My research focus is on the quality and structure of mathematics curriculum as found in textbooks, lesson plans, and enacted in classrooms. It builds on existing theory (e.g., Dewey) on the meaning and purpose of curriculum in general, and mathematics curriculum in particular. Drawing from the robust theoretical foundations of literary theory, my work interprets mathematics curriculum as mathematical stories with mathematical characters, action, settings, and plots. This framing views mathematical sequences as a form of art with both aesthetic and logical dimensions in order to enable the analysis of its opportunities to increase student interest in mathematics, such as inspiring student curiosity and their desire to learn. My analysis of curricular materials and lessons found in mathematics classrooms offers insight into curriculum design, such as learning how certain mathematical sequences enable surprise or suspense for students. With the recognition of features of mathematical stories that hold wide appeal by students, future research will (a) test whether certain mathematical sequences can generate more interest and participation by students and (b) develop interventions for practicing and prospective teachers to support the creation and implementation of more coherent and interesting mathematical stories.

Biographical Sketch

Leslie Dietiker, PhD, is an Assistant Professor of Mathematics Education at Boston University’s School of Education where she is part of the Arts and Science Education cluster. Dr. Dietiker is a member of the American Educational Research Association (AERA) and the National Council of Teachers of Mathematics (NCTM). She is also the lead author of several math textbooks from grades 6 - 12 that focus on metacognitive development, conceptual development, and problem solving. These textbooks, such as Algebra Connections, are published by a non-profit called CPM Educational Program. She also serves as CPM’s Director of Curriculum and on its Board of Directors. Publications related to this work can be solicited directly from Dr. Dietiker at dietiker@bu.edu or by visiting her website at www.people.bu.edu/dietiker.