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Grand challenges and opportunities in mathematics education research.

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Summary: Mathematics education researchers seek answers to important questions that will ultimately result in the enhancement of mathematics teaching, learning, curriculum, and assessment, working toward ensuring that all students attain mathematics proficiency and increasing the numbers of students from all racial, ethnic, gender, and socioeconomic groups who attain the highest levels of mathematics achievement. During the 2014 National Council of Teachers of Mathematics (NCTM) Research Conference, representatives from the NCTM Research Committee and the Special Interest Group for Research in Mathematics Education (SIG/RME) Executive Board met with representatives from the Directorate for Education and Human Resources at the National Science Foundation (NSF) to have an informal conversation about research in mathematics education. During that conversation, the authors learned that many fields have created lists of Grand Challenges, which are available to funding agencies as they prioritize funding efforts in those disciplines. That stimulating discussion was the impetus for this article in which the authors intend to begin a dialogue among mathematics education researchers and other stakeholders regarding the Grand Challenges and opportunities of this field. They begin with a description of the history of Grand Challenges and how they have provided a stimulus for advances in other fields, then next describe the results of a survey that the Research Committee distributed via multiple electronic mailing lists. In this survey, was solicited feedback about the characteristics of Grand Challenges for mathematics education as well as the types of challenges that educators think we currently face. Drawing on the experiences of other fields, we conclude with a proposed process for generating Grand Challenges for mathematics education. (ERIC)

Classification: D20

Keywords: research in mathematics education; barriers; financial support; researchers; stakeholders; research needs; teacher surveys; mathematics teachers; mathematics achievement

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