

Mathematics & Science Partnerships

2006

Learning Network Conference



Teacher Quality

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION
Elizabeth Burmaster, State Superintendent

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Mathematics & Science Partnerships

2003-2006

Green Bay

La Crosse

Madison

Menominee Indian

Rice Lake

2004-2007

La Crosse

Laona

Madison

Milwaukee Public Schools

Sharon J11



2005-2008

Blair-Taylor

Kenosha

Laona Mathematics

Laona Science

Milwaukee Public Schools

Nekoosa

Racine

Superior



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Included in this conference book is:

- Application Package for MSP Program Green
- MSP Application/Request for Proposal Yellow
- USDE MSP Project Profile Pink
- MSP Annual Performance Report Manual.....Blue

Welcome

Wisconsin's Mathematics and Science Partnerships Initiative



Teachers make a difference in the lives of their students. Whether it is encouraging the reluctant reader, inspiring the math wiz, or nurturing the dreamer's creativity in science, good teachers love working with children and parents. Together throughout our state, students, parents, and educators are working hard to increase the achievement of all students and close the achievement gap.

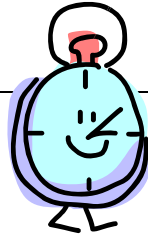
Wisconsin's Mathematics and Science Partnership (MSP) Initiative provides

teachers with the tools needed to make a difference in their students' lives. 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. Through interactions with their peers, experts, and the university professors, teaching skills are enriched and enhanced.

I invite you to read about these exciting initiatives. Activity summary and contact information for each initiative is available in this publication. I encourage you to learn how you or your school can become involved in one of the MSP initiatives or find out how your school can be a part of future MSP initiatives.

Elizabeth Burmaster
State Superintendent

Agenda



<i>7:30-8:30 a.m.</i>	Breakfast
<i>8:30-8:35 a.m.</i>	Introduction, Abdallah Bendada (DPI)
<i>8:35-9:00 a.m.</i>	Welcome, Deborah Mahaffey (DPI)
<i>9:00-9:45 a.m.</i>	Teacher Quality, Henry Kepner (UWM)
<i>9:45-9:55 a.m.</i>	Title II, Part B – Overview (DPI)
<i>9:55-10:05 a.m.</i>	Title II, Part A – Overview (UWW)
<i>10:05-10:15 a.m.</i>	Break
<i>10:15-11:15 a.m.</i>	Panel (Julie Stafford, and LeRoy Lee, WASDI; Sue Wolfe, Nekoosa: DeAnn Huiker, UWM)
<i>11:15-12:00 p.m.</i>	Project Evaluation – Marge Wilsman (WCER)
<i>12:00-1:00 p.m.</i>	Lunch and Networking Time
<i>1:00-1:45 p.m.</i>	Teacher Quality, John Whitsett (NSTA)
<i>1:45-2:10 p.m.</i>	Integration of AP with MSP, Anna Suarez and Mary Ellen Seavey (College Board)
<i>2:10-2:30 p.m.</i>	Survey of Enacted Curriculum (DPI)
<i>2:30-2:40 p.m.</i>	Break
<i>2:40-3:15 p.m.</i>	Breakout sessions for networking
<i>3:15-3:20 p.m.</i>	Reflection
<i>3:20-3:30 p.m.</i>	Applications and RFPs (DPI)
<i>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.

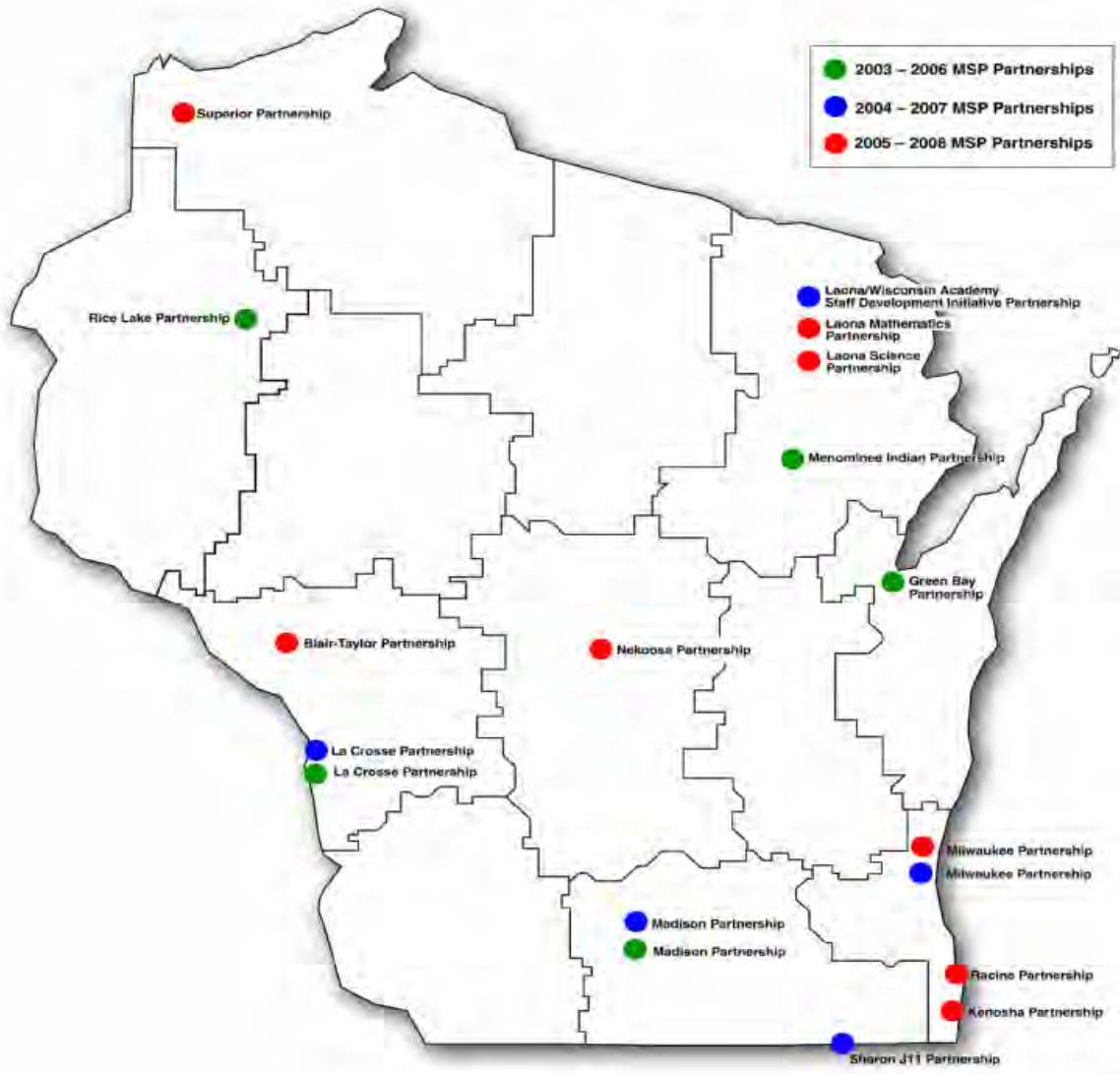
Partnerships between these high-need school districts and the science, technology, engineering, and mathematics (STEM) faculty in institutions of higher education are at the core of each MSP. Each individual partnership focuses on increasing and enhancing the content knowledge and teaching skills of classroom teachers of mathematics and science; are typically for 2 to 3 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%, 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% of the student population is from families with income below the poverty line as identified by the Census 2000, 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 2004/05 data.

MSP Program Locations

Mathematics and Science Partnership Program



Presenters

Welcome

Deborah J. Mahaffey
8:35 a.m. - 9:00 a.m.
Ballroom

Deborah J. Mahaffey was appointed Assistant State Superintendent of the Division for Academic Excellence, Wisconsin Department of Public Instruction, effective September 7, 2004, by Superintendent Elizabeth Burmaster. Debbie's previous roles at the Wisconsin Technical College System (WTCS) include vice president for instruction, student services, and economic development; director of the bureau of student and support services; executive assistant to the State Director; education consultant; and education specialist. She also served as job placement director and alumni association executive secretary at the Madison Area Technical College. Debbie holds an M.S. in guidance and counseling and a B.S. in the double majors of psychology and communications from the University of Wisconsin-Superior. Debbie's professional activities include co-chairing the UW/WTCS joint administrative committee on academic programs and service on the UW-Extension Board of Visitors, Wisconsin Public Broadcasting Foundation, Workforce Committee of the Council on Workforce Investment, Wisconsin Development Fund Board, UW-Superior Foundation, and Collaborative Council and International Education Council.

Debbie will provide strong leadership in DPI's efforts to connect high standards and academic rigor to developing productive citizens and preparing our students for their roles in families, postsecondary education, the world of work, and society as a whole. She also understands our critical need to help prepare, recruit, and retain the finest educators to help our students learn and carry out our commitment to ensure the opportunity of a quality education for every child.

Presenters

Teacher Quality

Henry Kepner

9:00 a.m. - 9:45 a.m.

Ballroom

Henry Kepner takes his expertise in mathematics education directly to school districts and classrooms, both locally and nationally. His research interests in mathematics education, teacher education, and the mathematical knowledge of teachers have resulted in numerous publications, funded projects, professional development programs, and speaking engagements. He holds an adjunct appointment in the Department of Mathematical Sciences.

Kepner served five years as program officer at the National Science Foundation in Washington, D.C. He was a founding member and first president of the Association of Mathematics Teacher Educators. He has been president of the National Council of Supervisors of Mathematics, the Wisconsin Mathematics Council, and the Milwaukee Educational Computing Association. He served on the boards of directors of the National Council of Teachers of Mathematics and the School Science and Mathematics Association. He also taught middle and high school mathematics for 12 years in Milwaukee and Iowa City.

In 2003, Kepner received the George G. Mallinson Award from the School Science and Mathematics Association in recognition of his accomplishments and contributions to mathematics education over the past 43 years. In 2004, he received the School of Education Teaching Award. Kepner earned his M.S. degree in mathematics and Ph.D. in mathematics education at the University of Iowa.

Presenters

Project Evaluation

Marge Wilsman

11:15 a.m. -12:00 p.m.

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% 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.

Presenters

Teacher Quality

John Whitsett

1:00 p.m – 1:45 p.m.

Ballroom

John Whitsett has been actively involved in education for 35 years and is currently a physics teacher and curriculum support teacher in the Fond du Lac School District. Previously he was with the School District of La Crosse where he taught chemistry and served as the Supervisor of Science and Math. He holds a BS and masters degree from the University of Wisconsin-La Crosse and a school administration program from the University of Wisconsin-Madison.

John spent eleven years as the high school teacher component of the Science World program and was the co-principal investigator on several National Science Foundation sponsored programs at the University of Wisconsin-La Crosse. He has pursued additional professional development programs including the Hope College Advanced Placement Chemistry Institute, the Dreyfus Institute and the Woodrow Wilson Chemistry Institutes at Princeton University, the Wisconsin Academies Staff Development Initiative (WASDI) lead teacher program, the WASDI mentor training program, as well as number of lab safety training institutes.

He has written numerous monographs on lab safety for the Wisconsin Science Network and are available through the Wisconsin Society of Science Teachers (WSST). John served as a lab safety consultant for many school districts and has presented lab safety training sessions for the Wisconsin Department of Public Instruction. He is a long time member of the Wisconsin Society of Science teachers where he served as president in 1991, convention chair in 1988 and 2000, WSST Foundation president, and chair of several committees. He is a member of the National Science Teachers Association where he was District XII Director, several committee assignments including Nominations & Elections, Budget & Finance, and the Audit Committee.

John was the local arrangements chair for the 2000 NSTA Regional Conference in Milwaukee. John was recently elected president-elect of NSTA. He has been recognized for his accomplishments by being named Teacher of the Year in both the Fond du Lac and La Crosse school districts. He is a member of the Building a Presence /Wisconsin Science Network and was named a Fellow of that organization in 2005. John is a recipient of the Ron Gibbs Award for lifetime achievement from WSST, the Outstanding Chemistry Teacher Award from the American Chemical Society, and the 1986 Presidential Award for Excellence in Science Teaching.

Presenters

Integration of AP with MSP

Anna R. Suarez

1:45 p.m – 2:10 p.m.

Ballroom

Anna Suarez is a consultant to the College Board on federal grant funding initiatives. In this capacity, Ms. Suarez provides insights into upcoming federal grant programs, interprets guidelines, and provides grant writing support. Ms. Suarez will primarily focus on expanding the dissemination of Pre-AP and AP programs to underrepresented groups through the Department of Education's *Math and Science Partnership* program, a state-level. This work promotes the inclusion of Pre-AP and AP language into state-level RFPs and grant writing support to universities and school districts wishing to implement Pre-AP and AP staff development programs to underserved students.

Prior to working as an independent consultant, Ms. Suarez was an Associate Vice President of The Implementation Group, Inc (TIG). During her 3 year tenure at TIG, Ms. Suarez provided consulting services to the College Board, universities, school systems, and other organizations in science & mathematics education, and research improvement. She has extensive experience in designing, writing, implementing, monitoring education initiatives through her work at TIG and the National Science Foundation. Ms. Suarez provides clients with in-depth support in the development of competitive proposals and improving institutional R&D infrastructures.

Ms. Suarez spent several years at the National Science Foundation (NSF) as a Program Director in the Division of Elementary, Secondary, and Informal Science Education. In this capacity, Ms. Suarez worked extensively with Teacher Enhancement projects to promote mathematics reform efforts.

Ms. Suarez earned her B.S. degree from the University of South Florida and her M.S. in Educational Administration with an emphasis in Mathematics Education from the University of Wisconsin-Madison. She resides in Kensington, Maryland with her two children.

Presenters

Integration of AP with MSP

Mary Ellen Seavey

1:45 p.m – 2:10 p.m.

Ballroom

Mary Ellen Seavey, K12 Education Manager for the Midwestern Regional Office of the College Board, works with schools, districts, and state educational agencies to provide support for the effective implementation of programs designed to connect more students with rigor academic experiences and opportunities for college success. Prior to joining the College Board in January 2005, Mary Ellen was a tenured member of the faculty at Northwest High School, House Springs, MO where she served as Social Studies Department Chair and a member of the district’s Professional Development Committee. As part of her work, Mary Ellen oversaw the development and implementation of various Advanced Placement courses including AP U.S. Government & Politics and AP US History. Mary Ellen received a M.Ed. in Secondary Curriculum and Instruction from the University of Missouri – Saint Louis in 2001 and earned certification in Adolescence/Young Adulthood Social Studies/History by the National Board for Professional Teaching Standards in 2003.

Mathematics & Science Partnerships

Green Bay
Est. 2003

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CESA 7

Green Bay Area School
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Manitowoc School District

UW-Green Bay

Math Partnership

The Green Bay Area Public Schools and the University of Wisconsin-Green Bay, in concert with the Manitowoc Public School District and CESA 7 focused efforts on addressing the critical need to improve mathematics achievement by deepening math content knowledge of participating teachers from grades 5-8. The goals of the project were determined through a comprehensive needs assessment of teacher quality and professional development in mathematics at the middle school level. Because of the remarkably congruent responses among mathematics teachers, the partnership grant concentrated on strengthening teacher understanding of mathematics and building proficiency with standards-based instructional strategies.

Participating teachers completed two graduate-level professional development courses, grounded in math reform, successful instructional strategies and alternative assessment techniques. In addition to the graduate work, trained math facilitators supported the learning by scheduling regular classroom visits, doing classroom observations, and coaching the teachers as they implemented the newly-discovered instructional strategies. The project incorporated the most relevant scientific research on mathematics, while launching a new partnership among two high-need school districts, the applied mathematics faculty of a University of Wisconsin institution, and a CESA agency.

The evaluation plan addresses five questions:

1. How highly do participating mathematics teachers value the activities that make up the professional development intervention?
2. How does the professional development intervention increase understanding of mathematics content?
3. How does the professional development intervention change instructional practice within classrooms?
4. How does the professional development intervention contribute to a progression of middle school mathematics teachers toward meeting the definition of “highly qualified teacher” in the area of mathematics?
5. What is the potential impact of the professional development intervention on improved student academic achievement in mathematics?

As Green Bay students enter sixth grade and Manitowoc students enter seventh grade math achievement levels are expected to increase. They will experience a seamless transition between elementary and middle school with respect to math instruction. Generalists who teach at the elementary level will deepen their math content and knowledge and advance their classroom skills.

Mathematics & Science Partnerships

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Est. 2003

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La Crosse School District

Onalaska School District

UW - La Crosse

Enhancing Teachers' Math Content Knowledge and Student Performance Through Innovation and Application

The project was designed to increase student learning in mathematics by enhancing teacher content knowledge in math (specifically statistics and probability) through applied content-driven projects focused on inquiry-based topics and student assessment, technology integration, and cohort groups. Project directors recruited 9 teachers from southeastern Wisconsin. Teachers completed two weeks of intense training in math content during summer 2004. During the 2004-2005 school year teachers worked independently and in cohort groups and attended a large group meeting in January 2005. A final meeting was held in June 2005.

Mathematics & Science Partnerships

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Partners:
Beloit School District

Juda School District

Madison Metropolitan School
District

Sauk Prairie School District

UW - Madison

Math Masters Project, Madison Metropolitan School District, University of Wisconsin – Madison, SCALE (an NSF Math/Science Partnership)

The Math Masters Project is designed to improve the content knowledge of middle school mathematics and mathematics support teachers. There are 4 school districts in south central Wisconsin that have teachers participating in the Math Masters Project, including Madison, Beloit, Sauk Prairie, and Juda.

The program has been designed around the different strands of mathematics. There are four 20-hour courses that participants can sign up for: Algebra, Geometry, Measurement, and Probability and Statistics. Each course is team taught by a UW Mathematics Professor and an MMSD Middle School Math Resource Teacher. All twenty hours of course time is spent in workshops during evenings and weekends working on mathematics that is designed to help middle school teachers master the math they are teaching and then familiarize them with the math their students will be seeing in future classes at the high school level. Each course has an optional 20-hour online course working on effective mathematics instruction.

Mathematics & Science Partnerships

Menominee Indian
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Menominee Indian School
District

Menominee Tribal School,
Neopit

UW - Oshkosh

Creating Middle School Classrooms Containing an Atmosphere of Mathematical Reasoning and Problem Solving

The Menominee Indian School District, the Menominee Tribal School and the University of Wisconsin Oshkosh entered a partnership to address low student achievement in mathematics for grades 4-8. The program was designed to increase the mathematical reasoning and problem solving skills of middle school students. What took place was an intensive professional development experience for 26 mathematics teachers that emphasized mathematical problem solving, mathematical content and appropriate pedagogies that will enhance the current curriculum.

The program consisted of a two-week (summer 2004) workshop, an academic year follow-up consisting of three 4-hour workshops and seven day long classroom visits and, finally, a three-day concluding workshop in summer 2005. All activities were focused on developing reasoning and problem solving skills required to succeed on the 8th grade WKCE.

The project instilled confidence by giving teachers experience to lead their students in true mathematical problem solving activities and worked to change the overwhelming belief that mathematics is a collection of techniques at which students need to become skilled.

The major goal of the partnership was to develop a program to increase student learning. Working toward this goal our program activities were designed to increase participants' content knowledge while they came to understand mathematics as a process of which an answer is a part, not the whole.

Mathematics & Science Partnerships

Rice Lake/WASDI
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CESA 10, 11, & 12

Flambeau School District

Ladysmith-Hawkins

Menomonie Area District

Mercer School District

Northland College

Rice Lake Area District

Solon Springs District

South Shore District

Spooner School District

Superior School District

UW – Eau Claire, River Falls
UW – Stout, Superior

Webster School District

Winter School District

WASDI
- Gitche Gume Academy
- Star Academy

Northern Wisconsin Mathematics and Science Partnership

The NWMSP was a partnership of ten districts from northwest Wisconsin, the University of Wisconsin –Barron County and the Wisconsin Academy Staff Development Initiative (WASDI). The Rice Lake School District was the recipient of the grant and served as fiscal agent. Twenty-nine middle school teachers participated from Augusta, Flambeau, Ladysmith, Menomonie, Winter, Rice Lake, Spooner, Superior, and Webster. Each group of teachers (mathematics and science) were provided professional development experiences in what it means to design and implement standards based programs and improve learning outcomes for middle level students. The experiences focused on developing the content and pedagogical content knowledge necessary to teach standards-based middle level science and mathematics programs and the tools necessary to bring a curriculum of high expectations to reality in middle school classrooms. The project included a two-week summer session conducted at UW-Barron County and two weekend sessions conducted during the academic year at Lakewoods Resort in Cable. The science part of the program was led by UW-BC, UW-Stout, and Northland College science faculty who presented topics in their areas of expertise in physics, chemistry, life science, and earth science. Experienced teachers worked with the participants in lesson development and student assessment.

UW-Eau Claire Mathematics Department faculty led the mathematics part of the program. Topics such as the rationale behind the movement to standards-based mathematics programs and assessment were also included. Participants had the opportunity to focus on the process and content standards and how they are translated into classroom instruction, including assessment strategies and student learning outcomes. UW-Eau Claire received a Title IIB, Higher Education Grant for 2005-2006 to continue working with teachers from these schools, including in-school work.

Evaluation indicated the participants found the professional development experiences were well planned. They appreciated the proximity of the meeting locations, UWBC and Lakewoods Resort, to their homes.

Participants also indicated that the partnership was interested in, and responsive to, their needs. The evaluation found gains in participants' content knowledge and knowledge of effective pedagogy and an increased knowledge base of the research supporting change through standards-based curricular programs.

Mathematics & Science Partnerships

La Crosse
Est. 2004

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Partners:

Blair-Taylor School
District

Holmen School District

La Crosse School District

Norwalk-Ontario-Wilton
School District

Onalaska School District

UW-La Crosse

Middle School Mathematics Certificate Program: Improving Mathematics Instruction and Student Achievement through Intensive Content Preparation, Authentic Engagement, and Collaboration

The project is designed to increase student achievement in mathematics by enhancing teacher content knowledge in mathematics through a ten-credit, applied, content-driven math certificate program, which emphasizes inquiry-based topics, constructivist teaching and learning methods, real-world applications, technology integration, cohort groups, and classroom application. The project is a joint effort among five school district partners (three of which are high-need LEAs - La Crosse, Norwalk-Ontario-Wilton, Blair-Taylor), and mathematics and archaeology faculty from the University of Wisconsin-La Crosse, to address the significant local and regional need for in-depth, content-based professional development in mathematics for middle level math teachers.

Twenty-five teacher participants are completing ten-credits of math content courses during two, three week summer institutes (summer 2005, summer 2006, equalling a total of six weeks for six credits), with one two-credit course each semester during the school year. During the first summer institute, teachers completed courses in Geometry and Measurement, Statistics, and Probability. Throughout the 2005-06 school year, teachers are completing courses in Problem Solving I and Problem Solving II, where they are engaging in a full school year of extensive inquiry-based application activities via independent and cohort group work, large group meetings, and technology mediated sessions. During the second summer session, teachers will complete courses in Numbers and Operations, Algebraic Reasoning, and Functions and Graphs. To provide active learning and reinforcement of math content and technology integration throughout the project, teachers will engage in two inquiry-based projects, project 1 - Archaeology, and Project 2 - Cemetery.

After completing the program, it is anticipated that teachers will demonstrate enhanced content knowledge as a result of the content-based coursework. Additionally, the incorporation of constructivist methods and inquiry-based application will provide teachers with a better understanding of how to apply their knowledge in the classroom, and how to assess their own and their students' learning.

Mathematics & Science Partnerships

Laona/WASDI
Est. 2004

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District

Elkhart Lake – Glenbeulah
School District

Flambeau School District

Laona School District

Mellen School District

Stockbridge School District

WASDI

UW – Barron County

WASDI Northern Wisconsin MSP - Physics

The NWMSP-Physics is a partnership of eighteen Wisconsin districts, the University of Wisconsin –Barron County and the Wisconsin Academy Staff Development Initiative (WASDI). The Laona school district is the recipient of the grant and served as fiscal agent. Nineteen teachers of physics and physical science participated from Wausau, Marshfield, Sparta, Viroqua, Amery, Alma Center, Colby, Fond du Lac, Jefferson, Whitefish Bay, Elkhart Lake, Onalaska, Superior, Stockbridge, Arrowhead, and Cochrane-Fountain City.

The professional development focuses on major concepts of physics, such as kinematics, forces and vectors, motion, mechanical energy, fluids, and waves and sound. The program is led by the UW-Barron County physics faculty. A master teacher, experienced in teaching AP Physics and AP Chemistry provides the lab experiences and works with teachers in learning the pedagogical content knowledge necessary to teach standards-based physics.

Also included is lesson development and student assessment. Participants complete and share laboratory activities based on what they are learning. All were required to present a one hour session at the spring meeting of the Wisconsin Society of Science Teachers. The 2005 two week summer session was held in the physics lab at UW-Barron County. Two academic year weekend sessions were held; one at the UW Nuclear Engineering building to look at nuclear reactor design and operation, the second as paper presentations at Wisconsin Society of Science Teachers (WSST). The 2006 two week summer session will be held in the lab at Fond du Lac High School.

Early preliminary evaluation indicates participants are gaining in content knowledge and standards based lesson design. All valued the sharing and interacting with peers. All rated the value of the sessions excellent. Most elected to receive graduate credit from Viterbo University; all satisfactorily met credit expectations.

Mathematics & Science Partnerships

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Partners:
Beloit School District

De Forest Area 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 Area School
District

SCALE (an NSF
Math/Science Partnership)

UW – Madison

Math Masters Project

The Math Masters Project is designed to improve the content knowledge of middle school mathematics and mathematics support teachers. There are 10 school districts in south central Wisconsin that have teachers participating in the Math Masters Project, including Madison, Beloit, Deerfield, Deforest, Monona Grove, Mount Horeb, Oregon, Sauk Prairie, Sun Prairie, and Wisconsin Heights.

The program has been designed around the different strands of mathematics. There are six 40-hour courses that participants can sign up for: Algebra I, Algebra II, Geometry, Measurement, Proportional Reasoning, and Probability and Statistics. Each course is team taught by a UW Mathematics Professor and an MMSD Middle School Math Resource Teacher. Thirty hours of course time is spent in workshops during evening and weekends working on mathematics that is designed to help middle school teachers master the math they are teaching and then familiarize them with the math their students will be seeing in future classes at the high school level. Ten hours of the course are spent working on effective mathematics instruction through on-line discussions between classes.

Mathematics & Science Partnerships

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Partners:
Milwaukee Partnership
Academy

Milwaukee Public Schools

UW - Milwaukee

Mathematics Fellowship for Middle Grade Teachers

The project is a collaborative effort of the Milwaukee Public Schools (MPS) and the University of Wisconsin-Milwaukee. The goal of the project is to increase the mathematics content knowledge of teachers in grades 5 through 8 in the City of Milwaukee. The “Math Fellows” are taking a series of four university mathematics content courses over four semesters from summer 2005 through summer 2006. The courses address mathematical problem solving, geometry, discrete probability and statistics, and algebraic structures. These courses were developed through the *Milwaukee Mathematics Partnership* (MMP), a project of the National Science Foundation (NSF) Math and Science Partnership Program. Through collaboration of the two programs, the MMP has been able to expand the reach and impact of its mathematics course development work originally designed for the preparation of preservice teachers to inservice teachers. All Math Fellows will receive a certificate of recognition from the district upon completion of the four courses. Some of the Fellows have entered into an accelerated program and will complete an additional two courses, including calculus, to complete a middle grades mathematics minor and be eligible for additional state licensure endorsement.

Mathematics & Science Partnerships

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Beloit Turner District

Cardinal Stritch

Dynamic Math Institute

Fontana J8 School District

Linn J6 School District

Marquette University

Sharon J11 School District

Twin Lakes #4 School
District

UW – Whitewater

Viterbo University

Walworth J1 School
District

Understanding the World Through the Language of Mathematics: Math Literacy for All

The project vision centers on all students possessing the mathematical literacy and power to use critical thinking skills to solve complex problems, and to develop mathematical meaning that allows each student to make sense of their math work by examining their ideas in a collaborative learning environment.

The project is designed to increase teacher's content knowledge and skills using inquiry, hands-on learning, using mathematical tools and connecting to challenges in the real world. Teacher training occurs in a two-week summer institute and a fall training for teachers unable to attend the summer institute. Additional training includes lesson studies by grade level, classroom visits, and coaching sessions from the summer institute faculty.

Middle school math teachers from the Southeastern Consortium, Walworth County School Districts, and districts from other counties participated. Thirty-one teachers from the consortium participated with an additional twenty-four teachers from other districts completing the first year of study. The second summer institute is from July 24 – August 4 with fall training completed during the month of September.

The goal is to train 60 teachers over the two year period. Currently we have trained 55 and expect to exceed the total number trained upon completion of year two.

Mathematics & Science Partnerships

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Alma Center – Humbird –
Merrillan School District

Bangor School District

Black River Falls District

Blair – Taylor District

Cashton School District

CESA 3 & 4

Cochrane – Fountain City
School District

Galesville – Ettrick –
Trempealeau District

Independence District

La Crosse School District

Melrose – Mindoro District

Onalaska School District

Royall School District

Sparta Area School District

UW – La Crosse

Western Wisconsin Technical
College

Whitehall School District

CESA #3 and CESA #4 Physical Science Inquiry Project

The vision of the 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. The target audience is 30 elementary and middle school teachers per year.

Based on national, state, and local needs, five project goals were identified:

- 1) Curriculum alignment,
- 2) Science content,
- 3) Constructivist pedagogy,
- 4) Learning plans, and
- 5) Student Achievement.

Teachers will participate 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. Over a three year period Institutions of Higher Education (IHE) faculty will teach eight units of physical science content that is centered on the *Wisconsin's Model Academic Standards (WMAS) for Science* and inquiry-based teaching methods.

Quasi-experimental and experimental research designs will be used to collect qualitative and quantitative data concerning both teacher performance and student achievement. Teacher feedback, the Survey of the Enacted Curriculum, and student achievement gains are expected to demonstrate that engaging in scientifically-based professional development will enhance student academic achievement in science.

Mathematics & Science Partnerships

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Partners:
Carthage College

Kenosha Unified School
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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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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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, Rhineland

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 non school 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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Partners:
Alverno College,
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

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Partners:
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District

Nekoosa School District

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 WI 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:

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Mathematics & Science Partnerships

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Westfield School District

Wisconsin Dells School
District

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 WI Model Academic Standards for Math per year to address all six standards by year 3. 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 WI 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

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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
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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.

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. The most recent publication from NCTM is titled *A Research Companion to Principles and Standards for School Mathematics* (NCTM, 2003). 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 1,500 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.

continued on to next page

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: www.werc.edu.

Wisconsin is also home to three other federal initiatives. The Milwaukee and Madison school districts are each involved with the University of Wisconsin – Madison and the University of Wisconsin – Milwaukee, 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/>

Grant Information

Mathematics and Science Education Research: <http://www.ed.gov/programs/mathresearch/applicant.html>

Applications Available: April 7, 2006

Deadline for Transmittal of Applications for CFDA 84.305A: July 27, 2006 Deadline for Transmittal of Applications for CFDA 84.305B: November 16, 2006

Teacher Quality: Mathematics and Science Education Research:

<http://www.ed.gov/programs/tqmath/applicant.html>

Applications Available: April 7, 2006

Deadline for Transmittal of Applications for CFDA 84.305A: July 27, 2006 Deadline for Transmittal of Applications for CFDA 84.305B: November 16, 2006

Teacher Quality and Quality of Other Service Providers for Students with Disabilities -- Special Education Research: <http://www.ed.gov/programs/specedtq/applicant.html>

Applications Available: April 7, 2006

Deadline for Transmittal of Applications for CFDA 84.324B: November 16, 2006

Transition To Teaching: Mathematics, Science, Special Education, etc.

<http://www.ed.gov/legislation/FedRegister/announcements/2006-1/012606b.html>

Deadline for Transmittal of Applications: TBA

Deadline for Intergovernmental Review: TBA

Early Childhood Educator Professional Development (ECEPD) Program

<http://www.ed.gov/legislation/FedRegister/announcements/2006-1/020106a.html>

Deadline for Transmittal of Applications: TBA

Deadline for Intergovernmental Review: TBA

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

Current Application Closing Date: June 15, 2006

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.

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%, 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.

APPLICATION PACKAGE
for
MATHEMATICS AND SCIENCE
PARTNERSHIPS PROGRAM

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

2006/07

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

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 \$100,000- \$160,000 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 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 the mathematics and science underlying the middle grades 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.

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. The Department of Public Instruction encourages each potential applicant to use the Surveys of Enacted Curriculum as a professional development tool in the project.

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 disaggregated 2004/05 WKCE scores, and do not currently have an 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 2000, or
2. Schools/districts having REAP (Rural Education Achievement Program) or meeting local Codes of 6, 7, or 8, or
3. Not achieving AYP in mathematics based on 2004/05 data, and

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. Abstract: 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.

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 II: Narrative 100 Point**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 **July 24, 2006**. 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 2006-2007 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.

d. Timelines:

RFP posted: March, 20, 2006
MSP Conference: May 24, 2006
Application Due: July, 24, 2006
Application Review: August 18, 2006
Grant Award: September 18, 2006
Program Start: September 2006

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.

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 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 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 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 WKCE and other norm reference and/or criterion reference mathematics and/or science assessments compared to baseline data.

F. Budget Justification: The budget justification should clearly be tied to the scope and requirements of the program. The budget narrative should describe the basis for determining the amounts shown on the program budget page. All proposals should include provisions for evaluation of the activities in an annual performance report and a hardcopy of the budget.

Weak	Average	Strong
<p>The budget provides:</p> <ul style="list-style-type: none"> • no justification or justification is vague for the program costs. • no description about how all available federal, state, local and private resources will be used to coordinate services to support and sustain the program.. 	<p>The budget provides:</p> <ul style="list-style-type: none"> • justification costs of the program are reasonable and the budget meets the program needs. • a description about how all available federal, state, local and private resources will be used to coordinate services to support and sustain the program. 	<p>The budget provides:</p> <ul style="list-style-type: none"> • strong justification of costs of the program are reasonable and clearly show the budget is sufficient to meet the program needs. • a specific description about how all available federal, state, local and private resources will be used to coordinate services to support and sustain the program..



Wisconsin Department of Public Instruction
MATHEMATICS AND SCIENCE PROGRAM PARTNERSHIPS
APPLICATION / REQUEST FOR PROPOSAL
 PI-9550-IIB (Rev. 3-06)

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 **July 24, 2006**. 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	

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		
<i>DPI Approval</i>	DPI Reviewer Signature/Date ➤			



**Department of Education
Mathematics-Science Partnerships**

PROJECT PROFILE

Question Asked

Data To Be Reported

Project Information

Please provide a brief description of the project that includes types of interventions and targeted populations.

Abstract-brief project description

Please provide contact information for personnel from each partner institution.

Contact Information	
Partnership Title:	
Partner Institution	
Type of Institution:	
Principle Investigator(s):	
Address:	
Telephone:	
Fax:	
E- Mail:	

Please give an indication of the duration of the project.

Project Timeline:	
Project Start:	
Project End:	

Please list any funds that will be used on this project that are in addition to Title II, Part B funds. These funds are in addition to the budget information provided above.

Funding Information - FY 03 (Aug 03-July 04)	
Funding Source	Amount
State MSP Grant (Title II, Part B)	
<u>Federal Funds</u>	
Title II, Part A	
Title I, Part VI	
Local Education Agency	
Exxon Grant	
Other (specify)	
Total Partnership Budget:	



**Department of Education
Mathematics-Science Partnerships**

PROJECT PROFILE

Question Asked

Data To Be Reported

List the top 3 goals/objectives for this partnership:

Respondents will be provided with space into which they will type text. The information displayed on the profile will be exactly what they typed.

Partnership Goals
List the top 3 goals of this partnership
1.
2.
3.

What is the primary role of each member of the partnership?

Respondents will be asked to select from a dropdown list that includes:

- Fiscal Agent
- Host PD
- Design PD
- Deliver PD
- Evaluation
- Facilities
- Release Time for Teachers
- Student Assessment Data
- Other (Specify _____)

Role of Project Partners	
Partner:	Role of Partner

What role does the Arts and Science faculty from institute of higher education play in this partnership?

Indicate the number of faculty members participating in each of the activities.

Role of the Arts and Science faculty from the IHEs	
# A&S Faculty	Activity
	Other Specify: _____



**Department of Education
Mathematics-Science Partnerships**

PROJECT PROFILE

Question Asked

Please describe the selection criteria used for students, schools, and teachers in this Mathematics-Science Partnership. (✓ Check all that are appropriate)

What audience does this Math-Science Partnership target for intervention? (Indicate the number for each group that is appropriate)

What type of professional development activities are provided through this partnership? (Indicate duration and frequency for each type of professional development activity provided in the project)

Data To Be Reported

Participation Selection Criteria:			
	Schools	Teachers	Students
Based on Need			
Random Assignment			
Volunteer			
Administrative Selection			
Other/Combination Specify: _____			

Targeted Audience for Partnership Activities				
Targeted Audience	Type of Activity	Number		
		Elem (K-5)	Mid (6-8)	HS (9-12)
Regular Mathematics Teachers	Professional Development			
Regular Science Teachers	Professional Development			
Special Education Teachers	Professional Development			
Administrators	Professional Development			
Parents	Evening Workshop			
IHE Staff	Professional Development Design & Evaluation			
Other Specify: _____				

Types of PD Activities Provided		
Activity	Duration	Frequency
Summer Institutes		
On-line coursework		
Distance learning networks		
On-site professional learning experience (with follow-up)		
Study groups		
Other Specify: _____		



**Department of Education
Math-Science Partnerships**

PROJECT PROFILE

Question Asked

How the Information will be Displayed

Baseline Data

Provide baseline information on the teachers participating in the partnership.

Baseline Teacher Data	
	Total
Number of Teachers Served	
Number of Highly Qualified Teachers	
Number of Teachers Not identified as Highly Qualified	
Number of Teachers with Advanced Degrees or Certification	

Provide baseline information on the number of participating teachers by gradespan and by subject area.

Number of Participating Teachers – by Gradespan					
Total	Preschool (Pre-K)	Elem (K-5)	Middle (6-8)	High (9-12)	Other/Un graded

The total number of teachers will be carried forward from the previous table.

Number of Participating Teachers – by Subject Area				
Total	General Education	Math	Science	Other

Please provide information regarding the school participating in the Mathematics-science partnership. If more than one school is involved, complete a matrix for each school.

Baseline Data – School Indicators					
Number	Data Item				
	Total Enrollment				
	Student Graduation Rate (High schools only)				
	Free/Reduced-Price Lunch (Percentage Eligible)				
	Percent of classes taught by HQ teachers				
	Title I (yes, no, schoolwide)				
Academic Achievement (% proficient)					
Elementary		Middle		High School	
Math	Science	Math	Science	Math	Science

The options for Title I:

- Schoolwide,
- Targeted Assistance
- No Title I

If the project does not address whole faculty for a school use the project indicator matrix for the aggregate population that is served by the teachers participating in the project.

Baseline Data – Project Indicators					
Number	Data Item				
	Total Enrollment				
	Free/Reduced-Price Lunch (Percentage Eligible)				
Academic Achievement (% proficient)					
Elementary		Middle		High School	
Math	Science	Math	Science	Math	Science



**Department of Education
Math-Science Partnerships**

PROJECT PROFILE

Question Asked

How the Information will be Displayed

Program Evaluation

What type of relationship does the evaluator have with the project? Respondents may choose from: External Evaluator, Internal IHE Staff, Combination (specify), Other (specify).

Evaluator	
Type	Contact Information
External	Name: Affiliation:

The respondent will be asked to provide contact information for the evaluator.

What type of research design is being used for this partnership?

Research Design	
YES?	Activity
	Experimental
	Quasi-experimental
	No control/comparison groups
	Other Specify: _____

Describe the instruments that the Mathematics-science partnership will use to collect evaluation data (✓ Check all that apply)

Instruments Used to Collect Evaluation Data	
YES?	Activity
	Assessments of Teacher Content Knowledge Specify: State Assessments -mathematics
	State Assessments - science
	Other Assessments Specify:
	Classroom Observation Protocol Specify:
	Other Specify: _____



**Department of Education
Math-Science Partnerships**

PROJECT PROFILE

Question Asked

How the Information will be Displayed

Program Results Teachers

Indicate change in teacher knowledge using data from instrument identified in the earlier evaluation section.

The respondent will be asked to indicate what type of data is reported (means, percentiles, scale scores, etc.) and provide baseline data and post treatment data.

Teacher Content Knowledge			
Control Group		Treatment Group	
Baseline average scores	Post Treatment average scores	Baseline average scores	Post Treatment average scores
Description of what Data Represents:			

K-5 Teacher Content Knowledge		
Number of K-5 Teachers	Number of K-5 Teachers who significantly increase knowledge of mathematics	Number of K-5 Teachers who significantly increase knowledge of science
Description of what Data Represents:		

Middle School			
Number of math teachers not Highly Qualified prior to participation	Number of Highly Qualified math teachers after participation	Number of science teachers not Highly Qualified Teacher prior to participation	Number of Highly Qualified science eachers after participation

High School			
Number of math teachers not Highly Qualified prior to participation	Number of Highly Qualified math teachers after participation	Number of science teachers not Highly Qualified Teacher prior to participation	Number of Highly Qualified science eachers after participation



**Department of Education
Math-Science Partnerships**

PROJECT PROFILE

Question Asked

How the Information will be Displayed

Program Results - Students

Indicate increase in student achievement for mathematics and science using data from instrument identified in the earlier evaluation section.

The respondent will be asked to provide percent proficient and the net change from baseline data.

Student Achievement – Elementary Mathematics			
Control Group		Treatment Group	
% Proficient	Change	% Proficient	Change
Description of what Data Represents:			

Student Achievement - Mathematics					
Elementary		Middle		High School	
% Proficient	Change	% Proficient	Change	% Proficient	Change
Description of what Data Represents:					

Student Achievement – Elementary Science			
Control Group		Treatment Group	
% Proficient	Change	% Proficient	Change
Description of what Data Represents:			

Student Achievement - Science					
Elementary		Middle		High School	
% Proficient	Change	% Proficient	Change	% Proficient	Change
Description of what Data Represents:					

**Manual for the Submission of the
Annual Performance Report
for the
Mathematics and Science
Partnerships Program**



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General Information

Program Overview - The Mathematics and Science Partnership (MSP) program (Title II, Part B, of the *No Child Left Behind* Act) provides funds to states through a formula that takes into account its student population and poverty rates. States are required to hold competitions and make awards to projects that improve the content knowledge of teachers and increase student learning in mathematics and science. In the first year of funding, the states made over 340 grants with these funds. The enabling legislation requires that each of the projects funded by the states submit an annual report to the U.S. Department of Education.

Legislative Authority—Title II, Part B, Section 2202 (f) of the Elementary and Secondary Education Act of 1965 as amended by the No Child Left Behind Act of 2001 (P.L. 107-110).

The authorizing legislation requires each of the projects funded by the States to submit an annual report to the U.S. Department of Education (the Department). In particular, §2202 of the statute contains the following evaluation and reporting requirements:

“(e) EVALUATION AND ACCOUNTABILITY PLAN.-

(1) IN GENERAL.- Each eligible partnership receiving a grant or subgrant under this part shall develop an evaluation and accountability plan for activities assisted under this part that includes rigorous objectives that measure the impact of activities funded under this part.

(2) CONTENTS. The plan developed pursuant to paragraph (1)-

(A) shall include measurable objectives to increase the number of mathematics and science teachers who participate in content-based professional development activities;

(B) shall include measurable objectives for improved student academic achievement on State mathematics and science academic achievement on State mathematics and science assessments or, where applicable, an International Mathematics and Science Study assessment; and

(C) may include objectives and measures for-

- (i) increased participation by students in advanced courses in mathematics and sciences;
- (ii) increased percentages of elementary school teachers with academic majors or minors, or group majors or minors, in mathematics, engineering, or the sciences; and

- (iii) increased percentages of secondary school classes in mathematics and science taught by teachers with academic majors in mathematics, engineering, and science.

(f). REPORT. - Each eligible partnership receiving a grant or subgrant under this part shall report annually to the Secretary regarding the eligible partnership's progress in meeting the objectives described in the accountability plan of the partnership under subsection (e).”

Annual Performance Report Requirements - Each project is required to submit the following information to the U.S. Department of Education on an annual basis:

- A *Project Profile*, the OMB-approved data collection instrument for this program. It asks for descriptive information about the project, as well as impact data on the effectiveness of the project. The Project Profile may be submitted electronically or on hard copy. Directions on how to complete the form are also provided.
- A *Project Narrative* providing a summary of the work of the project over a 12-month period is also required. The narrative must include a brief description of the activities carried out under the project, aligned with the goals and objectives in the original, funded proposal. No specific format is required for the narrative, but suggestions for the organization of the document are provided.
- Any *External Evaluation Report* that has been prepared for the project.

Timeline—For the purposes of this program, “annual” 12 months of activities. The project may take up to 60 days after the end of the 12-month period to submit the annual evaluation report to the U.S. Department of Education.

Example:

- Grant started on June 1, 2004
- Report includes activities that took place from June 1, 2004 through May 31, 2005
- Report due July 31, 2005 (within 60 days of May 31st)

For additional assistance and guidance on the completion of the Annual Performance Report, please call the MSP coordinator in your state.

U.S. Department of Education MSP Staff

Team Leader

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Project Profile

Introduction

The Project Profile is designed to collect a comprehensive and timely national statistical database of common data of funded projects under Title II, Part B, Mathematics and Science Partnerships.

The Project Profile data collection instrument is formatted to simplify the submission of data that provides descriptive information about the project, as well as impact data on the effectiveness of the project. Descriptive information includes number of participating teachers, grade levels of participating teachers, and types of professional development. Impact data includes measures of gains in teacher content knowledge and student achievement scores.

Project Profile Organization

The Project Profile data collection instrument is organized in five sections:

- Project Information
- Baseline Data
- Program Evaluation
- Program Results—Teachers
- Program Results—Students

The **Project Information** section provides a brief description of the project including a timeline and lead personnel and partnership members. This section also identifies the size of the grant, participant descriptions, and types of professional development interventions.

The **Baseline Data** section provides data on schools, teachers, and students involved in the project. Information includes levels of poverty, grade levels, and highly qualified teacher status.

The **Program Evaluation** section is designed to provide data on the impact of the interventions of the project. Included is information on research design, types of instruments used, and results for gains in teacher content knowledge and student achievement.

Program Results for Teachers includes increases in the number of highly qualified teachers and measures of gains in teacher content knowledge.

Program Results for Students includes student achievement data in mathematics and science.

Missing or Not Applicable Data

To identify missing or not applicable data the following codes should be used in responses unless otherwise indicated.

- **M** indicates data are missing. A value is expected but data has not been collected at the time of response. (i.e. If data has not been collected at the time of the report and will be included in a subsequent or final report)
- **NA** indicates data are not applicable. The project does not involve participants, subjects, or type of intervention requested (i.e. no online courses were offered)
- Enter **0** (zero) for those cases where a numerical value is requested and no data was collected.

Method of Submission

The Project Profile (OMB 1810-0664) is designed to be an online data collection instrument and a web-based system is in the process of being developed. Until the system is operational, projects must submit individual profiles. The profile is provided in an electronic format and can be submitted in an electronic format or hard copy.

Some State MSP Coordinators will want to collect the Annual Performance Reports and submit the reports together. Contact your State MSP Coordinator for specific instructions.

Project Profile

Section One

Project Information

- Abstract
- Contact Information
- Project Timeline
- Funding Information
- Partnership Goals
- Role of Project Partners
- Role of the Arts and Science faculty from the IHEs
- Participation Selection Criteria
- Targeted Audience for Partnership Activities
- Types of PD Activities Provided

Section 1 Project Information

Abstract-brief project description

Abstract: Include the major activities and target audience of the interventions. It is not necessary to provide a description of needs or basis for selection of the interventions. This information can be included in the Project Narrative document.

Contact Information	
Partnership Title:	
Partner Institution	
Type of Institution:	
Principle Investigator(s):	
Address:	
Telephone:	
Fax:	
E- Mail:	

Contact Information: Provide the contact information should be completed for the lead institution of the project that will serve as the point of contact for the partnership.

Project Timeline:	
Project Start:	
Project End:	

Project Timeline: Indicate the month and year of the start and end of the project.

Funding Information - FY 03 (Aug 03-July 04)	
Funding Source	Amount
State MSP Grant (Title II, Part B)	
Federal Funds	
Title II, Part A	
Title I, Part VI	
Local Education Agency	
Exxon Grant	
Other (specify)	
Total Partnership Budget:	

Funding Information: Indicate the Fiscal Year of the APR [i.e. FY 03 (Aug 03-July 04)]. Provide the total amount of Title II, Part B funding for that period should be provided. In addition indicate any additional funding leveraged by the project.

Partnership Goals
List the top 3 goals of this partnership
1.
2.
3.

Partnership Goals: Provide a short statement for each of the 3 major goals of the partnership should be provided. Project goals should be prioritized to include only the top three goals.

Role of Project Partners	
Partner:	Role of Partner

Role of the Project Partners: Identify the partners that hold primary responsibilities for the major roles within the partnership. Each of the institutional partners should be listed. One partner can be listed with multiple responsibilities.

Role of the Arts and Science faculty from the IHEs	
# A&S Faculty	Activity
	Other Specify: _____

Role of the Arts and Science faculty from IHEs: Report the activities in which they are involved.

The number of A&S staff members actively involved in a specific activity should be reported in the first column and the actual activity identified in the second column.

Participation Selection Criteria:	Schools	Teachers	Students
Based on Need			
Random Assignment			
Volunteer			
Administrative Selection			
Other/Combination Specify: _____			

Participation Selection Criteria: Indicate the rationale for selecting participants for the interventions.

Targeted Audience for Partnership Activities				
Targeted Audience	Type of Activity	Number		
Regular Mathematics Teachers	Professional Development	Elem (K-5)	Mid (6-8)	HS (9-12)
Regular Science Teachers	Professional Development	Elem (K-5)	Mid (6-8)	HS (9-12)
Special Education Teachers	Professional Development	Elem (K-5)	Mid (6-8)	HS (9-12)
Administrators	Professional Development	Elem (K-5)	Mid (6-8)	HS (9-12)
Parents	Evening Workshop	Elem (K-5)	Mid (6-8)	HS (9-12)
IHE Staff	Professional Development Design & Evaluation			
Other Specify: ___				

Targeted Audience for Partnership Activities: Include actual participants for each subgroup. A Zero (0) should be entered if certain subgroups were not included.

Types of PD Activities Provided		
Activity	Duration	Frequency
Summer Institutes		
On-line coursework		
Distance learning networks		
On-site professional learning experience (with follow-up)		
Study groups		
Other Specify: _____		

Types of PD Activities provided: The duration of activities should indicate the total number of actual contact hours an individual participating in the activity will incur during training. The frequency should be reported in terms of number of events that occur during the performance period.

For example, a summer institute may run for two weeks (10—8 hour days) and should be reported as 80 hours. The frequency would be reported as 1 if it is provided only once during the performance period.

If individuals would require separate amounts of contact hours (i.e. online courses) an average should be reported for the duration.

Project Profile Section Two Baseline Data

- Baseline Teacher Data
- Number of Participating Teachers—by Grade Span
- Number of Participating Teachers—by Subject Area
- Baseline Data—School Indicators
- Baseline Data—Project Indicators

Section 2 Baseline Data

Baseline Teacher Data	
	Total
Number of Teachers Served	
Number of Highly Qualified Teachers	
Number of Teachers Not identified as Highly Qualified	
Number of Teachers with Advanced Degrees or Certification	

Baseline Teacher Data: Provide a picture of the types of teachers that participated in the activities of the project. Baseline information should provide information about teachers' status prior to interventions of the project.

If a trainer of trainer model is used include all teachers affected through the project. For example, if 10 teachers were trained in the summer and they held Professional Development for an additional 150 teachers, the table should reflect 160 teachers.

The number of teachers served (first row) should equal the sum of those beginning as Highly Qualified and those identified as not Highly Qualified (rows 2&3).

Number of Participating Teachers—by Gradespan					
Total	Preschool (Pre-K)	Elem (K-5)	Middle (6-8)	High (9-12)	Other/Un graded

Number of Participating Teacher by Grade span: This information is collected for teachers only. If teachers switch grade levels during the program information on their assignment at the beginning of the project should be reported. The first column should be the sum of the other five columns.

Number of Participating Teachers—by Subject Area				
Total	General Education	Math	Science	Other

Number of Participating Teacher by Subject Area: Elementary teacher who have responsibility for multiple subjects should be identified under General Education. Only teachers who have greater than 50% of their workload in Math or Science should be identified in those subject areas. The first column should be the sum of the other four columns.

Baseline Data—School Indicators					
Number	Data Item				
	Total Enrollment				
	Student Graduation Rate (High schools only)				
	Free/Reduced-Price Lunch (Percentage Eligible)				
	Percent of classes taught by HQ teachers				
	Title I (yes, no, schoolwide)				
Academic Achievement (% proficient)					
Elementary		Middle		High School	
Math	Science	Math	Science	Math	Science

Baseline Data—School Indicators: Provide information on the schools that will be impacted by the interventions of the project. A table for each school should be provided. Even if there is only one teacher from a school that is participating in the project, baseline data should be provided.

Baseline Data—Project Indicators					
Number	Data Item				
	Total Enrollment				
	Free/Reduced-Price Lunch (Percentage Eligible)				
Academic Achievement (% proficient)					
Elementary		Middle		High School	
Math	Science	Math	Science	Math	Science

Baseline Data—Project Indicators: Provide supporting data that reflect an aggregate of all students who are impacted by their teachers' participation in the interventions of the project should be provided. As opposed to the information provided in the School Indicators table, this data will reflect only students in classrooms of teachers who are participating in the project.

Project Profile

Section Three

Program Evaluation

- Evaluator
- Research Design
- Instruments Used to Collect Evaluation Data

Section 3 Program Evaluation

Evaluator	
Type	Contact Information
External	Name: Affiliation:

Evaluator: Provide information on the evaluator of the project. The type of evaluator should be reported as either internal (a staff person in one of the partner organizations) or external. The affiliation is the institution, agency or company for which the lead evaluator is employed.

Research Design	
YES?	Activity
	Experimental
	Quasi-experimental
	No control/comparison groups
	Other Specify: _____

Research Design: Classify the design of the evaluation in terms accepted by the research community. If no control groups are utilized in evaluating the project, please indicate the type of study design used in the “Other” cell.

Instruments Used to Collect Evaluation Data	
YES?	Activity
	Assessments of Teacher Content Knowledge Specify:
	State Assessments -mathematics
	State Assessments - science
	Other Assessments Specify:
	Classroom Observation Protocol Specify:
	Other Specify: _____

Instruments Used to Collect Evaluation: Identify the instruments used to collect data. Be as specific as possible on the actual instrument used. You may enter as many “Other” instruments as needed.

Project Profile

Section Four

Program Results - Teachers

- Teacher Content Knowledge
- K-5 Teacher Content Knowledge
- Middle School Teacher Content Knowledge
- High School Teacher Content Knowledge

Section Four Results—Teachers

Teacher Content Knowledge			
Control Group		Treatment Group	
Baseline average scores	Post Treatment average scores	Baseline average scores	Post Treatment average scores
Description of what Data Represents:			

Teacher Content Knowledge: Provide data on gains in teacher content knowledge. If the project did not utilize an experimental design enter NA for the Control Group and enter scores of participants in the Treatment Group.

For the description of what the data represents provide the instrument used and statistical information (e.g., level of significance) on the possible scores.

If a trainer of trainers model is used, provide separate tables for the trainers and the teachers they trained. Use the description box to identify which group is represented by the data.

K-5 Teacher Content Knowledge		
Number of K-5 Teachers	Number of K-5 Teachers who significantly increase knowledge of mathematics	Number of K-5 Teachers who significantly increase knowledge of science
Description of what Data Represents:		

K-5 Teacher Content Knowledge: Enter the number of K-5 participants (including those who began in the project but did not remain throughout the total performance period) and indicate how many were able to produce statistically significant gains in their scores.

For the description of what the data represents provide the instrument used (also listed in Section 3) and statistical information (e.g. level of significance) on the possible scores. If more than one instrument was used to determine growth in teacher content knowledge, a table for each instrument should be provided.

Middle School			
Number of math teachers not Highly Qualified prior to participation	Number of Highly Qualified math teachers after participation	Number of science teachers not Highly Qualified Teacher prior to participation	Number of Highly Qualified science teachers after participation

Middle School: Provide data on status of Highly Qualified teachers. Data should be provided on those teachers who were not classified as Highly Qualified prior to participation and of those the number of teachers who were able to obtain Highly Qualified status by the end of the performance period.

For example, if 50 science teachers participated in professional development and 45 were not highly qualified, the first column would be zero and 45 entered in the third column. The five teachers who were highly qualified at the onset will not appear in the table. If at the end of the training 38 of the 45 teachers were deemed highly qualified then the last column would reflect the 38.

High School			
Number of math teachers not Highly Qualified prior to participation	Number of Highly Qualified math teachers after participation	Number of science teachers not Highly Qualified Teacher prior to participation	Number of Highly Qualified science teachers after participation

High School: Provide data on status of Highly Qualified teachers. Data should be provided on those teachers who were not classified as Highly Qualified prior to participation and of those the number of teachers who were able to obtain Highly Qualified status by the end of the performance period.

See example for middle school above.

Project Profile Section Five Program Results - Students

- Student Achievement - Elementary Mathematics
- Student Achievement - Mathematics
- Student Achievement—Elementary Science
- Student Achievement - Science

Section 5 Program Results—Students

Student Achievement—Elementary Mathematics			
Control Group		Treatment Group	
% Proficient	Change	% Proficient	Change
Description of what Data Represents:			

Student Achievement Elementary Mathematics: Student achievement data is required. Student achievement data should be recorded for students directly impacted through the participation of their teachers. The information provided should give an indication of whether any change occurred during the performance period of the report.

If the evaluation design includes a control group, information can be provided in a similar table for each grade span (middle and high school) involved in the project. If control groups are not used in the evaluation design or mathematics is not included, enter NA in the cells. If only one grade level was included in the study, that grade can be indicated in the Description box.

Data from state tests will be reported in terms of proficiency and this should be indicated in the description box. If other instruments are used and proficiency levels are not appropriate, data can be reported in other metrics and explained in the description box.

Student Achievement - Mathematics					
Elementary		Middle		High School	
% Proficient	Change	% Proficient	Change	% Proficient	Change
Description of what Data Represents:					

Student Achievement Mathematics: This is the table to be used to disaggregate data by grade levels. If control group information was provided in the previous tables, the data should match the treatment data from the previous table(s). If specific grade spans are not part of the project or mathematics is not included, NA should be entered in the appropriate cell. If only one grade level was included in the study, that grade can be indicated in the Description box.

Data from state tests will be reported in terms of proficiency and this should be indicated in the description box. If other instruments are used and proficiency levels are not appropriate, data can be reported in other metrics and explained in the Description box.

Student Achievement—Elementary Science			
Control Group		Treatment Group	
% Proficient	Change	% Proficient	Change
Description of what Data Represents:			

Student Achievement Elementary Science: Student achievement data is required. The information provided should give an indication of whether any change occurred during the performance period of the report.

If the evaluation design includes a control group, information can be provided in a similar table for each grade span (middle and high school) involved in the project. If control groups are not used in the evaluation design or science is not included, enter NA in the cells. If only one grade level was included in the study, that grade can be indicated in the Description box.

Data from state tests will be reported in terms of proficiency and this should be indicated in the description box. If other instruments are used and proficiency levels are not appropriate, data can be reported in other metrics and explained in the description box.

Student Achievement - Science					
Elementary		Middle		High School	
% Prof	Change	% Proficient	Change	% Proficient	Change
Description of what Data Represents:					

Student Achievement Science: This is the table to be used when control groups are not part of the evaluation design. If control group information was provided in the previous tables, the data should match the treatment data from the previous table(s). If specific grade spans are not part of the project or science is not included, NA should be entered in the appropriate cell. If only one grade level was included in the study, that grade can be indicated in the Description box.

Data from state tests will be reported in terms of proficiency and this should be indicated in the description box. If other instruments are used and proficiency levels are not appropriate, data can be reported in other metrics and explained in the description box.

Instructions For MSP Project Narrative

Purpose

Recipients of Mathematics and Science Partnerships grants must submit a final performance report within 60 days of the end date of the grant. The final report should include a Project Narrative that describes how the grantee met the project objectives. The report does not need to be lengthy, more than 15 pages, but should cover all pertinent information particularly in the evaluation section, which in most cases will be a separate report.

General Instructions

- Reports are due within 60 days after the end of your grant, if you have not received a no-cost extension the due date is before December 31, 2003. If you have received an extension, the report will be due 60 days after that revised date. Please note: this is the **only** notice you will receive regarding the final report.

-

FORMAT

There is not a required format for the Project Narrative. The following is a suggested organization that includes all of the required elements for the narrative.

I. Cover Sheet—see attached. Complete the cover sheet per the instructions provided.

II. Executive Summary

- Provide a one to two page Executive Summary describing the project and highlighting key accomplishments.

III. Project Performance

- Report on how you met each one of your project objectives, i.e. areas proposed in Use of Funds section and/or other applicable sections of original application.
- Provide specific data on actual accomplishments for each project objective, including number of students and schools served, number of books and computers purchased, number of extended hours each library was open, and any other specific information on how the funds were used. The requested information may be provided in any reasonable format.
- Provide a copy of your Program Evaluation Report as described.

IV. Supplemental Information

Provide any other appropriate information about your project including any unanticipated outcomes, implementation challenges, and lessons learned from your project that might benefit other districts undertaking this type of improvement effort.

VI. Send your report to:

Michael Kestner
U.S. Department of Education
400 Maryland Ave. SW
Room 3C109
Washington, DC 20202-6200
michael.kestner@ed.gov

Paperwork Burden Statement

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is **1890-0004**. The time required to complete this information collection is estimated to average 20 hours per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. If you have any comments concerning the accuracy of the time estimate (s) or suggestions for improving this form, please write to: U. S. Department of Education, Washington, DC 2020-4651. If you have comments or concerns regarding the status of your individual submission of this form, write directly to the address in Section VI or send email to LSL@ed.gov.



Mathematics and Science Partnerships Project Narrative Cover Sheet

Project Title				
Recipient's Name				
Recipient's Address		City	State	Zip+4
Contact Person's Name		Title		
Telephone Area/No.	Fax Area/No	E-mail Address		
Reporting Period <i>mm/dd/yy</i> ____/____/____ - ____/____/____				
Total Expenditures Federal \$		Nonfederal <i>If applicable</i> \$		

To the best of my knowledge and belief, all data in this performance report are true and correct.

Name of Authorized Representative <i>Typed or printed</i>	Title
Signature ➤	Date Signed