What we do

We support local, national, and international projects in mathematics education, from kindergarten through college, that pay attention to both the mathematics and the students, have practical application to current needs, build on existing knowledge, and are grounded in the work of teachers.

The need

Mathematics is crucial for innovation in science, technology and engineering; competitiveness in a global workforce; and informed participation in democratic government. Three decades of reports, from the Department of Education’s “A Nation at Risk” (1983) to the National Academies’ “Rising Above the Gathering Storm” (2006) offer ample evidence for the need to improve mathematics education in the United States.

Our approach: collaboration

The problems of mathematics education cannot be solved by one group alone. Taking our cue from pioneering collaborations of recent years, we include participants from communities that are sometimes worlds apart: university mathematics departments, colleges of education, school systems, government agencies, the business sector, and commercial and non-profit education organizations. We engage mathematicians, statisticians, scientists, education faculty, teachers, parents, business people, and policy makers in collaborative work in which each group plays a key role and for which each group takes responsibility.

The time is ripe ...

... for a permanent, high-level institute that will build capacity for collaboration, store institutional knowledge about collaboration, and influence professional culture towards collaboration on a critical concern of our time: the mathematical education of our future scientists, engineers, workers, citizens and leaders.
PROGRAMS

Arizona Teacher Initiative
Developing a master’s degree for middle school teachers with a $4.8M National Science Foundation Math Science Partnership grant.

Knowledge of Mathematics for Teaching
Conducting research into the mathematical knowledge necessary for teaching secondary school.

Making Connections
Developing models for collaboration between mathematicians, mathematics educators, and teachers.

Math Circles
Promoting interactions between secondary school students and mathematically sophisticated individuals through weekly problem-solving sessions.

Mathematicians in Mathematics Education
Assembling and maintaining a network of mathematicians qualified, by interest and experience, to participate in educational work.

Events

<table>
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<tr>
<th>Date</th>
<th>Event Description</th>
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<tr>
<td>Oct 12-13</td>
<td>Planning retreats for mathematicians and educators</td>
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<tr>
<td>Nov 3-4, 2006</td>
<td>Courses for Teacher Education</td>
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<td>Mar 1-4, 2007</td>
<td>Learning Technologies and Mathematics Middle East Conference, Sultan Qaboos University, Oman</td>
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<td>Mar 31–Apr 1, 2007</td>
<td>MAA PREP Workshop on Revitalizing College Algebra</td>
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<td>Jun 18–21, 2007</td>
<td>Making Connections workshop</td>
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<td>Jun 28–30, 2007</td>
<td>Planning retreat for business people and policy makers</td>
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<td>Feb 14–16, 2008</td>
<td>Elementary Teacher Preparation in Mathematics</td>
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<tr>
<td>Feb 28–Mar 1, 2008</td>
<td>Secondary Teacher Preparation in Mathematics</td>
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<tr>
<td>Mar 20–22, 2008</td>
<td>Mathematicians in Mathematics Education</td>
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Thematics

2007-2008: Mathematics courses for teachers
Possible projects include:

• study and dissemination of models of teacher preparation and professional development in mathematics,
• design of graduate programs for teachers, taking a fresh approach to teacher knowledge by bringing teachers, mathematicians, and mathematics educators to do mathematics together with a focus on topics from the school curriculum,
• creation of materials to address challenging topic areas for elementary and middle school mathematics teachers.

2008-2009: Analysis of curriculum materials
Joint analysis of curriculum materials, from both this and other countries, provides for a common reference point among different points of view, and affords opportunities to discuss longitudinal concerns in curriculum and assessment. Possible projects include:

• study of topics in the mathematics curriculum, producing essays that explore key features of the various treatments of these topics, and provide justification for key topics,
• development of a library of scanned curricula on a password protected web site, suitable for collaborative examination,
• analysis of lesson plans and classroom teaching (live or on video) in order to examine students’ opportunity to grapple meaningfully with powerful mathematical ideas.

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Our logo is a proof of a famous theorem—see if you can figure it out, or go to our website and click on it.