

# 2016

## Call for Chapters

### Annual Perspectives in Mathematics Education

## Mathematical Modeling and Modeling Mathematics

*The 2016 Annual Perspectives in Mathematics Education (APME) volume: Mathematical Modeling and Modeling Mathematics* will consist of chapters that represent current thinking and promising practices devoted to effectively incorporating models and mathematical modeling in the teaching and learning of mathematics K–12. The focus on mathematical modeling in the Common Core State Standards for Mathematics (CCSSM) is of particular interest because it had not been given explicit and detailed attention in previous U.S. standards documents for school mathematics. Additionally, mathematical modeling holds a privileged place in the CCSSM as it is the only topic that is both a conceptual category and a Standard for Mathematical Practice.

In light of the heightened attention to using models and mathematical modeling in school mathematics, both nationally and internationally, this volume will examine the benefits and challenges of implementing modeling through multiple lenses—clarifying constructs; task and curriculum design considerations, especially in a digital world; effective instructional practices, including elaborating equitable and culturally relevant pedagogies; student learning; assessment of modeling experiences; and supporting teachers' learning.

Chapter manuscripts should make strong links between research and practice and highlight important issues as they relate to implementing models and mathematical modeling in the classroom. Each chapter should appeal to a broad audience, which may include mathematics educators in a variety of capacities, such as curriculum designers/developers, assessment developers, teachers, teacher leaders, professional development leaders, mathematics teacher educators, and researchers.

See the full call for chapters at [www.nctm.org/APMEcalls](http://www.nctm.org/APMEcalls).

The following are intended as suggestions, not limitations, for potential authors.

#### Sample of Possible Topics

- ◆ Describe and discuss the terms and constructs associated with models and modeling such as “model,” “modeling,” “building a model,” and “using a model.” How are these terms used similarly and differently across grades, contexts, and strands (e.g., algebra, geometry, statistics)? What role do models and modeling serve in teaching and learning and/or in mathematics as a discipline?
- ◆ How can existing curriculum be used or adapted to support the teaching of mathematical modeling?
- ◆ What innovative opportunities for teaching, learning, and engaging are created by new technologies (e.g., mobile technologies, GPS-enabled technologies)? By emerging deeply digital instructional materials?
- ◆ Describe and illustrate how the practice of mathematical modeling can support problem-based learning that enables students to develop important mathematics.
- ◆ What interdisciplinary approaches are effective for teaching and learning mathematical modeling, and what are their distinguishing features?
- ◆ Discuss ways models, modeling contexts, and modeling can be used as part of equitable and/or culturally relevant pedagogies.
- ◆ Describe how students' work with models and modeling can be assessed (formatively and/or summatively) or used as a tool for making students' thinking more visible as part of assessment.
- ◆ What does research and/or practice suggest about the mathematical knowledge for teaching (MKT) that supports effective teaching of mathematical modeling or modeling mathematics at particular grades or grade bands?

#### Details for Submission

Prospective authors must fill out an Intention to Submit form, found at [www.nctm.org/APMEcalls](http://www.nctm.org/APMEcalls), and send it to [Christian.Hirsch@wmich.edu](mailto:Christian.Hirsch@wmich.edu) by March 1, 2015.

The full chapter manuscript is to be submitted electronically by **May 1, 2015**, to the same email address. Details regarding submission requirements will be sent once your Intention to Submit form is received. Late or partial manuscripts cannot be considered. All chapter submissions will be blind peer-reviewed, and authors will receive feedback within 8 weeks.



NATIONAL COUNCIL OF  
TEACHERS OF MATHEMATICS