the Learning Sciences.

National Council of Teachers of Mathematics (NCTM)

Beck, K.E., & Shumway, J.F. (2023, April). *Geometry and Coding: Introducing an Integrated Mathematics-Computer Science Unit.* Workshop Presentation, National Council of Teachers of Mathematics (NCTM) Virtual Conference, online.

Beck, K.E., & Shumway, J.F. (2022, September). *Applying Expansive Framing to an Integrated Mathematics-Computer Science Unit.* Paper Presentation, National Council of Teachers of Mathematics (NCTM) Research Conference, Los Angeles, California.

STATE AND REGIONAL PRESENTATIONS

Utah Council of Teachers of Mathematics (UCTM)

Beck, K.E., Shumway, J.F., & Clarke-Midura, J. (2022, February). *Mathematics from Scratch: Learning with Coding.* Workshop presentation, Utah Council of Teachers of Mathematics (UCTM) conference, Kaysville, Utah.

Welch Bond, L.E., **Beck, K.E.**, Basham, M., Shumway, J.F. (2023, March). *Math and Coding Connections in Elementary.* Workshop presentation, Utah Council of Teachers of Mathematics (UCTM) conference, Provo, Utah.

Utah State University Student Research Showcase

Beck, K.E. (2023, March). *The Valentine's Tea: A Cache Valley Rite of Passage.* Paper presentation, Student Research Showcase, Logan, Utah.