



LEARNING NETWORK CONFERENCE



2007 Program Evaluation

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
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Mathematics & Science Partnerships



2005-2008

Blair-Taylor

Kenosha

Laona Mathematics

Laona Science

Milwaukee Public Schools

Nekoosa

Racine

Superior

2006-2009

Green Bay

Madison Mathematics

Madison Science

Pecatonica

Rio



Wisconsin Department of Public Instruction
Madison, Wisconsin

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Welcome

Wisconsin's Mathematics and Science Partnerships Initiative



Teachers make a difference in the lives of their students, and those who are highly qualified are better able to create an atmosphere that challenges, inspires, and nurtures students. In partnerships throughout our state, K-12 teachers, students, parents, and higher education staff are working to increase the achievement of all students and close the achievement gap.

Wisconsin's Mathematics and Science Partnership (MSP) Initiative provides teachers with tools to enhance their teaching skills and deepen their subject-area knowledge, which can improve classroom outcomes for their students. Each initiative addresses content rigor in mathematics and science. Teachers gain new content knowledge by working with leading university professors from around the state who are involved in cutting-edge mathematics and science research. Educators enrich and enhance their teaching skills through interactions with their peers, experts, and university professors.

I invite you to read about these exciting Mathematics and Science Partnership Initiatives. This publication includes an activity summary and contact information for each initiative. The information will help you and your school become involved in one of the MSP initiatives or find out how your school can be a part of future initiatives.

Elizabeth Burmaster
State Superintendent

Agenda



Mathematics & Science Partnerships Meeting
Tuesday, April 24, 2007
Chula Vista Resort
Wisconsin Dells, Wisconsin

<i>7:30-8:30 a.m.</i>	Breakfast
<i>8:30-8:35 a.m.</i>	Introduction
<i>8:35-9:00 a.m.</i>	Welcome, Mike Thompson (DPI)
<i>9:00-10:00 a.m.</i>	Evaluation Design, Norman Webb
<i>10:00-10:15 a.m.</i>	Break
<i>10:15-11:30 a.m.</i>	Panel (Title B and Title A)
<i>11:30-12:00 p.m.</i>	PK-16 Updates
<i>12:00-1:00 p.m.</i>	Lunch and Networking Time
<i>1:00-2:00 p.m.</i>	Project Evaluation—Margie Wilsman (WCER)
<i>2:00-2:15 p.m.</i>	Break
<i>2:15-2:45 p.m.</i>	Title II, Part B—RFP & Updates
<i>2:45-3:00 p.m.</i>	Title II, Part A—Updates
<i>3:00-3:15 p.m.</i>	Reflection
<i>3:15-3:30 p.m.</i>	Evaluation and Adjourn

Introduction

With the reauthorization of the Elementary and Secondary Schools Act in January of 2002 (also known as the No Child Left Behind Act, NCLB) introduced the Improving Teacher Quality Grant Programs (Title IIB). These programs encourage scientifically based professional development as a means for improving student academic performance in all 50 states.

Each state's department of education is responsible for administering the program on a competitive basis. The program is a formula grant program, with each state's funding determined by student population and poverty rates. The program is commonly known as the Mathematics and Science Partnership Program (MSP).

Wisconsin's MSP *strives to improve teacher quality* through partnerships between state education agencies, institutions of higher education, local and regional education agencies, and school districts; And *to increase student academic achievement in mathematics and science*. The program supports partnerships between one or more of Wisconsin's high-needs school districts* and at least one institution of higher education department of science, mathematics, and/or engineering.

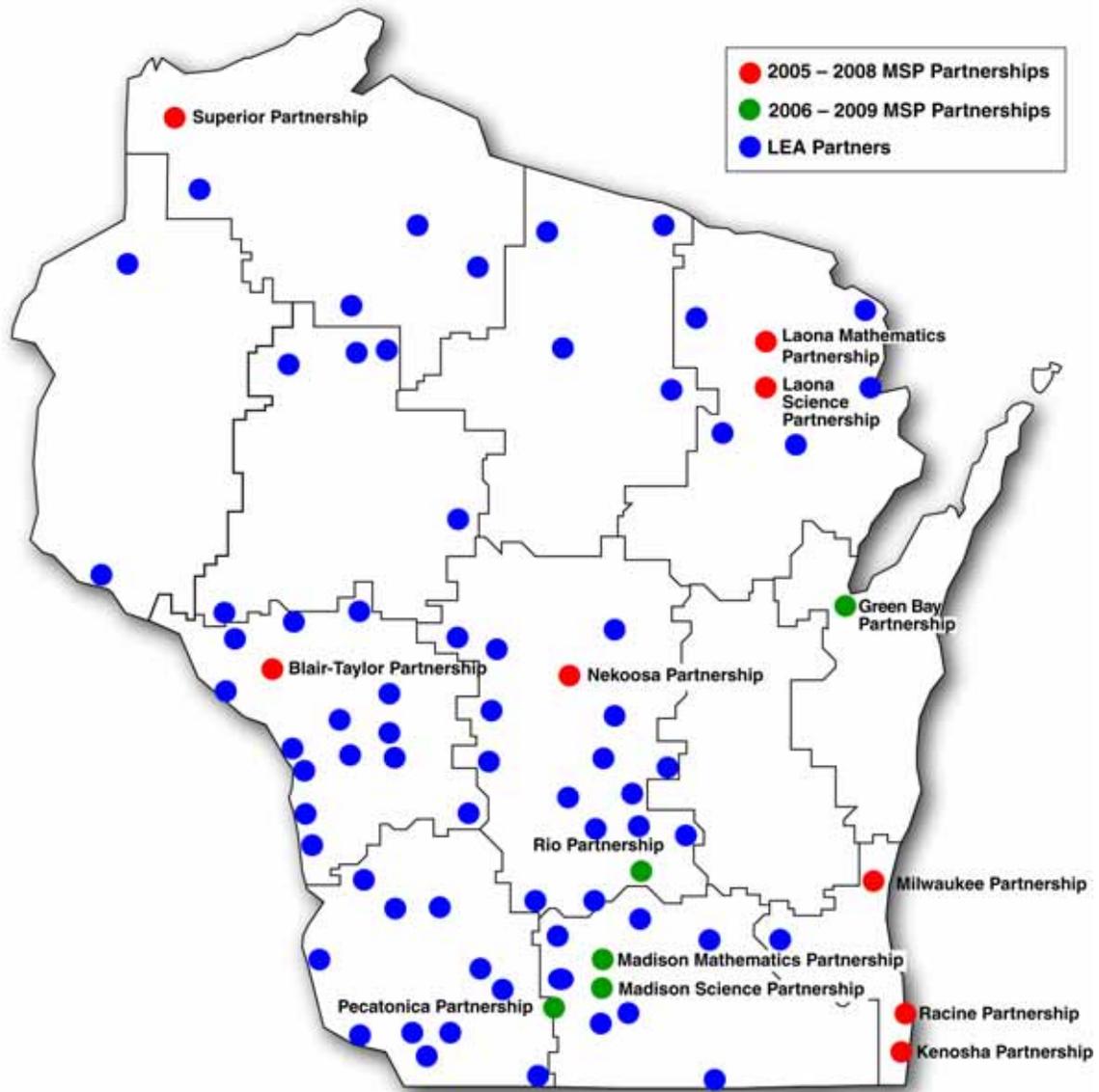
Partnerships between these high-need school districts and the science, technology, engineering, and mathematics (STEM) faculty in institutions of higher education are at the core of each MSP. Each individual partnership focuses on increasing and enhancing the content knowledge and teaching skills of classroom teachers of mathematics and science; are typically for two to three years in duration, and includes face-to-face instruction and a continual electronic dialog among participants.

*A high need Local Education Agency (LEA) is any district where mathematics or science student proficiency scores do not exceed 65 percent, based on disaggregated Wisconsin Knowledge & Concept Examination (WKCE) scores, and where there is no currently active Title II, Part B grant, in the same content area, and one of the following:

1. At least 10 percent of the student population is from families with income below the poverty line as identified by the Census 2004, or
2. Schools/districts having Rural Education Achievement Program (REAP) or meeting local codes of 6, 7, or 8, or
3. Not achieving Adequate Yearly Progress (AYP) in mathematics based on 2005/06 data.

MSP Program Locations

Mathematics and Science Partnership Program



Please refer to DPI News Release in the back of this book for complete listing of partnership districts.

Presenters

Welcome

Mike Thompson

8:35 a.m. - 9:00 a.m.

Upper Dells Ballroom

Mike Thompson currently serves as Executive Assistant to State Superintendent Elizabeth Burmaster. Prior to his current role, Mike served as the Department's Federal Policy Advisor and has assisted in the coordination and implementation of ESEA since it was signed into law on January 8, 2002. Mike has a doctorate in Education Administration and has taught for ten years in Wisconsin public schools. He has served at the state level as an education consultant, director of student services, and assistant state superintendent.

Evaluation Design

Norman Webb

9:00 a.m.—10:00 a.m.

Upper Dells Ballroom

Norman L. Webb is a senior research scientist emeritus for the Wisconsin Center for Education Research of the University of Wisconsin-Madison. His current principle area of research is the evaluation, assessment, and alignment. He served as the principal investigator on a number of projects including the Adding Value project supporting the evaluation of NSF's Mathematics Science Partnerships, the Study of Systemic Reform in Milwaukee Public Schools, and the Systemic Reform Study Team of the National Institute for Sciences. He is the leader of the evaluation team for the Center for Integrating Teaching and Learning and an evaluator for SCALE. He has directed evaluations of curriculum and professional development projects. His academic training was in mathematics and mathematics education. He chaired the evaluation working group, one of four groups who wrote the Curriculum and Evaluation Standards for School Mathematics for the National Council of Teachers of Mathematics. He co-authored with Thomas Romberg a book entitled, *Reforming mathematics education in America's cities*. He edited the NCTM 1993 yearbook on classroom assessment and wrote a chapter, "Assessment of students' knowledge of mathematics: Steps toward a theory," for the *Handbook of Research on Mathematics Teaching and Learning*.

Presenters

Project Evaluation

Marge Wilsman

1:00 p.m. -2:00 p.m.

Upper Dells Ballroom

Margie is employed at the Wisconsin Center for Education Research (WCER) as an Associate Researcher with the National Science Foundation (NSF) *STAAR Project—Students Transitioning from Arithmetic to Algebraic Reasoning*. She teaches the graduate course—Students Developing and Understanding Algebraic Thinking, for middle grades mathematics and special education teachers. She has been conducting research on “using contrasting case activities” to deepen teacher understanding of algebraic thinking, student learning, and teaching. She also participates in the NSF funded grant—*Engaged Learning in Online Communities*, where she works in both science and mathematics to develop and conduct research in online teacher learning. Margie currently has a 50 percent appointment with WCER that allows her to serve as an evaluator on state and federal grants.

Currently she is the evaluator for two state programs: the University of Eau Claire *Enhancing Middle School Mathematics in High Need School Districts Project* funded through the University of Wisconsin ESEA Improving Teacher Quality Higher Education Professional Development Program and the Wisconsin Academy Staff Development Initiative (WASDI) *Laona Mathematics Partnership* funded by the Wisconsin Department of Public (DPI) Instruction ESEA Title IIB Mathematics and Science Partnerships (MSP). Last year she served as the evaluator on two federally funded programs: the WASDI *Team Leadership in Mathematics and Science* funded by the U.S. Department of Education and the University of Wisconsin-Milwaukee *The Milwaukee Math Partnership (MMP)*, a National Science Foundation MSP Grant. She served as the evaluator on two Wisconsin MSP programs: Cooperative Educational Service Agency 7 *Mathematics Content Knowledge for Middle School Teachers* and the WASDI *Northwest Wisconsin Mathematics and Science Partnership*.

Margie has been active statewide activities. For six years she served as director of the statewide NPRIME program—Networking Project for the Improvement of Mathematics Education, a professional development program for university and college mathematics and mathematics education faculty. In 2002, with NPRIME participants, she prepared a book for college and university faculty to use in mathematics and mathematics education courses: *A Syllabus for Content and Methods Courses: PBS Mathline Preservice Mathematics Initiative*.

She served as president of the WMC, Wisconsin Mathematics Council (2002-2003) and as program chair for the Annual WMC Green Lake Conference (2002). For ten years she directed several statewide online teacher professional development programs—Mathline, WASDILine, Teacherline, Scienceline, and Principaline. She continues work with WASDINet. For 23 years Margie served as Director of the Educational Research and Evaluation Bureau for the Wisconsin Educational Communications Board, Madison, WI. In 2001 Margie was an NSF Evaluation Fellow at the Evaluation Center, Western Michigan University.

Her evaluation and research interests are Educational Evaluation, Evaluating Teacher Change, Professional Development for Mathematics and Science Teachers, Facilitating Online Learning Communities and Teacher Reflection.

Mathematics & Science Partnerships

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Merrillan School District

Arcadia School District

Bangor School District

Black River Falls District

Blair—Taylor District

CESA 3 & 4

De Soto School District

Galesville—Etrick—
Trempealeau District

Holmen School District

Melrose—Mindoro District

Montello School District

Onalaska School District

Pecatonica School District

Royall School District

Sparta Area School District

UW—La Crosse

Western Wisconsin Technical
College

West Salem School District

Westby School District

CESA 3 and CESA 4 Physical Science Inquiry Project

The vision of the three-year Physical Science Inquiry (PSI) project is to ensure that more highly-qualified science teachers will be part of the educational infrastructure in western Wisconsin, resulting in increased student learning and performance. To achieve this vision, UW-La Crosse, Western Technical College, CESAs 3 and 4 and 57 potential LEAs (of which 11 are considered high need in science) formed a partnership to provide three years of high-quality professional development. Originally, the target audience was 30 elementary and middle school teachers per year. Due to the positive response, we sought and received permission to accept additional participants, up to 40, ending up with actual registration of 37 one week and 38 the other week. A follow-up session was held in the fall and a spring follow-up session is scheduled.

Based on national, state, and local needs, five project goals had been identified: 1) Curriculum alignment, 2) Science content, 3) Constructivist pedagogy, 4) Learning plans, and 5) Student Achievement. Teachers participated in an intensive two-week summer workshop in conjunction with CESA 4's Washburn Academy, using the scientifically-based Operation Primary Physical Science (OPPS) program. In the first year of the grant, IHE faculty taught units in Matter and Motion. In the summer of 2008 they will teach units in Electricity and Magnetism. The third year will focus on Sound and Light. By the end of the third year, six units of physical science content, centered on the WMAS for Science and inquiry-based teaching methods, will have been covered. Each year participants will demonstrate their knowledge and skills gained by developing inquiry-based lessons that will be implemented in their classrooms. Lessons will be piloted, revised, and eventually compiled into a handbook for CESA-wide distribution.

Quasi-experimental research design is being used to collect qualitative and quantitative data concerning both teacher performance and student achievement. Pre- and post-tests will be used to measure gains in content knowledge. During the two-week course in 2006, teachers provided ongoing feedback to instructors through the use of daily journals. Teacher feedback on surveys, workshop evaluations, the Survey of the Enacted Curriculum (SEC) profiles, and WKCE student achievement scores will provide additional meaningful data about the effectiveness of the program. It is anticipated that data analysis from these instruments will demonstrate that engaging in scientifically-based professional development will enhance student academic achievement in science.

Mathematics & Science Partnerships

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District

Middle Mathematics Mobilization Program (M³P)

The Middle Mathematics Mobilization Program (M³P), a coordinated effort of the Kenosha Unified School District (KUSD) and Carthage College, is designed to increase the mathematical knowledge of KUSD grades 6-8 middle school teachers and their students. M³P strives to ensure that the goals of the Elementary & Secondary Education Act (ESEA) are attained in the area of mathematics. The KUSD Strategic Plan restates and emphasizes the drive to “ensure that staff is implementing the District Curriculum and using effective instructional strategies as well as data to help students demonstrate proficiency on District and standardized assessments.” KUSD’s vision and Strategic Plan promote and support high-quality professional development, which, according to the Northwest Regional Education Laboratory, complements and implements Education Goal 4 adopted in 1989 by President George Bush and the nation’s governors: “the nation’s teaching force will have access to programs for the continuous improvement of their professional skills and the opportunity to acquire knowledge and skills needed to instruct and prepare all American students for the next century.” M³P will enable our participating middle school math teachers to develop further experience in subject content, teaching strategies, uses of technologies, and other essential elements in teaching to high standards. The end result of grant participation will be better prepared teachers, with clear vision and motivation resulting in increased student academic achievement.

M³P participants will complete five Carthage College mathematics courses for a total of twenty credits. In addition, middle school participants will attend two summer sessions (part one-summer of 2007 and part two-summer of 2008—four credits total) at the Chiwaukee Academy where they will meet to discuss and share their newly created mathematics lessons aligned with content and with KUSD standards and benchmarks.

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Mathematics & Science Partnerships

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District

Middle Mathematics Mobilization Program - continued

The project is intended to support twenty-five middle school teachers of mathematics who are highly qualified in their areas of licensure, but have minimal training in mathematics.

As a result of participation in this program, twenty-five middle school math teachers will:

1. Better know and understand those mathematics concepts necessary to teach mathematics at their grade level and beyond;
2. Design effective units and lessons of instruction based on KUSD middle school mathematics benchmarks as well as on best practices in instruction;
3. Better understand the central concepts of mathematics, tools of inquiry, and structures of the discipline in order to create learning experiences that make the aspects of mathematics meaningful to students;
4. Learn how to formatively and summatively assess student work and adjust instruction according to assessment results;
5. Help students make sense of mathematics
6. Earn a M³P Certificate of Completion from the KUSD Board of Education.

The final result of this project will ensure increased teacher knowledge that will, in turn, positively impact student learning, content knowledge and higher student achievement on Wisconsin Knowledge and Concepts Exams.

Mathematics & Science Partnerships

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Beecher—Dunbar—
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Boulder Junction J1 School
District

Bruce School District

Colby School District

Crandon School District

Elcho School District

Flambeau School District

Gilmanton School District

Glidden School District

Goodman—Armstrong
School District

Laona School District

Nekoosa School District

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Northern Wisconsin Rural Partnership for Mathematics Education

The Northern Wisconsin Rural Partnership for Mathematics Education is a collaboration to address the critical need to improve mathematics achievement of students. The project applies research findings that reveal student achievement increases when mathematics teachers have deep content knowledge of their subject (Killion, 1999, U.S. Department of Education 2002) and a repertoire of effective teaching strategies (Garet, 2001) that center on student learning (Garet, 2001; Lambert, 1998). The partnership will provide opportunities for advanced and ongoing professional development activities that improve teachers' subject matter knowledge. The activities will relate directly to the curriculum and subject area in which the teachers provide instruction, enhance the ability of teachers to understand and use challenging content standards, and provide teachers the opportunity to work with university mathematics professors.

Mathematics Professors from UW-Eau Claire who have considerable experience working with and in K-12 schools will deliver 10 days of professional development institutes centered on the *Wisconsin Model Academic Standards for Mathematics* relevant to grades 3-8 in each of three summers. They will also provide in-school consultative help in each teacher's classroom for 7 days. Ongoing facilitated electronic communication, both, synchronous and asynchronous, will encourage reflective dialog and ongoing collegial contact between staff and teachers. Participating teachers will receive a stipend, expenses and materials.

The project will support 24 teachers of grades 3-8 mathematics from at least these school districts on the High-Need LEAs identified by the Wisconsin Department of Public Instruction: Beecher-Dunbar-Pembine, Boulder Junction, Glidden, Laona, Park Falls, Plum City, Wabeno, and Winter.

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Mathematics & Science Partnerships

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Partners - continued:
Niagara School District

Nicolet Area Technical
College, Rhinelander

Northwood Distance
Education Network

Northwood School District

Park Falls School District

Phelps School District

Plum City School District

Tomahawk School District

UW—Eau Claire

Wabeno Area District

White Lake School District

Winter School District

WASDI

Wonewoc—Union Center
School District

Northern Wisconsin Rural Partnership for Mathematics Education—continued

As a result of participation in this program 24 grades 3-8 teachers will:

1. Know mathematics necessary to teach mathematics at their grade level and beyond.
2. Capitalize upon the connections between how mathematics is learned and the mathematics that is learned
3. Select appropriate rich mathematical tasks to exemplify and clarify important mathematical topics.
4. Answer classroom questions that arise and stretch the mathematics covered by having competence and confidence in their own mathematical understandings.
5. Make wise choices about classroom curricular materials that will truly implement a standards based classroom as a curriculum for all.
6. Help students make sense of mathematics.

Teacher knowledge gain will be connected to student achievement on Wisconsin Knowledge and Concept Examinations and through this approach demonstrate the worth of this particular regimen of professional development for teachers. Rural teachers will also reduce their isolation by establishing a network of colleagues in similar schools and be connected online to these colleagues and mathematics professors. With a three-year project building ongoing competence for these teachers, and the presence of a team of two or three in each building, capacity is expected to grow as these more highly qualified teachers exercise leadership.

Mathematics & Science Partnerships

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Bruce School District

Crandon School District

Goodman—Armstrong
School District

Laona School District

Nicolet Area Technical
College, Rhinelander

Northwood School District

Siren School District

UW—Barron County

Wabeno Area School
District

WASDI

Northern Wisconsin Rural Partnership for Science Education

The Northern Wisconsin Rural Partnership for Science Education is a targeted three year program to address the need to improve science achievement. The program will work with the rural districts of: Beecher-Dunbar-Pembine; Crandon; Elcho; Goodman-Armstrong; Laona; Mercer; Northwood; Phelps; Wabeno; and White Lake. Universities, colleges and agencies involved in the partnership the first year include UW-Barron County, UW-Fox Valley, UW-LaCrosse, Nicolet Area Technical College, and Lawrence University. These, and other campuses and agencies, will be involved in subsequent years.

The program will support, nurture, and guide school teams, each composed of two to four science teachers from grades 3-8, in deepening their subject matter content knowledge, their understanding and use of the Wisconsin Academic Model Standards in Science in teaching and learning, in developing an articulated 3-8th grade science curriculum, and increasing their ability to analyze student work to support student learning. The program is content based professional development with activities that relate directly to the curriculum and subject areas in which teachers provide instruction.

The primary goal of the program is to increase student achievement. Secondary goals are to increase breadth and depth of participant subject content knowledge and to establish a collegial relationship between and among participants to provide sustained professional support.

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Bruce School District

Crandon School District

Goodman—Armstrong
School District

Laona School District

Nicolet Area Technical
College, Rhinelander

Northwood School District

Siren School District

UW—Barron County

Wabeno Area School
District

WASDI

Northern Wisconsin Rural Partnership for Science Education - continued

Our program will focus in 2006-07 on physical science; 2007-08 on earth/space science; and in 2008-09 on life/environmental science. A consistent guiding principle will be the application of subject content to everyday experiences. The commonalities in each year include:

1. Teacher content and pedagogical content knowledge enhancement;
2. Review of the 4-8 science curriculum to ensure sequential concept development of each subject area,
3. Inclusion of the Model Academic Standards in Science newly developed Frameworks in unit/lesson planning;
4. A team approach to developing, sharing and analyzing grade appropriate activities; and
5. Looking at student work as a guide to improving instruction. The program will have 10 days of professional development each summer taught by university scientists and master teachers, a fall and spring weekend (Friday-Sunday) each year, and a two-day in-school session in each district each semester. Weekly electronic communication will share information and build relationships. Participants receive a stipend of \$100 per nonschool day, housing, food, travel, and materials. Up to 12 graduate credits are available through Viterbo University.

Our program will have a single-program, quasi-experimental design evaluation, as defined by NCLB, and a pre-post design evaluation, both conducted by a nationally recognized evaluator and her graduate student team.

Storm Carroll, Laona district administrator, is the administrative project leader. Julie Stafford, Wisconsin Academy Staff Development Initiative (WASDI), will serve as program manager. Virginia Metzdorf, NDEN Director, will assist with district coordination and communication. Dr. Frances Lawrenz, University of Minnesota, will be the program evaluator.

Mathematics & Science Partnerships

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Milwaukee

Milwaukee Partnership
Academy

Milwaukee Public Schools

Project CLASS

Project CLASS is a three-year professional development program offered at Alverno College for Milwaukee Area science teachers in grades 5-12. The project addresses two interrelated problems endemic to science learning in the U.S.:

1. declining levels of science achievement and attainment, and
2. competency gap (content knowledge) for those providing instruction. Participants engage in self-directed action research projects, cohort activities, on-site mentoring and coaching, interaction with school learning teams, and professional networking.

Project courses were successfully developed for the pilot phase (Project CLASS I) of the program in 2005-2006, focusing on over 20 MPS science teachers, grades 5-8. The program was adapted and enhanced to include up to 50 MPS science teachers, grades 9-12 (Project CLASS II), beginning in summer 2006.

Benefits to participants include gaining a strengthened science content knowledge; having a deeper understanding of inquiry-centered science teaching, learning and assessment; and developing as a science leader not only in the classroom and the school, but also by providing professional development and mentoring to others in the school and district. Benefits to schools include improving student learning and achievement in science; increasing the number of highly qualified science teachers; and receiving resources in science to support teaching and learning.

Mathematics & Science Partnerships

Nekoosa
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Silver Lake College,
Manitowoc

Westfield School District

Wisconsin Dells School
District

Wonewoc - Union Center
School District

Community of Mathematics Learners

Five districts located in central Wisconsin have joined forces to develop this project. These districts serve 5,464 students in grades K-12. Our project will target the needs of more than 1,500 public and private middle school students and upwards of 35 educators who teach math across grade 6-8. Need for this project is based on low student achievement and the need for more effective teaching in math. To address identified needs, we have developed a high quality and sustainable professional development program in partnership with the mathematics and Education Departments of Silver Lake College (SLC) that will be closely linked to the PI 34 teacher standards and the *Wisconsin Model Academic Mathematics Standards*.

The framework for our program is based on developing classrooms that are balanced between the following four interrelated attributes:

1. Classrooms are learner-centered in the sense that teachers engage students' preconceptions and build on the knowledge students bring to the learning situation.
2. They are knowledge-centered in the sense that the teachers focus simultaneously on developing students' conceptual understanding and the procedural knowledge of a topic, which students must master to be proficient, and the learning paths that can lead from existing to more advanced knowledge.
3. They are assessment-centered in the sense that the teachers attempt to make students' thinking visible so that ideas can be discussed and clarified, such as having students (a) present their arguments in debates, (b) discuss their solutions to problems at a qualitative level, and (c) make predictions about various phenomena.
4. Classrooms are community-centered when teachers establish classroom norms that learning with understanding is valued and students feel free to explore what they do not understand. To achieve this vision, our Work Plan will be comprised of a rich set of strategies, including:

continued on to next page

Mathematics & Science Partnerships

Nekoosa
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Westfield School District

Wisconsin Dells School
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Wonewoc—Union Center
School District

Community of Mathematics Learners—continued

- I. "Kick-Off" Math Summit: Held at the project start to provide in-depth orientation on project strategies and research, training on PI34 requirements and action research, and input on the design of the Summer Institutes.
- II. Summer Institutes: A 2-week Summer Institute each project year will focus on providing teachers with in-depth content knowledge, pedagogical content knowledge, instructional strategies, and assessment techniques related to two *Wisconsin Model Academic Standards for Math* per year to address all six standards by year three. Part of each Institute will be dedicated to Leadership Training to cultivate in-district expertise and project sustainability.
- III. Follow-Up Training and Technical Assistance: The following components will be provided as on-site training and technical assistance as a follow-up of training received during the summer institutes: Math Conferences, Classroom Observation and Follow-up Seminars, Action Research, Study Groups, On-Line Learning and Parent Education.

The goals of the program are to:

1. improve academic achievement of students in mathematics across 6-8; and
2. enhance the mathematics content knowledge and teaching skills of classroom teachers in grade 6-8. Outcomes will be to increase the number of students who achieve proficiency on WKCE and meet grade level benchmarks as per the *Wisconsin Model Academic Standards for Math*. Also, to increase the number of teachers participating in math-specific professional development, and hence measurably increase their knowledge of math standards.

Mathematics & Science Partnerships

Racine
Est. 2005

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u

Partners:
Racine Unified School
District

UW - Parkside

Preparing Outstanding Science Educators Project (POSE)

The POSE Project is a partnership between the Racine Unified School District and the University of Wisconsin-Parkside. The partnership was formed to develop a program of staff development. It will concentrate on 20 elementary educators and provide them with State of Wisconsin, DPI standards-based content instruction in Earth, Life, and Physical Science as well as effective classroom teaching strategies. All participants receive instruction in classroom management and pedagogical techniques of teaching science.

The POSE Project is predicated on research findings that indicate staff development has a greater effect when small groups receive staff development over an extended period of time where content, technique and context are integral components of the program. The one-year program will allow participants to form a professional and collegial group that will enable participants to reflect and provide feedback to all members.

Participant educators will be paired with pre-service educators from the University of Wisconsin-Parkside in a mentor-mentee relationship with placement of the pre-service educator in the participant educator's classroom.

Project goals are to: (1) Improve science test scores on the Wisconsin Knowledge and Concepts Exam, (2) Improve elementary science educator content knowledge and understanding of research based pedagogical techniques, (3) Develop a professional learning community within the Racine Unified School District, (4) Develop mentoring techniques and abilities within district educators, while fostering relationships with pre-service educators, and (5) Develop and improve science classroom management techniques.

Mathematics & Science Partnerships

Superior
Est. 2005

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Partners:
Bayfield School District

CESA 12

Drummond Area School
District

Glidden School District

Hayward Community
School District

Mellen School District

Northland College,
Ashland

Northwood School District

Superior School District

UW - Superior, Lake
Superior Research Institute

Winter School District

Superior Science Teachers

The Superior Science Teachers project builds a consortium of teachers from eight northern Wisconsin middle schools, staff from CESA 12 and the School District of Superior, and faculty from Northland College, an environmental/liberal arts college in Ashland, and the Lake Superior Research Institute at UW-Superior.

The project follows a four design criteria:

1. A universal theme with relevant strands in earth science, physical science, and environmental science will form the basis of the project;
2. Course delivery will model excellent pedagogy by using a variety of research based instructional strategies;
3. Participants will construct and apply new knowledge immediately by developing or revising at least one instructional unit; and
4. Instruction will reiterate the principals of the Nature of Science so that the participants will develop an understanding of the overarching importance of the scientific method, what it means to think scientifically, and what it means to *do* science.

Anticipated outcomes include: increased teacher capacity to use a variety of strategies and techniques to engage students, greater collegiality among science teachers in the region, greater preparedness to meet the NCLB requirements beginning in 2007, and increased student achievement and interest in scientific fields.

Mathematics & Science Partnerships

Green Bay
Est. 2006

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Partners:
Green Bay Area Public School
District

St. Norbert College

Math Science Partnership—Green Bay Area Public Schools, and St. Norbert College

The Green Bay Area Public School District and St. Norbert College are partnering to provide an opportunity for approximately 15 pairs of elementary and middle school mathematics teachers from target schools to work together with mathematics professors from St. Norbert College over a 1½-year period.

During this professional development partnership, participating teachers will take a series of three graduate level courses, for a total of six credits. These courses will deepen and broaden their knowledge and understanding of important mathematical concepts including measurement, geometry, statistics, probability, and problem solving. The grant will also develop mathematics understanding through applications in science. The grant partnership will concentrate on strengthening comprehension and building proficiency with standards-based instructional practices among participating teachers from grades four through eight. Teachers will develop a clear vision of the mathematics scope and sequence in the Green Bay Area Public School District and will focus on the seamless articulation of mathematics instruction for students progressing from elementary to middle schools. In addition to deepening their mathematical content knowledge, participating teachers will increase their repertoire of successful mathematics instructional strategies by focusing on best teaching practices

Further, participating teachers will develop congenial and collegial relationships with their peers and with St. Norbert College mathematics faculty who have developed the three graduate level courses tailored to fit the needs of district teachers. Upon project completion, these teachers will serve as resource persons for their colleagues in their respective schools and work to assure that students benefit through improved academic achievement.

Mathematics & Science Partnerships

Madison Mathematics
Est. 2006

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Partners:
Beloit School District

Deerfield Community Schools

Madison Metropolitan School
District

Sun Prairie Area School
District

Wisconsin Heights School
District

Extending Math Knowledge, Madison Metropolitan School District (MMSD), University of Wisconsin—Madison, SCALE (an NSF Math/Science Partnership)

The Extending Math Knowledge Project is designed to improve the content knowledge of intermediate grades (3-5) mathematics teachers. This program builds on the MMSD Math Masters Project, a math/science partnership designed to improve math knowledge of middle school teachers. There are five school districts in south central Wisconsin included in this project including, Beloit, Deerfield, Madison, Sun Prairie, and Wisconsin Heights.

This program will be designed around the different strands of mathematics: Algebra, Geometry, Measurement, and Data. The 60-hour Professional development program will include:

- Math courses team taught by a UW Mathematics Professor and an MMSD Elementary Math Resource Teacher
- Discussions about math content, pedagogy, and research on student learning
- Facilitated online discussions about effective math instruction

Teachers will meet during the summer followed by face to face and online discussion groups during the school year.

Mathematics & Science Partnerships

Madison Science
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Partners:
Beloit School District

Deerfield Community
School District

Madison Metropolitan
School District

Monona Grove School
District

Mount Horeb Area School
District

Oregon School District

Sauk Prairie School District

Sun Prairie School District

Wisconsin Heights School
District

SCALE (an NSF
Math/Science Partnership)

UW-Madison

Science Masters Institute

The goal of the Science Masters Institute (SMI) is to improve achievement of middle school students in science by strengthening the quality of science instruction. SMI is designed to provide content and inquiry-based professional development to meet objectives that addresses the following:

- **CONTENT KNOWLEDGE:** Increase the content knowledge of 120 middle school science teachers by offering high-quality content and inquiry-based courses co-designed and co-facilitated by a UW scientist (STEM faculty) and an Madison Metropolitan School District (MMSD) instructional resource teacher in secondary science.
- **INSTRUCTION:** Improve participating teachers' understanding of how students learn science content and ensure that new content knowledge is incorporated into the classroom by offering pedagogical and instructional supports.
- **CURRICULUM IMPLEMENTATION:** Enhance implementation of standards-based science curricula within classrooms by expanding teacher knowledge of essential content, concepts, and teaching strategies associated with middle school science
- **STUDENT ACHIEVEMENT:** Raise middle school student achievement in science in all grades as teachers with strengthened content knowledge, understanding of student learning, and mastery of curriculum teach more students in more strands of the curriculum over time.
- **ACHIEVEMENT GAP:** Reduce the achievement gap in science among all NCLB sub-groups by helping teachers master key concepts they can use to adapt instructional goals, assessment strategies, and learning activities to meet the needs of all students.

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Mathematics & Science Partnerships

Madison Science
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Partners:
Beloit School District

Deerfield Community
School District

Madison Metropolitan
School District

Monona Grove School
District

Mount Horeb Area School
District

Oregon School District

Sauk Prairie School District

Sun Prairie School District

Wisconsin Heights School
District

SCALE (an NSF
Math/Science Partnership)

UW-Madison

Science Masters Institute—continued

STEM faculty from UW-Madison and SMI partner school districts have collaborated for the past three years on the Title IIB-funded Math Masters Projects 1 & 2. SMI will use some of the same design elements from the highly successful Math Masters Projects as it extends into the content areas of earth, life, and physical sciences at the middle school level.

Over the course of one year, a cohort of 60 middle school science teachers will participate in two SMI components:

Three 20-hour content seminars co-designed and co-facilitated by a UW STEM faculty member and an MMSD instructional resource teacher in secondary science offered on a rotating basis during both the summer and the academic year. The rotation focuses on one key middle school science concept area commonly taught in either grade 6, 7, or 8 and in either earth, life, physical science. The Earth Science concept areas include: Structure of Earth Systems (6), Earth's History (7), and Earth in the Solar System; in Life Science: Cellular Structure & Function (6), Natural Selection & Evolution (7), and System Interactions & Regulation (8); and in Physical Science: Motion & Forces (6), Properties & Changes in Matter (7), and Transfer of Energy (8).

Ten hours of moderated online discussion among all cohort members for each seminar or summer institute, and academic year classroom visits by the instructional resource teacher.

Mathematics & Science Partnerships

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Partners:
Belmont Community School
District

Black Hawk School District

Blair-Taylor School District

Boscobel Area Schools

Cassville School District

CESA 3 & 4

Cuba City School District

Dodgeville School District

Gale-Etrick-Trempealeau
School District

Iowa-Grant Schools

Mineral Point Unified Schools

North Crawford Schools

Onalaska School District

Pecatonica Area Schools

Platteville School District

Prairie du Chien Area Schools

Riverdale School District

UW-Platteville

Mathematics Achievement Project

The vision of the Mathematics Achievement Project (MAP) is to ensure that more highly qualified mathematics teachers will be part of the educational infrastructure in western Wisconsin resulting in increased student learning and performance. To achieve this vision, the UW-Platteville (UWP), CESA 3, CESA 4, and 57 potential LEAs (of which 19 are considered high need in mathematics) formed the Western Wisconsin Mathematics Improvement Consortium (WWMIC). The partnership was formed on the premise that student achievement could be improved only by enhancing the content knowledge and the quality of instruction by mathematics educators. The WWMIC received \$130,000 annually for a two-year period to provide a high-quality, sustained professional development experience in mathematics content and pedagogy for 25 mathematics teachers.

Based on ten national, state, and local needs that were determined by the WWMIC, six project goals were identified: 1) Expert panel, 2) Curriculum alignment, 3) Mathematics content, 4) Constructivist pedagogy, 5) Learning plans, and 6) Student achievement. Teachers will participate in an intensive two-week summer Math Academy using Marilyn Burn's Educational Associates Math Solutions Program as a reform framework. UWP faculty will employ a problem-solving approach to teach mathematics content that is centered on the *Wisconsin Model Academic Standards for Mathematics (WMAS)*. Inquiry-based teaching methods, authentic assessment strategies, and grade-level connections will be modeled over the two-year period. A trained expert panel in Math Solutions will mentor and network with the 25 teacher participants. These participants will apply the new knowledge gained and pedagogical techniques learned by developing standard-based learning plans. Grant funding will be used to pay instructor salaries, provide support stipends, and purchase resources and equipment for learning plan implementation.

Quasi-experimental research design will be used to collect qualitative and quantitative data concerning both teacher performance and student achievement. Data from pre- and post-content tests, an inquiry-based self assessment, journaling, and assessment rubrics for the learning plans will be used to provide teacher feedback. The Survey of the Enacted Curriculum (SEC) will provide valid and reliable data on the alignment between state standards and what is actually being taught. Student achievement gains will be measured using Tier II pre- and post-standards-based assessments. Additionally, student achievement gains will be measured against established baselines using WKCE-CRT proficiency scores and Standard Performance Indicators (SPI) data. The WWMIC expectation is that comparison data will demonstrate that engaging in scientifically-based professional development enhances student academic performance in mathematics.

Mathematics & Science Partnerships

Rio
Est. 2006

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Partners:
CESA 5

Lodi School District

Montello School District

Necedah School District

New Lisbon School District

Pardeeville School District

Pittsville School District

Portage School District

Port Edwards School District

Princeton School District

Randolph School District

Tri-County School District

UW—Platteville

Mathematics Excellence in the Middle Grades

Mathematics Excellence in the Middle Grades is a three-year professional development project for mathematics teachers in grades 5-8. Need for this project is based on low student achievement and the need for more effective teaching in math. To address identified needs, we have developed a high quality and sustainable professional development program in partnership with the mathematics department of UW-Platteville. It is designed to increase both the mathematical content knowledge, as well as the pedagogical knowledge of participating teachers. The project will support 35 teachers of grades 5-8 mathematics.

Mathematics professors from UW-Platteville who have considerable experience working with and in K-12 schools will deliver eight days of professional development institutes centered on the *Wisconsin Model Academic Standards for Mathematics* relevant to grades 5-8 in each of three summers. They will also provide on-site technical assistance to all consortium schools in years two and three of the grant. The program will utilize a coaching model, so that information learned during the summer institutes can be gradually and successfully implemented in participants classrooms.

Teachers who participate in the program will:

1. Improve their content knowledge
2. Improve their pedagogical knowledge
3. Improve their students' mathematics achievement
4. Use technology regularly in their mathematics instruction
5. Benefit from a coaching model for professional development

MSP Resources

The National Research Council (NRC) has produced an excellent series of books related to learning, especially in the areas of mathematics and science. They can be ordered from the National Academy Press. Their website address is: www.nap.edu. In 1999, the NRC published two very significant books titled How People Learn: Brain, Mind, Experiences, and School (NRC, 1999) and How People Learn: Bridging Research and Practice (NRC, 1999). The next year, these two publications were combined into one expanded version titled How People Learn: Brain, Mind, Experience, and School Expanded Edition (NRC, 2000). The NRC then published Adding It Up Helping Children Learn Mathematics (NRC, 2001). This book really looked at how elementary students learn mathematics and presented a complete example of how the teaching of the content area of numbers unfolds throughout the elementary curriculum. It also provides some ideas for the other five content areas. Last year the NRC published its most recent contribution in the area of learning titled How Students Learn: History, Mathematics, and Science in the Classroom (NCR, 2005). Subsequently they published three separate smaller books. Each book contains: the introductory material, the content chapters relevant to that particular content area, and the conclusions reached by the authors.

Meanwhile, the professional associations were equally hard at work. The National Council of Teachers of Mathematics (NCTM) published: Curriculum and Evaluation Standards for School Mathematics (NCTM, 1989), Professional Standards for Teaching Mathematics (NCTM, 1991), and Assessment Standards for School Mathematics (NCTM, 1995). By 2000, the NCTM revised and updated its standards with the publication of Principle and Standards for School Mathematics (PSSM) (NCTM, 2000). They also have a set of E-Standards available on their website. This is a fixed set of sample lessons for implementing the PSSM philosophy and ideas into a teacher's classroom. They have also teamed up with a group of business partners to create a website titled Illuminations. This website differs from the E-Standards in the sense that it is designed to be "infinitely" expanding. There is an appointed committee that approves the best lesson plans (of those submitted for consideration) to be added to the Illuminations collection. To supplement the PSSM, NCTM has published A Research Companion to Principles and Standards for School Mathematics (NCTM, 2003). The most recent publication from NCTM is Curriculum Focal Points for Pre-kindergarten through Grade 8 Mathematics A Quest for Coherence (CFP)(NCTM, 2006). At each grade level three major topics are identified to be emphasized at that grade level. It also lists topics designed to enhance the learning of those three topics. The appendix provides a match up between the material in the CFP and the PSSM. NCTM anticipates that a similar publication involving lenses, rather than focal points will be available in late 2008. The lenses will be designed to look at the high school mathematics curriculum and individual courses, rather than grade levels like the focal points. All these publications are listed on the NCTM's website. The address is: www.nctm.org.

The state affiliate of NCTM is the Wisconsin Mathematics Council (WMC). Its main event is the Annual Green Lake Meeting which is held the first Thursday and Friday of May. Each of the last two years over 1,800 teachers of mathematics K-16 have attended the two-day conference. In addition to numerous local speakers, the conference invites noted speakers in mathematics education from all over the country to speak. Every year WMC presents two scholarships to students who are one year from their bachelor's degree in mathematics education and one scholarship to a deserving high school senior who plans to go into the area of mathematics education. Other activities sponsored by the WMC are workshops on topics relative to mathematics teaching and learning. Their newsletter is published three times during the school year and keeps members informed on what WMC and other mathematics education activities are occurring in Wisconsin and neighboring states. Every year WMC members look forward to receiving three issues of their superb journal titled Wisconsin Mathematics Teacher. The articles cover contemporary mathematics education issues in K-12. Many of the articles are written by WMC members and often include activities that can be implemented right into the classroom. For further information on the WMC and its activities visit its website at: www.wismath.org.

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MSP Resources

The National Science Teachers Association (NSTA) continued along the same line. They joined with Project 2061 sponsored by the American Association for the Advancement of Science (AAAS) to publish Science for All Americans (AAAS, 1989) and Benchmarks for Scientific Literacy (AAAS, 1993). In 1995, the NRC published National Science Education Standards (NRC, 1995). The AAAS and the NSTA has published several books providing resources for scientific literacy. Of particular note is Atlas of Scientific Literacy (AAAS, 2001) and NSTA's Pathways to the National Science Education Standards (NSTA, 2000) for the elementary, middle level, high school, and college level classrooms. In 2005 NSTA and Corwin Press teamed up to produce the publication Science Curriculum Topic Study (NSTA, 2005); the publication is designed to bridge the gap between research and practice. Each of the publication and much more can be found on NSTA's website at www.NSTA.org.

The Wisconsin Society of Science Teachers (WSST) has been instrumental at the state level with implementing both the state and national standards. In 1996, WSST promoted and sold many copies of the national standards. Those standards became the cornerstone for all their activities including conferences and conventions held throughout the state.

Wisconsin is home to one of the largest educational research centers in the nation. The Wisconsin Educational Research Center (WERC) is located on the University of Wisconsin campus in Madison. One of its main emphases is research in mathematics and science education. To get more information on past and current studies the WERC is engaged in, visit its website at: <http://www.wcer.wisc.edu/>.

Wisconsin is also home to three other federal initiatives. The Milwaukee and Madison school districts are each involved with the University of Wisconsin—Milwaukee and the University of Wisconsin—Madison, respectively, in five year Mathematics and Science Partnership (MSP) grants from the National Science Foundation (NSF). The third major professional development activity in Wisconsin is the Wisconsin Academy Staff Development Initiative (WASDI). It received its first funding in 1993 to develop K-12 lead teachers in mathematics, science, and technology. During the initial five year NSF grant, WASDI trained over three hundred fifty lead teachers and created ten academies around the state which have provided professional development, predominantly in mathematics, science, and technology, for the last fourteen summers. Their most recent project (in the fourth and last year of funding) is titled R²: Retention and Renewal. In this professional development program, WASDI has trained ninety mathematics and science teachers to serve as mentors for new teachers. Their mentees were included in half the sessions and a third of the sessions also included administrators from their schools. This program is heavy on content learning, but they also are taking the time to bring in national experts so they can learn more about such things as: cognitive coaching, pedagogical coaching, Japanese lesson studies, differentiated instruction, curriculum topics study, and leadership. Programs such as those described in this section should continue the strong Wisconsin tradition of leadership in mathematics, science, and technology education well into the future!

Finally the National Assessment of Educational Progress (NAEP) provides a powerful on-line question tool. The NAEP Questions Tool provides easy access to NAEP questions, student responses, and scoring guides that are released to the public. These questions can be used for both professional development as well as actual student worksheets. The question tool can be accessed at the following address: <http://nces.ed.gov/nationsreportcard/itmrls/>

MSP Resources

U.S. Department of Education/MSP Program:

The website of the U.S. Department of Education offers background and legislative information on the MSP Program: <http://www.ed.gov/programs/mathsci/index.html>.

Teacher Education Materials Project (TE-MAT):

The TE-MAT site offers a database of resources to support mathematics and science professional development providers as they design and implement programs for in-service teachers: <http://www.te-mat.org/>.

National Staff Development Council (NSDC):

The website of the NSDC offers information and resources for professional development providers: <http://www.nsd.org/>.

What Works Help Desk:

The U.S. Department of Education (ED) has established this help desk to provide federal, state, and local education officials, researchers, program providers, and educators with practical, easy-to-use tools related to program evaluation:

<http://www.whatworkshelpdesk.ed.gov/>.

Horizon Research, Incorporated (HRI):

The website of HRI offers a wealth of information related to research and evaluation of mathematics and science initiatives. Some of its tools may be helpful in conducting a professional learning needs assessment: <http://www.horizon-research.com/instruments/>.

Learning Mathematics for Teaching (LMT) Project:

The LMT Project website offers information on the assessment instruments required by the GaDOE of all funded mathematics MSP projects:

<http://sitemaker.umich.edu/lmt/home>.

Project MOSART:

Project MOSART's website offers thorough information, including a tutorial, on the required assessment instruments:

http://www.cfa.harvard.edu/smgphp/mosart/about_mosart.html.

National Council of Teachers of Mathematics (NCTM):

The website of the NCTM might be helpful in providing research findings and professional learning ideas for use in a mathematics teacher quality program:

<http://www.nctm.org/>.

National Science Teachers Association (NSTA):

The website of the NSTA might be helpful in providing research findings and professional learning ideas for use in a science teacher quality program:

<http://www.nsta.org/>.

Grant Information

Mathematics and Science Education Research:

http://ies.ed.gov/funding/grant_topic_selection.asp

Applications Available: TBA

Deadline for Transmittal of Applications for CFDA 84.305A: TBA
Deadline for Transmittal of Applications for CFDA 84.305B: TBA

Enhanced Assessment grant: <http://www.ed.gov/programs/eag/applicant.html>

Current Application Closing Date: TBA

The purpose of Enhanced Assessment grant is to support state activities designed to improve the quality, validity, and reliability of State academic assessments beyond the requirements for such assessments in the No Child Left Behind Act of 2001. The grant funds may be used for the development of new assessment products or procedures, such as innovative test format, empirical analysis of variations in test format or procedures, or statistical models useful for combining data from multiple measures, or charting student progress over time.

Another portion of the NCTM website deals with the Mathematics Education Trust (MET). The MET runs on tax deductible contributions and endowments to honor others. The grants are awarded to individual teachers, a group of teachers, or an entire school (elementary) or an entire department (secondary). Most grants are for up to \$3,000 and run for one year. Grants are awarded in the following areas: teacher professional development (K-5, 6-8, 9-12), using music to teach mathematics (K-2), engaging students in learning mathematics (6-8), narrowing the achievement gap in mathematics (6-8), international development fund (K-12, up to \$10,000), improving students' understanding of geometry (K-8), implementing the mathematics content of the Principles and Standards (7-12), connecting mathematics to other subject areas (9-12), classroom-based research (K-12, up to \$8,000), school in-service training (K-5, 6-8, 9-12, up to \$4,000), emerging teacher-leaders in elementary school mathematics (K-5, up to \$6,000), mathematics graduate course work scholarships (7-12, up to \$10,000), mathematics graduate course work scholarships (K-5, 6-8, 9-12, up to \$2,000), prospective secondary teacher course work scholarships (7-12, up to \$10,000), prospective teacher NCTM conference attendance awards (K-12, up to \$1,200), and future leaders initial NCTM Annual Meeting attendance award (K-12, up to \$1,200). The MET also supports affiliate grants. Every year NCTM joins Toyota to present the Toyota Awards that go to teams of mathematics and science teachers to work on designing more ways to implement technology into their classrooms. To get more information on any of these grants go to the NCTM website at: www.nctm.org/about/met.

Vertical Teams

What is a Vertical Team?

Most commonly a vertical team consists of middle school and high school educators who teach in the same academic area. It may also include elementary teachers, school counselors, administrators, department chairs, or curriculum specialists. Through communication and cooperation, teams design curricular change and create support structures necessary to make high achievement by all students a reality.

Purpose of a Vertical Team

In vertical teams, teachers from different grade levels work together to develop a continuum of knowledge and skills that build from one grade level to the next. Team communication leads to a greater understanding of what is taught each year, which helps teachers organize strategies, plan introduction of concepts, and reduce repetition of content. As a result, student achievement and success is enhanced.

Goals of a Vertical Team

- To increase achievement of all students to close the achievement gap
- To bring about coordination and communication between grade levels
- To foster greater inclusion and to build enrollment in advanced coursework
- To introduce skills, concepts, and assessment methods to prepare students for success in advanced coursework
- To encourage innovation
- To stimulate enthusiasm for advanced coursework in the school, family and community

Benefits for Students

A successful vertical team will:

- Prepare students for the next level of challenge by developing skills and strategies necessary for success in advanced coursework
- Promote greater inclusion and progress towards closing the achievement gap
- Improve student achievement

Equity and Access

The concept of vertical teams is based on a philosophy of inclusion; on the notion that all students benefit from experiencing a rich and rigorous curriculum. Research shows that students of color and socio-economically disadvantaged students tend to be under-represented in advanced coursework. The goal on vertical teams is to prepare all students for success in rigorous courses at the secondary level, not only certain groups. This results in an organizational pipeline that promotes equity and access for all.

Advanced Placement



Advanced Placement
2007 Summer Splash

July 9-11

Monday, July 9—each registrant participates in one of these workshops.

- Instructional Leadership Strategies Through AP Vertical Teams—school board members, district administrators, principals, central office staff, and counselors.
Day long workshop.
- Setting the Cornerstones of the AP Vertical Team—teachers and administrators.
Day long workshop.

Tuesday, July 10 and Wednesday, July 11—each registrant selects one of these workshops.

- Advanced Topics for AP Vertical Teams in English—Grammar. Time will be spent in applying the content to vertical teams.
- Pre-AP: Topics for Vertical Teams in Social Studies. Time will be spent in applying the content to vertical teams.
- Pre-AP: Interdisciplinary Strategies for English and Social Studies. Content will connect back to vertical teams.
- Pre-AP: Strategies in Mathematics—Developing Algebraic Thinking. Time will be spent in applying the content to vertical teams.
- Pre AP: Strategies in Science—Creating a Learner-Centered Classroom. Content will connect back to vertical teams.

Sponsored by:



For More Information Contact:
Chrys Mursky, Consultant for Advanced Placement
Wisconsin Department of Public Instruction
608-267-9273
chrystyna.mursky@dpi.state.wi.us

Title I

Part of the No Child Left Behind (NCLB) Act of 2001:

Part A: Improving Basic Programs operated by Local Education Agencies.

Title I, Part A is the largest federal education available to states and districts. It is designed to supplement educational opportunities for children from high poverty areas so they can meet the state content and performance standards. Services can be provided as Targeted Assistance or Schoolwide programs.

A Targeted Assistance program is one which individual students are targeted to receive Title I services. They are identified through the use of multiple, objective and educationally-related criteria. Services may be delivered in a variety of ways, such as in-class instruction, extended day, week or year programming, or small group supplemental support during non-instructional periods of the school day.

A school receiving Title I funds is eligible to provide services as a Title I Schoolwide program when the poverty level is at least 40 percent, the school has engaged in a year-long needs assessment and planning process, and has developed an implementation and evaluation program that includes required components. A Schoolwide program provides greater flexibility in the use of Title I funds. This whole-school reform model focuses on improving teaching and learning for all students, especially those who struggle the most to meet the state academic standards. This model is expected to provide extended learning time for all students who need it and encompasses all core subject areas.

Title I and Mathematics

Title I services are generally provided in reading and mathematics. In Wisconsin, services have historically focused more on reading than mathematics. It is important that each school use multiple sources of data to determine where the greatest needs exist. Results of state testing suggest that in many cases, mathematics is emerging as a priority need. When developing a Title I mathematics program it is important to keep many things in mind, including:

- Providing supplemental instruction that supports the classroom mathematics experiences - a variety of support models can be used: within the classroom, outside of the classroom (during the school day), outside of the school day (before school, after school, summer programs)
- Assigning highly qualified staff (teachers and paraprofessionals) who know how children learn mathematics, understand how to effectively build students' mathematical understanding, and have a strong understanding of mathematics content and pedagogy
- Providing rich mathematical experiences that support the mathematics curriculum to ensure mathematical proficiency: conceptual understanding, procedural fluency, strategic competence, adaptive reasoning and productive disposition (*Adding It Up: Helping Children Learn Mathematics*, 2001)
- Using a variety of approaches to learning mathematics, including the use of mathematical tools such as manipulatives, measuring tools, computers and calculators
- Working with parents as partners to reinforce positive attitudes and experiences with mathematics

Adolescent Learning Toolkit

The Adolescent Learning Toolkit will be a useful resource for math and science educators working at the middle and high schools. It was developed from the AYP Handbook, which offers general suggestions to schools that missed Adequate Yearly Progress (AYP). The Toolkit, though, delves deeper and aims to help educators at the secondary level improve their instructional practices in mathematics and reading. As current foci of the No Child Left Behind Act, reading and mathematics are key areas in which to support Wisconsin educators.

The Toolkit examines how to achieve equity in math instruction, so that all students are learning the necessary information to succeed in life and future studies. It deals with issues of student engagement, use of discourse in mathematics, and summarizes the Wisconsin Model Academic Standards in relation to math instruction. Furthermore, specific instructional practices to support learning math are explored, covering topics such as writing, reading and use of graphic organizers, cooperative learning, and interventions. The ever-pressing matter of assessment is also discussed, identifying the role and meaning of different assessments and how best to use them to effect change. The Adolescent Learning Toolkit is intended to be a hands-on guide that is practical and research-based.

Reading is a necessary skill to do well in any subject area. Thus, the Toolkit bridges content-area instruction with the teaching of reading. It addresses the important issue of teaching vocabulary, while providing specific instructional strategies to develop better readers - who are, in turn, better learners. These strategies are explained in depth and are accompanied by activities to illustrate their usefulness across content areas. The section also explores how students can learn with understanding, engaging in higher order thinking and deeper construction of knowledge. As content area teachers attend to the integration of reading in their subjects, the Toolkit will be a useful instructional source.

Third, the Toolkit also comprises a section for leadership which focuses on infrastructural changes to address when leading for reform. This section discusses the change process, professional development, alignment to standards, and the role of math and reading specialists. It also offers several self-assessments for school leaders to conduct in order to determine what their specific needs are in terms of school improvement. The leadership section is directed toward principals and other school leaders as they work toward systemic change in their schools.

The Adolescent Learning Toolkit is developed by Wisconsin practitioners who have experience and expertise in their respective fields. These educators identified best practices in math and reading, and grounded them in current research. They focused on strategies and ideas that are user-friendly and effective in increasing student achievement. The work of these Wisconsin educators culminates in an important resource for teachers and leaders at the secondary level.



State of Wisconsin
Department of Public Instruction
Elizabeth Burmaster, State Superintendent

*** NEWS RELEASE ***

FOR IMMEDIATE RELEASE

DPI 2006-104

Tuesday, November 14, 2006

CONTACT: Joseph Donovan, Communications Officer, (608) 266-3559

Grants to increase teachers' content knowledge in mathematics and science

Ten projects to impact more than 600 teachers

MADISON—State Superintendent Elizabeth Burmaster announced partnership grants that will help more than 600 teachers in 77 school districts learn new information in mathematics and science that will support increased student achievement.

The 10 partnerships, five new grants and five renewal grants, will share \$1.7 million in federal funding. Grant activities will impact teachers in urban, suburban, and rural parts of the state. Projects will bring together mathematics and science teachers with science, technology, engineering, and mathematics faculty from state colleges and universities to expand teachers' subject matter knowledge.

"Advances in mathematics and science occur at a rapid pace," Burmaster said. "These grants will help our teachers keep on top of changes in the fields of mathematics and science and incorporate new developments and innovative teaching strategies into their classroom instruction."

Grants were directed to partnerships that included eligible high-need school districts based on mathematics and science achievement on statewide tests, poverty, and population density. Priority was given to school districts with a school or schools identified for improvement under federal requirements and districts with small student populations that partner together to serve a minimum of 1,800 to 2,000 students. Partnerships for grants could include other public schools, businesses, and nonprofit or for-profit organizations that focus on mathematics or science education.

Grants are for two years with the option to apply for continuation for a third year, subject to federal funding. The projects must focus on either mathematics or science, employ scientifically based research, and have an active and well-defined partnership among science, technology, engineering, and mathematics faculty and school district participants. If the participating schools are involved in a

(more)

mathematics reform effort, the project must integrate with on-going reform activities. Each project must incorporate a summer institute combined with follow-up contact during the academic year that will enhance teachers' ability to understand and use the Wisconsin Model Academic Standards for Mathematics and Science. The competitive grants are made possible through the Mathematics and Science Partnership Program, part of the federal No Child Left Behind Act, Title II, Part B, Improving Teacher Quality Grant Program.

"The grants funding these partnerships will help teachers deepen their content knowledge and understand more about how students learn mathematics and science concepts. This information will help teachers improve their classroom instruction to boost student academic achievement and close the achievement gap," Burmaster said.

###

NOTES: A list of partnerships grants follows. This news release is available electronically at < http://www.dpi.wi.gov/eis/pdf/dpi2006_104.pdf >

Mathematics and Science Partnership Program

No Child Left Behind Act of 2001, Title II, Part B — 2006-09 Awards

Blair-Taylor Partnership (Renewal) — \$120,000

Alma Center-Humbird-Merrillan School District
Bangor School District
Black River Falls School District
Blair-Taylor School District
Cashton School District
CESA 3
CESA 4
Cochrane-Fountain City School District
Galesville-Ettrick-Trempealeau School District
Independence School District
La Crosse School District
Melrose-Mindoro School District
Onalaska School District
Royall School District
Sparta Area School District
University of Wisconsin-La Crosse
Western Technical College, La Crosse
Whitehall School District

Green Bay Mathematics Partnership — \$242,570

Green Bay Area School District
St. Norbert College, De Pere

Laona Mathematics Partnership (Renewal) — \$110,453

Beecher-Dunbar-Pembine School District
Bruce School District
Colby School District
Crandon School District
Elcho School District
Flambeau School District
Gilmanton School District
Glidden School District
Goodman-Armstrong School District
Laona School District
Nekoosa School District
Niagara School District
Nicolet Area Technical College, Rhinelander
North Lakeland School District

Northwood School District
Park Falls School District
Phelps School District
Plum City School District
Tomahawk School District
Wabeno Area School District
White Lake School District
Winter School District
Wisconsin Academy Staff Development Initiative
Wonewoc-Union Center School District

Laona Science Partnership (Renewal) — \$120,000

Beecher-Dunbar-Pembine School District
Bruce School District
Crandon School District
Goodman-Armstrong School District
Laona School District
Nicolet Area Technical College, Rhinelander
Northwood School District
Siren School District
University of Wisconsin-Barron County, Rice Lake
Wabeno Area School District
Wisconsin Academy Staff Development Initiative

Madison Mathematics Partnership — \$247,479

Beloit School District
Deerfield Community School District
Madison Metropolitan School District
Sun Prairie Area School District
University of Wisconsin-Madison
Wisconsin Heights School District

Madison Science Partnership — \$268,847

Beloit School District
Deerfield Community Schools
Kettle Moraine School District
Madison Metropolitan School District
Monona-Grove School District
Mount Horeb Area School District

Mathematics and Science Partnership Grants — Page 2

Oregon School District
Sauk Prairie School District
Sun Prairie Area School District
University of Wisconsin-Madison
Wisconsin Heights School District

Milwaukee Science Partnership (Renewal) — \$120,000

Alverno College, Milwaukee
Milwaukee Partnership Academy
Milwaukee Public Schools

Nekoosa Mathematics Partnership (Renewal) — \$108,985

Almond-Bancroft School District
Nekoosa School District
Silver Lake College, Manitowoc
Westfield School District
Wisconsin Dells School District
Wonewoc-Union Center School District

Pecatonica Mathematics Partnership — \$260,000

Belmont School District
Black Hawk School District
Blair-Taylor School District
Boscobel Area School District
Cassville School District
CESA 3
CESA 4
Cuba City School District

Dodgeville School District
Galesville-Ettrick-Trempealeau School District
Iowa-Grant School District
Mineral Point School District
North Crawford School District
Onalaska School District
Pecatonica Area School District
Platteville School District
Prairie du Chien Area School District
Riverdale School District
University of Wisconsin-Platteville

Rio Mathematics Partnership — \$260,666

CESA 5
Lodi School District
Montello School District
Necedah Area School District
New Lisbon School District
Pardeeville School District
Pittsville School District
Port Edwards School District
Portage Community School District
Princeton School District
Randolph School District
Rio School District
Tri-County School District
University of Wisconsin-Platteville

APPLICATION PACKAGE
for
MATHEMATICS AND SCIENCE
PARTNERSHIPS PROGRAM

NO CHILD LEFT BEHIND ACT OF 2001
TITLE II, PART B

2007/08

This program is different from the Title II, Part A for Higher Education or the Mathematics and Science Partnerships from the National Science Foundation.

Due on June 29, 2007

These instructions are provided to help prepare a grant application/proposal for the Mathematics and Science Partnerships Program. Specific requirements are provided for key features and proposal requirements. If you have any questions, please call Abdallah Bendada at 608-267-9270.



APPLICATION INSTRUCTIONS

For Institutions of Higher Education, School Districts, and Nonprofit Organizations Seeking A MATHEMATICS AND SCIENCE PARTNERSHIPS GRANT

I. Introduction/Background

In January of 2002, the No Child Left Behind Act of 2001 (NCLB) became law. The Improving Teacher Quality Grant Programs (Title II) are a major component of the No Child Left Behind legislation. These programs encourage scientifically based professional development as a means for improving student academic performance. As schools are responsible for improving student learning, it is essential to have highly qualified teachers leading the way.

Title II, Part B of NCLB authorizes the Mathematics and Science Partnerships (MSP) program. MSP 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. Additional partners may include other public school districts, public charter schools, businesses, and nonprofit or for-profit organizations concerned with mathematics and science education. Private schools are encouraged to participate in the program. Private schools within the boundaries of any High Need LEA may participate directly in the program through the local public school district. Other private schools may participate as a secondary partner with any High Need LEA.

The State of Wisconsin has been allotted \$1,919,970, and the Department of Public Instruction is responsible for the administration of this program. Funds available for the Mathematics and Science Partnership competitive grant program will be awarded by the Department of Public Instruction to support proposals submitted by eligible partnerships that provide programs to improve mathematics and science instruction.

II. Program Description

A. Purpose: The Mathematics and Science Partnership program is a formula grant program to states that supports improved student achievement in mathematics and science through enhanced training for mathematics and science teachers. The states are responsible for conducting a competitive grant program that makes awards to partnerships of high-need school districts and science, mathematics, and engineering departments within universities, giving districts and arts and science faculty joint responsibility for improving mathematics and science instruction.

MSP seeks ways to sustain intensive, high-quality professional development activities that focus on deepening teachers' content knowledge. It is also interested in increasing the knowledge of how students learn particular content, providing opportunities for engaging learning, and establishing coherence in teachers' professional development experiences.

B. Wisconsin Priority:

1. K-12 Mathematics
2. K-12 Science

The analysis of student achievement data revealed that mathematics and science are areas in a great need at all levels. Therefore, the MSP program will target the area of mathematics and science with an emphasis on schools identified for improvement (SIFI). Grants for \$150,000- \$170,000 will be awarded each year for up to three years depending on funding from the U.S. Department of Education. Each project will be required to incorporate summer institutes at least two weeks in length each year combined with additional contact hours of follow-up during the academic year.

Priority will be given to Eligible High-Need LEAs that are:

- Districts with SIFI schools
- Districts with small student population that partner together to serve a minimum of 1,800-2,500 students

The program will support projects to:

- **Increase the subject matter knowledge and teaching skills of mathematics and science teachers at all levels.** Programs will bring together mathematics and science teachers with mathematicians, scientists, and engineers to expand teachers' subject matter knowledge of mathematics and science. Activities will include summer institutes that directly relate to mathematics and science curricula and enhance the ability of teachers to understand and use *Wisconsin Model Academic Standards for Mathematics* and *Wisconsin Model Academic Standards for Science*.
- **Focus on professional development of mathematics and science teachers as a career-long process.** Programs will provide opportunities for advanced and ongoing professional development activities that improve teachers' subject matter knowledge and knowledge of how students learn particular content. Projects will also provide teachers with the opportunity to work with experienced teachers and university faculty.

III. MSP Key Features

A. Partnerships: MSP projects are designed and implemented by partnerships that include K-12 administrators, faculty, and guidance counselors in participating K-12 schools, STEM faculty, and administrators in higher education organizations. Additional partners are encouraged and may include businesses, private schools, nonprofit organizations, and teacher training departments of an institution of higher education. These partners and other stakeholders engage in the effort at both the institutional and individual levels, and share goals, responsibilities, and accountability for the project. The primary partnerships must include a High Need LEA and a mathematics, science, physics, chemistry, or engineering department at a higher education institute. The fiscal agent must be the High Need LEA. **The partnership must include at least 80% of participants from high need LEAs or at least 80% of the participating LEAs are high-need LEAs.**

Content based Professional Development: The project focuses professional development on the deep mathematics and science content teachers need to understand for effective instruction, assessment, and evaluation.

1. Needs Assessment: The project must address the results of a comprehensive assessment of the teacher quality and professional development needs with respect to the teaching and learning of mathematics and science of any schools and local educational agencies that comprise the eligible partnership.

2. Scientifically Based Research: The activities to be carried out by the partnership must be based on a review of scientifically based research. An explanation of how the activities expect to improve student academic achievement and strengthen the quality of mathematics and science instruction must be included.

3. Evaluation: Each partnership project shall develop an evaluation and accountability plan for activities of the project that include rigorous objectives that measure the impact of the activities. Measurable objectives to increase the number of mathematics and science teachers who participate in content-based professional development activities must be included. Additionally, measurable objectives for improved student academic achievement are required. The partnership shall report annually to the US Department of Education Secretary and DPI regarding progress in meeting the objectives described in the evaluation and accountability plan.

4. Eligible High Need LEAs: To be eligible for a Mathematics and Science Partnership Grant, an applicant must demonstrate a need for improvement in student mathematics or science performance for which each school/district meets one of the enumerated requirements listed below. The demonstration of need must use recent data on student achievement and teacher qualification. Further, the proposal must demonstrate that the participating teachers serve a sufficient number of students exhibiting this need.

A high need LEA is any district where mathematics or science scores of the student proficiency does not exceed 65%, based on 2003/04 WKCE scores, *and*

1. At least 10 percent of the student population is from families with income below the poverty line as identified by the Census 2000, or

2. Schools/districts having REAP (Rural Education Achievement Program) or meeting local Codes of 6, 7, or 8, or

3. Schools/districts where at least 10% of math or science teachers are not highly qualified as defined by NCLB (Definition of HQ teachers), or

4. Not achieving AYP in mathematics based on 2004/05 data.

5. Project Criteria: Projects must also meet the following criteria:

- Projects must focus on either mathematics or science. An applicant may apply for more than one project; i.e., one application for science and another for mathematics.

- If participating schools are involved in a mathematics/science school reform initiative, the proposal must clearly articulate how this program will integrate with on-going reform efforts.

- Projects employ the six components of scientifically based research developed by NCREL at <http://www.ncrel.org/csri/tools/qkey7> (also see Definitions).

- Projects must have an active and well-defined partnership between STEM staff and schools/districts in all aspects of the grant including planning and delivery of professional development.

IV. Proposal Requirements

The proposal sections (excluding appendices) of the proposal must be double-spaced and the font used must be at least 12-point. Proposals must contain the following sections:

A. General Information: 2 Points

School District Partner Identification Form, Higher Education Partner Identification Form, Other Partners Identification Form, Statement of Assurances, and Eligibility.

B. 1- Abstract: All applicants 8 Points

Provide a one-page summary that briefly describes the project vision, goals, activities, and key features that will be addressed and expected benefits of the work. The abstract may not exceed 2 single-spaced pages

2- Repeat Applicant Abstract: Repeat Applicants only

Partnerships or participating LEAs that have previously received MSP Program funding must include an abstract of prior work. The abstract must describe the projects' intended goals, the amount of funding received by project year, the number of teachers it intended to serve (according to its formal proposal), the number of teachers it actually served, an explanation of how the budget was spent, qualitative and quantitative evidence of progress towards goals, a description of partnership roles, and an indication of how the proposed work differs from, builds on, or is otherwise informed by prior efforts. The abstract may not exceed 2 single-spaced pages. 10 Points

C. Program Narrative: The project narrative should contain the following elements and shall not exceed 20 pages:

Section 1: Needs Assessment 15 Points

The project description should indicate a clear understanding of results of a needs assessment and how the goals and activities of the program are directly related to those needs. The following items are required to satisfy the needs assessment:

- Identify specific gaps or weaknesses in teacher and student mathematics and/or science knowledge and achievement to be addressed by the proposed MSP program.

- Provide convincing evidence that the LEA has a large population of students who have historically been under-represented and under-served.

- Include an analysis of objective data to establish a baseline that will guide the proposed program. (Attach relevant student achievement and LEA performance data.)

Section 2: Scientifically Based-Research 10 pts.

The project description should discuss and cite the current state of knowledge to support the project. This brief literature review

should clearly indicate why the proposed activities were selected or designed. If the proposal builds on prior work, the project description should indicate what was learned from this work and how these lessons learned are incorporated in the project. The following items are required to satisfy SBR:

- Provide a literature review that defines and supports the proposed activities selected or designed in this program.
- If the program builds on prior work, include a discussion about the lessons learned.
- Provide references that employed sound research methods such as (a) random assignment, (b) quasi-experimental design using demographic alignment of similar schools and/or districts and others.
- Provide research from peer reviewed journals.

Section 3: Work Plan **20 pts.**

A proposal must clearly describe the goals and objectives for the project and the responsibility of each of the partners. The project description should indicate a timeline and an estimate of the number, type, duration, and intensity of professional development activities. The professional development activities should develop the content knowledge of teachers in the areas of mathematics and science that are a part of the state content standards. The proposal must link the professional development proposed to these standards. The following items are required to satisfy the work plan:

- Describe specific program activities to address the identified needs.
- Define the responsibilities of the partners. How will the partners account for all the goals and objectives?
- Include a timeline showing when activities will occur and their duration.
- Describe how the activities will increase the number of mathematics and/or science teachers who participate in content-based professional development activities.
- Explain how professional development activities of the program are closely linked with the state content standards for math or science.
- Explain how professional development activities of the program are closely aligned with Chapter PI34

Section 4: Commitment and Capacity of Partnership **10 pts.**

The project description must clearly demonstrate that the submitting entity has the capability of managing the project, organizing the work, and meeting deadlines. The following items are required to satisfy the commitment and capacity partnership:

- Describe how the program team will manage the program and meet the deadlines set forth in the proposal.
- Provide a brief description of the program team's process for meeting identified needs and deadlines.
- Provide a brief description of the program team's decision making process.
- Describe the role of each of the partners in a collaborative relationship.
- Explain how the partnership will function beyond the three year grant period.
- Provide a brief description of how the partnership selected/developed the MSP program activities, including the types of organizations involved in the process (e.g., STEM faculty, districts, and other potential partners).

Section 5: Evaluation of the MSP Program. 20 pts.

Each application should provide a description, identify the research and evaluation methods that the project will use, and explain why those methods are appropriate to the issues or questions that the proposal addresses. DPI encourages applicants to use experimental or quasi-experimental designs. The proposal must make a compelling case for the activities of the project and describe how the activities will help the MSP Program build a rigorous, cumulative, reproducible, and usable body of findings. The following items are required to satisfy the evaluation:

- Provide a description that links the services to the desired teacher and student outcomes.
- Describe a process evaluation plan that provides detailed information on participants that were served as well as service delivery methods to include scope, duration, and other indicators of implementation fidelity.
- Provide an evaluation plan based on an experimental or quasi-experimental design (see Definitions).
- Provide an evaluation plan that states measurable teacher and student objectives and annual targets which describe progress toward meeting the goals and established objectives.
- Describe how the activities in the MSP will increase the number of mathematics and/or science teachers who participate in content-based professional development.
- Describe how the evaluation plan measures student academic achievement on the WKCE and other state and national mathematics and/or science assessments in comparison with baseline data.

Section 6: Budget Justification 15 pts.

The budget must clearly be tied to the scope and requirements of the project. The budget narrative should describe the basis for determining the amounts shown on the project budget page. All proposals should include provision for evaluation of the activities in an annual performance report. The following items are required to satisfy the budget justification:

- Provide details for each budget category.
- Describe how other available funds will be used to help support this program.
- Include the budget summary

Appendix: While reviewers are only expected to read and score the 20-page narrative, the Appendix, which is not counted as part of the 20-page limit, may include the following:

- Letters of commitment from the partners;
- Resumes of key faculty and staff; (each resume cannot be over 2 pages);
- The Appendix can also include additional documents such as:
 - Elaboration of data (e.g., charts, tables, graphs, etc.) used to establish need;
 - Evidence of impact from prior professional development efforts; and/or

- Elaboration of research or evidence base used to design this program.

Proposal Submission and Review

a. **Submission:** Applicants must submit an original and four copies of the full proposal to the Wisconsin Department of Public Instruction. The original must include an original signature of the authorized institutional official of the fiscal agent and the authorized institutional official of the higher education institute on the cover page. Fax and e-mail transmissions are not acceptable. To be considered for funding, proposals must be received at the Department by 4:30 pm on June 29, 2007. If mailing, please request that it is postmarked. Incomplete applications will not be considered. Proposals should be mailed or delivered to:

**Abdallah Bendada, Title II Consultant
Department of Public Instruction
P.O. Box 7841
125 S. Webster Street,
Madison, WI 53707-7841**

b. **Review Process:** Proposals will be reviewed for completeness and compliance with the requirements set forth by DPI to determine applicant eligibility. If the proposal is late, incomplete, or an applicant cannot establish its eligibility, the proposal will be eliminated from the competition. The decision of the department is final. Applicants submitting proposals that are eliminated will be notified in writing.

An expert review panel will evaluate eligible applications in light of the required application components and the established criteria. The review panel will review each eligible application and make recommendations to the department. Consideration is based upon the following criteria: final score assigned each proposal by the review panel; a cost-effectiveness ratio determined by the relationship between the number of teachers served, the total cost of the program; and geographic distribution.

Following the review, the department staff will contact selected project directors to discuss any modifications of the project plan that may be required. To maximize the effects of limited funds, applicants whose grants are recommended may be requested to revise the project budget and/or scope of work.

Award Administration

a. **Notification of the Award:** Within thirty days of completion of the review process, the project director and chief financial officer will be notified of the status of their proposal.

b. **Award Conditions:** For the 2007-2008 competition, approximately \$1,817,970 is available for Mathematics and Science Partnership awards. The department will fund a minimum of three projects; however, as many as ten may be awarded. The funding for this project must be expended by September 2008.

c. **Reporting Requirements:** Each eligible partnership receiving a grant must report annually to the Department of Public Instruction regarding the eligible partnership's progress in meeting the objectives and annual targets described in the partnership's accountability plan. Further information regarding reporting requirements and forms will be made available on the department's website.

Definitions

The following definitions are based on the definitions included in the No Child Left Behind Act of 2001.

- A. **Highly Qualified Teacher:** A highly qualified teacher meets all of the requirements of PI 34 for the subjects and levels that he/she is teaching. The requirements include, but are not limited to, a bachelor's degree, completion of an approved licensing program, and a rigorous exam in the subjects being taught. In addition, a highly qualified teacher may be a teacher of record who is enrolled in a state-approved alternative teacher-training program.
- B. **Professional Development:** The term "professional development" means instructional activities that:
1. Are based on scientifically based research and state academic content standards, student academic achievement standards, and assessment;
 2. Improve and increase teachers' knowledge of the academic subjects they teach;
 3. Enable teachers to become highly qualified; and
 4. Are sustained, intensive, and classroom-focused in order to have a positive and lasting impact on classroom instruction and the teacher's performance in the classroom.
- C. **Experimental Design:** The term experimental design is a research method used the power of statistics to measure the growth of a given variable or treatment of a group compared to a baseline group. The group in an experiment which receives the specified treatment is called the *Treatment Group* or the experimental group. However, the term *Control Group* refers to another group assigned to the experiment, but not for the purpose of being exposed to the treatment. Thus, the performance of the control group usually serves as a baseline against which to measure the effect of the full treatment on the treatment group. All members of each group should be selected randomly.
- D. **Scientifically Based Research:** The term "scientifically based research" means research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs and includes research that:
1. Employs **systematic, empirical** methods that draw on observation or experiment and involve rigorous data analyses that are adequate to test the stated hypotheses and justify the general conclusions drawn;
 2. Relies on **measurements or observational** methods that provide reliable and valid data across evaluators and observers, across multiple measurements and observations, and across studies by the same or different investigators;
 3. Is **evaluated using experimental or quasi-experimental** designs in which individuals, entities, programs, or activities are assigned to different conditions, with appropriate controls to evaluate the effects of the condition of interest and with a preference for random-assignment experiments or other designs to the extent that those designs contain within-condition or across-condition controls;
 4. Ensures that **experimental studies are presented** in sufficient detail and clarity to allow for replication or, at minimum, to offer the opportunity to build systematically on their findings; and
 5. Has been **accepted by a peer-reviewed journal or approved by a panel** of independent experts through a comparably rigorous, objective, and scientific review.
- E. **Summer Workshop or Institute:** The term "summer workshop or institute" means a workshop or institute, conducted during the summer, that:
1. Is conducted for a period of at least two weeks;
 2. Includes, as a component, a program that provides direct interaction between teacher participants and faculty; and
 3. Provides for follow-up training during the academic year that is conducted in the classroom for a period of not less than three consecutive or nonconsecutive days.
- F. **Other Partners:** This may include educational organizations, nonprofit organizations, for profit organizations, education departments, science education and mathematics education departments. It is expected that all partnerships will contribute to the project by direct involvement, or by providing funds, resources, or services.

Allowable Expenditures

The MSP Program funds must be spent exclusively on costs associated with providing high quality, content-specific professional learning opportunities to mathematics and/or science teachers of grades K-12. In general, it is expected that MSP partnerships will spend approximately \$30-\$40 per teacher per contact hour on the total cost of their MSP Program work. The following table provides further specificity to allowable expenses.

Category	Guidelines
Teacher Stipends	Not to exceed \$135 per 8-hour day during off-contract time; teacher fringe benefits may be covered by MSP grant funds
Substitutes	Up to \$100/day when MSP training sessions take place during teacher contract time
Project Management Team Salaries	Not to exceed 10% of the project director's salary and 5% of project leaders' salaries
Coaches' Salaries	Not to exceed 35% of an instructional coach's salary
Consultants and Contracts	Not to exceed \$50/presentation hour for consultants or presenters; not to exceed \$35/presentation hour for system/RESA personnel
Higher Education Faculty	Regular salary per hour of contact time; 50% of salary per hour of planning/preparation time
Evaluator	5%-10% of total project budget must be spent on a formal project evaluator.
Travel	Reimburse mileage, meals, and lodging according to state/system guidelines for project-related travel
Management Team Events	Reimburse travel expenses for management team participation in ED and DPI-hosted MSP events according to state/system guidelines.
Materials and Supplies	Funds may be spent on materials and supplies to facilitate professional learning of teachers, not on classroom instructional materials.
Indirect Costs	Not to exceed 8%

Additionally, MSP Program funds cannot be spent on equipment (e.g. smart boards, computers, printers, camcorders, etc.), capitol improvements, facility rentals, administrative or clerical personnel, full salaries, and tuition charges and/or university fees (already covered in higher education partner's salaries and fringe).

Scoring Rubric for MSP Repeat Applicant Proposals Abstract

Effectiveness of Prior State Support

Does the repeat project’s proposal abstract clearly describe the goals and objectives of its funded proposal? Does it delineate how the project budget was spent during each year of funding? Does it include the number of teachers it intended to serve (as evidenced in the funded proposal) as well as the number it actually served? Does it effectively describe progress towards goals through a thorough description of the work that was performed and evaluated? Is compelling justification provided to explain any unintended results or challenging situations faced by the partnership?

Strong	Average	Weak
Strong evidence that prior project worked with more teachers than intended according to its funded proposal	Evidence that prior project worked with as many or nearly as many teachers as it originally intended; or Provides acceptable explanation of why project did not work with intended number of teachers.	Evidence that prior project worked with significantly fewer teachers than intended; or Lacks evidence that prior project worked with intended number of teachers as stated in its funded proposal.
Evidence that prior project used most or all of its allotted budget; Evidence that budget was spent effectively and appropriately to meet teacher needs	Evidence that prior project used the majority of its allotted budget; Evidence that budget was spent appropriately on teacher needs	Lacks evidence that prior project spent its allotted budget effectively and appropriately
Reliable quantitative <u>and</u> qualitative evidence that prior project work resulted in substantial gains in teacher content knowledge	Quantitative and qualitative evidence that prior project work resulted in gains in teacher content knowledge	Lacks evidence that prior project work resulted in gains in teacher content knowledge
Compelling quantitative <u>and</u> qualitative evidence that prior project completed proposed work and met goals and objectives.	Clear evidence that prior project completed proposed work and met goals and objectives; or Provides acceptable justification of why prior project was not able to meet goals and objectives.	Lacks evidence that prior project met goals and objectives; or Lacks narrative evidence justifying why prior project did not meet its intended goals and objectives
Clear and compelling description of how prior project intends to use new funding to inform or build upon previous successes and lessons learned.	Acceptable description of how prior project generally intends to use new funding to inform or build upon previous successes and lessons learned.	Lacks narrative explanation of how prior project intends to use new funding to inform or build upon previous successes and lessons learned.

Evaluation Rubric

- A. **Needs Assessment:** The needs assessment should indicate a clear statement of needs derived from a comprehensive needs assessment and how the goals and objectives of the program are directly related to those needs.

Weak	Average	Strong
<p>The needs assessment:</p> <ul style="list-style-type: none"> • did not identify gaps or weaknesses addressed by the program. • provides no evidence the LEA has a large population of students who have historically been underrepresented using WINSS and WKCE. • provides little or no baseline data and analysis using local assessment, WKCE, and WINSS to guide the program. • goals and objectives are not measurable and do not address identified needs. • provides no information how the partnership selected the program developed. 	<p>The needs assessment:</p> <ul style="list-style-type: none"> • identifies some gaps or weaknesses addressed by the program. • provides some evidence the LEA has a large population of students who have historically been underrepresented using WINSS and WKCE. • provides some baseline data and analysis using local assessment, WKCE, and WINSS to guide the program. • goals and objectives are measurable and address some identified needs. • provides some information on how the partnership selected the program developed. 	<p>The needs assessment:</p> <ul style="list-style-type: none"> • identifies very specific gaps or weaknesses addressed by the program. • provides clear and convincing evidence the LEA has a large population of students who have historically been underrepresented using WINSS and WKCE. • provides clear quantitative baseline data and analysis using local assessment, WKCE, and WINSS to guide the program. • goals and objectives are specific and measurable and address each need identified. • provides clear information how the partnership selected the program developed.

B. Scientifically Based-Research: The literature review should discuss and cite the current state of knowledge relevant to the program. This brief literature review should clearly indicate why the proposed activities were selected or designed. If the proposal builds on prior work, lessons learned are described and how these lessons are incorporated in the program is included.

Weak	Average	Strong
<p>The literature reviewed:</p> <ul style="list-style-type: none"> • does not support the program. • vaguely states lessons learned from prior work. • does not provide references that employ sound research methods. • does not cite research from peer reviewed journals. 	<p>The literature reviewed:</p> <ul style="list-style-type: none"> • supports some of the proposed activities selected or designed in the program. • states some lessons learned from prior work. • provides references that employ some sound research methods. • cites some accepted research sources from peer reviewed journals. 	<p>The literature reviewed:</p> <ul style="list-style-type: none"> • clearly defines and supports the proposed activities selected or designed in the program. • supports and clearly states lessons learned on prior work. • provides references that employ sound research methods. • cites accepted research sources from peer reviewed journals.

C. Work Plan: A proposal must clearly describe the program activities based on the measurable goals, objectives and the responsibility of each of the partners. The program description should indicate a timeline and an estimated number, type, duration and intensity of professional development activities.

Weak	Average	Strong
<p>The work plan:</p> <ul style="list-style-type: none"> • does not describe specific program activities that link the goals and objectives stated in the program or the data provided by the needs assessment. • the responsibilities of the partners are not defined and they account for few goals and objectives. • does not define the timelines for the program. • does not describe how activities will increase the number of teachers who participate in the professional development. • does not explain how professional development activities are linked with state content standards. • does not explain how professional development activities linked with teacher standards. • does not explain how professional development activities aligned with PI 34. 	<p>The work plan:</p> <ul style="list-style-type: none"> • provides some program activities that link the goals and objectives stated in the program and the data provided by the needs assessment. • describes some responsibilities of the partners and accounts for how some of the goals and objectives in the program will be met. • provides general timelines as to when activities will occur. • describes how the activities will increase the number of teachers who will participate in the professional development. • links the professional development activities with state content standards. • links professional development activities with teacher standards. • links professional development activities with PI 34. 	<p>The work plan:</p> <ul style="list-style-type: none"> • provides specific and clear program activities that link the goals and objectives stated in the program and the data provided by the needs assessment. • clearly defines the responsibilities of partners and fully accounts for how all the goals and objectives in the program will be met. • provides definitive timelines as to when activities will occur and their duration. • clearly describes how the activities will increase the number of teachers who will participate in professional development. • clearly aligns professional development activities with state content standards. • clearly aligns professional development activities with teacher standards. • clearly aligns professional development activities with PI 34.

D. Commitment and Capacity of Partnership: The program description must clearly demonstrate the submitting partnership has the capability of managing the program, organizing the work, and meeting deadlines.

Weak	Average	Strong
<p>The partnership:</p> <ul style="list-style-type: none"> • does not provide information about how the program will be managed. • does not describe a process for meeting critical needs and/or deadlines. • does not describe an explanation for making decisions. • does not describe roles for each partner in the program. • does not explain how the partnership will continue beyond the three year grant. 	<p>The partnership:</p> <ul style="list-style-type: none"> • demonstrates the ability to manage the program. • describes a general process for meeting critical needs and deadlines. • describes a general explanation for making decisions. • describes roles for each partner in the program. • explains in general terms how the partnership will continue beyond the three year grant. 	<p>The partnership:</p> <ul style="list-style-type: none"> • provides a management plan outlining the ability to manage the program. • outlines a clear process for meeting identified needs and deadlines. • describes a clear process for making decisions. • describes specific and definitive roles for each partner in the program. • provides a projected plan and timeline for how the program will continue beyond the three year grant funding.

E. Evaluation Plan: Each application should identify process and outcome research and evaluation methods that the program will use and explain why those methods are appropriate to the identified needs the proposal addresses. A proposal must make a compelling case for the activities of the program and describe how the activities will help the MSP program build a rigorous, cumulative, reproducible, and usable body of findings.

Weak	Average	Strong
<p>The evaluation plan:</p> <ul style="list-style-type: none"> • is not based on the use of scientific methods or comparison groups. • has no measurable objectives or annual targets which describe progress towards meeting the goals and objectives established in response to the identified needs. • does not measure activities and the number and characteristics of teachers participating in professional development. • does not measure student academic achievement or compare with baseline data. 	<p>The evaluation plan:</p> <ul style="list-style-type: none"> • is based on the use of a comparison group of students, schools, or districts utilizing experimental or quasi-experimental design. Description of comparison group(s) is vague or incomplete. • has some measurable objectives and targets which may indicate progress towards meeting the goals and objectives in response to the identified needs. • measures some of the activities and the number and characteristics of teachers participating in professional development. • measures student academic achievement on WKCE in mathematics and/or science assessments compared to baseline data. 	<p>The evaluation plan:</p> <ul style="list-style-type: none"> • provides an evaluation plan based on an experimental or quasi-experimental design. Description of comparison group(s) construction is thorough and clear. • has clear measurable objectives and annual targets which describe progress toward meeting the goals and objectives in response to the identified needs. • clearly measures all activities and the number and characteristics of teachers participating in professional development. • clearly measures the student academic achievement on local assessment, WKCE, and other mathematics and/or science assessments compared to baseline data.



Wisconsin Department of Public Instruction
MATHEMATICS AND SCIENCE PROGRAM PARTNERSHIPS
APPLICATION / REQUEST FOR PROPOSAL
 PI-9550-IIB (Rev. 3-07)

Collection of this information is a requirement of ESEA 2001, NCLB Education Act, Title II, Part B—Mathematics and Science Partnerships Program

Refer to detailed instructions and information contained in handbook.

INSTRUCTIONS: Applicants must submit an original and four copies of the full proposal to the Wisconsin Department of Public Instruction. The original must include an original signature of the authorized institutional official on the cover page. Fax and e-mail transmissions are not acceptable. To be considered for funding, proposals must be received at the Department by **4:30 pm on June 29, 2007**. If mailing, please request that it is postmarked. Incomplete applications will not be considered. Proposals should be mailed or delivered to:

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
ATTN: ABDALLAH BENDADA
P.O. BOX 7841
MADISON, WI 53707-7841

GENERAL INFORMATION		
Applicant School District	Mailing Address <i>Street, City, State, Zip</i>	
Contact Person	Title	Telephone <i>Area/No.</i>
Principle Investigator <i>If other than contact person.</i>	Title	Telephone <i>Area/No.</i>
Principle Investigator's Mailing Address, <i>Street, City, State, Zip</i>		
Total Mathematics and Science Partnership Funds Requested	No. of Teachers to be Served <i>Including teachers from all partners.</i>	No. of Students to be Served <i>Including students from all partners.</i>

ASSURANCES
Should an award of funds from the Mathematics and Science Partnership Program be made to the applicant in support of the activities proposed in this application, the signatures below certify to the Department of Public Instruction that the authorized official will:
<ol style="list-style-type: none"> 1. Upon request, provide the Department of Public Instruction with access to records and other sources of information that may be necessary to determine compliance with appropriate federal and state laws and regulations; 2. Conduct educational activities funded by this project in compliance with the following federal laws: <ol style="list-style-type: none"> a. Title VI of the Civil Rights Act of 1964 b. Title IX of the Education Amendments of 1972 c. Section 504 of the Rehabilitation Act of 1973 d. Age Discrimination Act of 1975 e. Americans with Disabilities Act of 1990 f. Elementary and Secondary Schools Act (No Child Left Behind Act of 2001) 3. Use grant funds to supplement and not supplant funds from nonfederal sources. 4. The focus of the program is on teachers who work with children of color and teachers who work with economically disadvantaged. 5. Submit, in accordance with stated guidelines and deadlines, all program and evaluation reports required by the U.S. Department of Education and the Department of Public Instruction.

SIGNATURES	
WE HEREBY CERTIFY that to the best of our knowledge the information in this application is correct, that the filing of this application is duly authorized by the governing body of the organizations and institutions, and that the applicants will comply with the statement of assurances.	
Name of Authorized School District Official	
Signature of School District Official ➤	Date Signed
Name of Authorized Higher Education Institution Official	
Signature of Authorized Higher Education Institution Official ➤	Date Signed

PARTNER IDENTIFICATION

School District	
School District	LEA Code

Program Title

Principle Investigator	Title	
Address <i>Street, City, State, ZIP</i>	Telephone <i>Area/No.</i>	Fax <i>Area/No.</i>

E-Mail Address

Higher Education Partner

Primary Contact	Title	
Address <i>Street, City, State, ZIP</i>	Telephone <i>Area/No.</i>	Fax <i>Area/No.</i>
E-Mail	Type of Institution/Organization	

Other Partners Attach additional sheet(s) as necessary.

Partner

Administrator	Title	
Address <i>Street, City, State, ZIP</i>	Telephone <i>Area/No.</i>	Fax <i>Area/No.</i>
E-Mail	Signature ➤	Date Signed

Partner

Administrator	Title	
Address <i>Street, City, State, ZIP</i>	Telephone <i>Area/No.</i>	Fax <i>Area/No.</i>
E-Mail	Signature ➤	Date Signed

Partner

Administrator	Title	
Address <i>Street, City, State, ZIP</i>	Telephone <i>Area/No.</i>	Fax <i>Area/No.</i>
E-Mail	Signature ➤	Date Signed

Partner

Administrator	Title	
Address <i>Street, City, State, ZIP</i>	Telephone <i>Area/No.</i>	Fax <i>Area/No.</i>
E-Mail	Signature ➤	Date Signed

REPEAT APPLICANT ABSTRACT

Describe the goals and objectives of it funded proposal. Delineate how the project budget was spent during each year of funding. Include the number of teachers it intended to serve (as evidenced in the funded proposal) as well as the number it actually served. Describe the progress towards goals through a thorough description of the work that was performed and evaluated.

BUDGET SUMMARY

Fiscal Agent	Grant Period	Initial Request	Date Submitted	
	Beg.		First Revision	Second Revision
Project Number <i>For DPI Use Only</i>	End			

Budget Revisions: Submit a copy of this page, with appropriate revisions included. (Attach this to a brief letter of justification.) **Note:** Submit request at least **30 days** prior to expenditure of grant monies.

WUFAR Function	WUFAR Object	Year 1	Year 2	Year 3
Instruction (100 000 Series) Activities dealing directly with the interaction between Higher Education faculty and K-12 staff.	a. Salaries (100s)			
	b. Fringe Benefits (200s)			
	c. Purchased Services (300s)			
	d. Non-Capital Objects (400s)			
	e. Capital Objects (500s)			
	f. Other Objects (e.g., fees) (900s)			
	TOTAL Instruction		\$0	
Support Services—Pupil and Instructional Staff Services (in 210 000 and 220 000 Series) Support services are those which facilitate and enhance instructional or other components of the grant. This category includes staff development, supervision, and coordination of grant activities.	a. Salaries (100s)			
	b. Fringe Benefits (200s)			
	c. Purchased Services (300s)			
	d. Non-Capital Objects (400s)			
	e. Capital Objects (500s)			
	f. Other Objects (e.g., fees) (900s)			
	TOTAL Support Services—Pupil/Instructional Staff Services		\$0	
Support Services—Administration (Associated with functions in 230 000 series and above.) Includes general; building; business; central service administration, and insurances.	a. Salaries (100s)			
	b. Fringe Benefits (200s)			
	c. Purchased Services (300s)			
	d. Non-Capital Objects (400s)			
	e. Capital Objects (500s)			
	f. Insurance (700s)			
	g. Other Objects (e.g., fees) (900s)			
TOTAL Support Services—Admin.		\$0		
Indirect Cost	Approved Rate % <i>Maximum 5% of subtotal costs</i>			
TOTAL BUDGET		\$0		
DPI Approval DPI Reviewer Signature/Date ➤				