

Making Mathematical Connections:

Mathematics Knowledge for Teaching in Grades 4-8

Mathematics and Science Partnerships (ESEA Title II Part B)

The reauthorization of the Elementary and Secondary Schools Act in January of 2002 also known as the No Child Left Behind Act of 2001 (NCLB) introduced the Improving Teacher Quality Grant Programs (Title II). These programs encourage scientifically based professional development as a means for improving student academic performance.

The Mathematics and Science Partnership Program discretionary grant is intended to increase the academic achievement of students in mathematics and science by enhancing the content knowledge and teaching skills of classroom teachers. Partnerships between high-need school districts and the science, technology, engineering, and mathematics (STEM) faculty in institutions of higher education are at the core of these improvement efforts. Other partners may include state education agencies, public charter schools or other public schools, businesses, and nonprofit or for-profit organizations concerned with mathematics and science education.

Notes:

There were only three grants funded out of 18 applications in Wisconsin in the 2009-2010 cycle.

The grant award for this project is \$303,375 for the first two years. Funding for the third year is subject to the performance of the project during years one and two.

Making Mathematical Connections is a partnership between UW Oshkosh and seven Northeastern Wisconsin school districts to provide intensive professional development in mathematics content for mathematics teachers in grades 4 through 8, supported by a Mathematics and Science Partnerships Program grant through the US Department of Education.

The goals of this project are to improve student achievement in mathematics through a deepening teachers' mathematics knowledge for teaching. Project activities will focus on mathematical thinking, conceptual understanding of fundamental concepts in the curricula, the relationships between these concepts, and multiple representations and strategies for solving problems. The project will prepare teachers to actively engage their students in solving problems with a high level of cognitive demand, press their students for conceptual understanding, and prepare teachers to evaluate and respond to student reasoning and multiple ways of thinking.

Project Objectives:

- Increase student achievement in mathematics
- Increase teachers' mathematics content knowledge for teaching
- Shift teachers attitudes and beliefs about mathematics and what it means to know and do mathematics
- Change teachers' instructional practices to focus more on mathematical reasoning
- Increase teacher professional development, collaboration and discussion of mathematics and mathematics teaching

Project Activities:

- Two-week intensive summer workshop on mathematics content
- Professional development seminars during the academic year on lesson implementation and mathematics education research
- Content-Focused Coaching. The mathematics faculty will visit classrooms to work with the participants through mathematics content-focused coaching

Mathematics Content Focus:

- Number and Algebraic Thinking (Year One)
- Geometry and Measurement (Year Two)
- Probability and Statistics (Year Three)

District Partners: Clintonville, Manawa, Menasha, Neenah, New London, North Fond du Lac, and Wildrose.

IHE Partner: University of Wisconsin Oshkosh

Project Management Team: Dr. Eric Kuennen (Project Director), Dr. Jennifer Szydlak, Dr. John Beam

