

***No Child Left Behind Act of 2001***  
**Public Law 107-110**

**ESEA Title II, Part B**

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**Montana**

***Mathematics and Science  
Partnerships (MSP) Program***

**2013-2015 Competitive Grant  
Application**

**Due Date: August 31, 2012**



[opi.mt.gov](http://opi.mt.gov)

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## **I. PURPOSE**

In January 2002, the No Child Left Behind Act of 2001 (NCLB) became law. ESEA Title II, Part B of this legislation authorizes the Mathematics and Science Partnership (MSP) competitive grant program. The purpose of this program is to improve the academic achievement of students in the areas of mathematics and science by encouraging state education agencies, institutions of postsecondary education, local education agencies, elementary schools, and secondary schools to participate in programs that improve instruction and upgrade the status and stature of mathematics and science teaching.

The MSP program is a formula grant program to the states, with the size of individual state awards based on student population and poverty rates. With these funds, each State is responsible for administering a competitive grant competition, in which grants are made to partnerships to improve teacher knowledge in mathematics and science. The Montana Office of Public Instruction (OPI) is responsible for the administration of this program. ESEA Title I and ESEA Title II, Part A funds may be used to support the partnership's activities to demonstrate progress toward meeting the district partner's Title I Adequate Yearly Progress goals.

The OPI is responsible for conducting this competitive grant program and will make awards to partnerships of high-need school districts and science, mathematics, and engineering departments within postsecondary education institutions. The overall goal is to give districts, and mathematics and science postsecondary education faculty, joint responsibility for improving mathematics and science instruction through the process of implementing high-quality professional learning.

The overall purpose of the ESEA Title II, Part B MSP program is to improve the academic achievement of students in the areas of mathematics and science by encouraging State educational agencies, postsecondary education institutions, local educational agencies (LEA), elementary schools and secondary schools to participate in programs that:

- improve and upgrade the status and stature of mathematics and science teaching by encouraging postsecondary education institutions to improve mathematics and science teacher education;
- focus on the education of mathematics and science teachers as a career-long process;
- bring mathematics and science teachers together with scientists, mathematicians, and engineers to improve their teaching skills;
- develop more rigorous mathematics and science curricula that are aligned with challenging state and local academic content standards and with the standards expected for postsecondary study in engineering, mathematics, and science; and
- improve and expand professional learning of mathematics and science teachers, including teaching such educators in the effective integration of technology into curricula and instruction.

## **II. GOALS OF MONTANA MSP PROGRAM**

The OPI will award the 2013-2015 ESEA Title II, Part B MSP funding to two partnerships: one for mathematics; one for science. The two projects will improve K-12 math or science student learning and math and science teaching skills by implementing high-quality professional learning; collaborating and coordinating with one another and the Regional Education Service Area (RESA) network, and supporting and interacting with the Montana STEM Initiative. These partnerships will:

Goal 1: Scale-up the impact of the MSP program across Montana by creating a statewide systemic, research-based and sustainable approach to improve student achievement and teacher content

knowledge of *K-12 Framework for Science Education*:

[http://www.nap.edu/catalog.php?record\\_id=13165](http://www.nap.edu/catalog.php?record_id=13165)

or *Montana Common Core Standards for Mathematics*:

[http://opi.mt.gov/Curriculum/MontCAS/GetReady.php#gpm1\\_4](http://opi.mt.gov/Curriculum/MontCAS/GetReady.php#gpm1_4)

Goal 2: Design and deliver interactive, on-demand, high-quality learning modules for mathematics or science through statewide and regional professional development using various venues including school-based and distance learning.

Goal 3: Directly engage the five Regional Education Service Areas (RESAs) as active partners. The RESA network includes: Prairie Educational Service Area (PESA), Montana North Central Educational Services Region (MNCSR), Montana Regional Education Service Area 3 (MRESA3), Regional Education Service Area 4 You (RESA4U) and Western Montana Comprehensive System of Personnel Development (WM-CSPD). Here is the link to the contact information and map for the Montana Regional Education Service Areas: [http://www.opi.mt.gov/Programs/Index.html?gpm=1\\_12](http://www.opi.mt.gov/Programs/Index.html?gpm=1_12).

Goal 4: Support and interacting with the Montana Science, Technology, Engineering, and Mathematics (STEM) Education Initiative. [ESEA STEM Blueprint](#)

Goal 5: Participate in a rigorous evaluation system guided by the OPI in consultation with Education Northwest to determine the effectiveness of professional development and its impact on student learning outcomes by analyzing interim assessments and state summative assessment data in Mathematics or Science.

### **III. OPI MSP GRANT APPLICATION TECHNICAL ASSISTANCE**

On Tuesday, July 31, 2012, 2:00 - 3:30 p.m. the OPI will provide a technical assistance webcast for interested applicants. The webcast will be recorded and available on demand on the Montana MSP Web site located at <http://www.opi.mt.gov/curriculum/msp/>.

For information and additional technical assistance, contact:

**Jean Howard, Mathematics Curriculum Specialist**  
**Office of Public Instruction**  
**Telephone: (406) 444-0706**  
**E-mail: [jhoward@mt.gov](mailto:jhoward@mt.gov)**

**Kristen Crawford, Science Curriculum Specialist**  
**Office of Public Instruction**  
**Telephone: (406) 444-3557**  
**E-mail: [kcrawford@mt.gov](mailto:kcrawford@mt.gov)**

**Sheri Harlow, Administrative Assistant**  
**Office of Public Instruction**  
**Telephone: (406) 444-9864**  
**E-Mail: [sharlow@mt.gov](mailto:sharlow@mt.gov)**

#### **IV. GENERAL GRANT INFORMATION**

**ELIGIBILITY:** Who may apply? Partnerships of local education agencies (LEAs) and postsecondary education institutions may apply to states for subgrants.

The term “high-need school district” means a school district that: (1) serves no fewer than 10,000 children from families with incomes below the poverty line or a school district for which 20 percent of the children are from families with incomes below the poverty line; **or** (2) has a high percentage of teachers not teaching in the academic subjects or grade levels that the teachers were trained to teach; **or** has a high percentage of teachers with Emergency Authorization of Employment or Alternative License when compared to other districts in the state.

#### **GRANT AWARDS: NUMBER AND AMOUNT**

The OPI will award up to two grants in 2012: One grant award to target Mathematics, and one grant award to target Science. **Each grant proposal will clearly describe how its project will collaborate and coordinate with the other grant recipient and the five Regional Education Service Areas (RESAs).**

Each grant may be funded for up to \$335,178 per year for up to three years contingent upon federal funding.

#### **DURATION OF GRANTS**

Awarded grant projects will begin October 1, 2012, and continue through June 30, 2013, for the first year funding. Funding for each subsequent year will be based upon meeting reporting requirements, program requirements, and availability of federal funding.

#### **FUNDS AVAILABLE**

Grant funds will be available **October 1, 2012**. Grant funds are contingent upon availability of federal funds.

#### **USE OF FUNDS**

Funds received shall be used to supplement, and not supplant, funds that would otherwise be used for proposed activities. Follow EDGAR requirements.

Education Department General Administrative Regulations (EDGAR):

EDGAR sections 74, 76, 77, 80, 81, 82, 85, 86, 98, 99 apply to this program

[www.ed.gov/policy/fund/reg/edgarReg/edgar.pdf](http://www.ed.gov/policy/fund/reg/edgarReg/edgar.pdf)

#### **V. PROGRAM REQUIREMENTS**

##### **REQUIRED PARTNERS**

To be eligible, a partnership must include, at a minimum:

- an engineering, technology, mathematics, or science department of a postsecondary education institution;
- a high-need LEA; and
- Montana’s five Regional Education Service Areas.

A partnership may include:

- another science, technology, engineering or mathematics or teacher preparation department of a postsecondary education institution;

- additional LEAs, public or private elementary schools or secondary schools, or a consortium of such schools;
- a business; or
- a nonprofit or for-profit organization of demonstrated effectiveness in improving the quality of mathematics and science teachers.

#### **REQUIRED EXTERNAL EVALUATOR**

A qualified external project evaluator **must** be used by each MSP grant recipient to design, implement, and manage an evaluation and accountability system that includes rigorous objectives used to measure the formative and summative impact of the project. The external project evaluator will work in collaboration with the MSP partnership to determine the common expected outcomes and measurement indicators for the project and in accordance with federal and state guidelines.

#### **REQUIRED CORE PLANNING TEAM**

All projects **must** have a core planning team in place to oversee the general design and implementation of the project. At a minimum the team will consist of:

1. a teacher from one or more of the partner LEAs;
2. a building principal or district superintendent from one of the partner LEAs;
3. a participating STEM faculty member;
4. directors, or their designees, from two or more of the five RESAs;
5. a science or math education faculty member; and
6. the project evaluator.

#### **PRIVATE SCHOOL PARTICIPATION**

Funds awarded through these sub grants are subject to the requirements of Section 14503 of ESEA Pub.L. 108-382 (Participation by Private School Children and Teachers) and the regulations in 34 CFR 299, Subpart E. The statute and regulations require that sub grantees provide private schools in their area the opportunity for meaningful collaboration with the sub grantees during the planning process for any subsequent professional development activities. Further, the sub grantees must provide private school children and their teachers, or other educational personnel, the opportunity to receive services and benefits of the program on an equitable basis with public school children and teachers.

#### **REPORTING REQUIREMENTS**

The U.S. Department of Education and the Montana Office of Public Instruction require:

1. All partnerships to complete the online Annual Performance Report (APR) <http://apr.ed-msp.net/users/login> providing project information and reporting the partnership's progress in meeting the objectives described in the evaluation and accountability plan. These objectives must include measures of student and teacher content knowledge and skills in mathematics and/or science.
2. The Office of Public Instruction Math Science Partnership Program State Coordinators will monitor all projects on an ongoing basis to ensure compliance with all requirements.

## VI. APPLICATION PROCESS

**Montana Mathematics and Science Partnerships (MSP)** – All eligible entities may submit an application for a three-year grant funded annually based upon availability of federal funding, satisfactory and timely reports, and meeting grant requirements.

### APPLICATION TIMELINE: MSP PROGRAM COMPETITIVE GRANTS 2013-2015

<b>2012 Application Timeline</b>	
<b>July 13</b>	Request for Proposal (RFP) posted on OPI Web site and announced via OPI Official E-Mail
<b>July 31</b>	Technical Assistance Webcast 2:00 – 3:30 p.m. Mathematics and Science Partnership RFP
<b>August 31</b>	Applications Received Electronically by the OPI by 5:00 p.m. <i>No facsimile grant applications will be accepted.</i>
<b>September 4-14</b>	Application Review Process
<b>September 17</b>	Grant Awards Announced
<b>September</b>	Comments provided to non-funded grant applications
<b>October 1</b>	Project funds become available
<b>November</b>	Mandatory Meeting for MSP Project Directors and External Evaluators
<b>This is a federal program. Sub awardees grant reporting dates and requirements are subject to change as federal requirements change. Three-year grant awards contingent upon federal funding.</b>	

#### SUBSEQUENT OPPORTUNITY TO APPLY

The OPI is committed to the competitive process required by this program. Awards will be made only for high-quality proposals that describe programs that attend to all competition requirements. There is no obligation on the part of the OPI to award all the available funds in this round of competition.

## INSTRUCTIONS FOR SUBMISSION

Mail the completed original Montana MSP Grant application and two copies to: Office of Public Instruction, ATTN: Sheri Harlow, Administrative Assistant, PO Box 202501, Helena, MT 59620-2501, postmarked no later than August 31, 2012;

**and**

By 5:00 p.m. August 31, 2012, submit an electronic PDF copy of the completed grant application to:

**Sheri Harlow, Administrative Assistant**  
**Office of Public Instruction**  
**E-Mail: [sharlow@mt.gov](mailto:sharlow@mt.gov)**

*Faxed applications will not be accepted.*

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## VII. REQUIREMENTS AND PREPARATION OF APPLICATION

**COVER PAGE** – Use the form provided in Appendix A of the RFP. The cover page is the first page of the application.

**ABSTRACT** – Provide an abstract of the proposal that briefly and concisely describes the program to be implemented and summarizes the intended results of the program. Projects need to keep this abstract between 200 to 300 words.

**PARTNERSHIP OPERATIONAL NARRATIVE** – The partnership narrative **must** address each of the following items. Applications **must** keep the narrative to no more than 25 pages, use half inch or larger margins, use Times New Roman, 12 point, be double spaced and include no more than 30 lines of type per page.

- a. **Partnerships** – The partnership narrative will summarize the makeup of the partnership and how the partnership operates.
- b. **Research Base** – The partnership narrative will discuss and cite the current state of knowledge relevant to the proposed program. This brief literature review should clearly indicate why the proposed activities were selected or designed.
- c. **Needs Assessment** – A partnership narrative will reflect data to address professional development needs, goals, and activities of the proposal.
- d. **Project Plan** – The partnership narrative will clearly describe the goals and objectives for the program and a detailed summary of the responsibility of each partner, including the leadership of the five RESAs. The narrative will include time frame, resources, responsible persons and evaluation components. In addition, provide descriptions of the number, type, duration and scope of planned professional development work, including the number of teachers engaged. (A table format is suggested for laying out this information.)
- e. **Alignment with Montana Common Core Standards for Mathematics or K-12 Framework for Science Education** – The partnership narrative will clearly explain the tie between professional development and the common standards for mathematics or science.
- f. **Coordination with Other Existing Programs and Initiatives** – The partnership narrative will clearly explain how the project is coordinating with other improvement efforts and projects in the respective schools and districts including the STEM Initiative.

- g. Management/Capability – The partnership narrative will clearly demonstrate that the partnership has the capability of managing the program, organizing the work and meeting deadlines.
- h. Communication and Interaction – The partnership narrative will clearly describe how the project uses a K-12 systems approach to provide ongoing communication and interaction between the participants, faculty and partners.
- i. Leadership Involvement – The partnership narrative will clearly indicate how the project fosters commitment of school and district leadership.
- j. Implementation and Sustainability of Professional Development – A partnership narrative will clearly describe how the project plans to ensure support for implementation and sustainability through the use of job-embedded professional learning provided to participants.

**PARTNERSHIP EVALUATION AND ACCOUNTABILITY PLAN** – The partnership narrative **must** address each of the following items. Applications **must** keep the evaluation and accountability plan narrative to no more than eight pages, use half inch or larger margins, use Times New Roman, 12 point, be double spaced and include no more than 30 lines of type per page.

The partnership plan will:

- a. describe how the effectiveness of the partnership itself will be assessed;
- b. describe how it will evaluate the overall success of the project (summative). In general, the partnership plan will explain how it will determine whether the partnership activities have increased administrator and K-12 teacher knowledge and skills in science or mathematics. Also the plan will evaluate the effectiveness of the collaboration between MSP and STEM Initiative and the RESA network. The plan will also include measurable objectives to increase the number of district administrators participating in the professional development activities;
- c. include a discussion of the feasibility of incorporating an experimental design with random assignment to treatment and control groups, matched comparison groups **or** non-matched comparison groups as the central part of their evaluation design framework. If none of the three options are feasible, the narrative should summarize why each was not;
- d. describe how it will measure progress toward meeting its objectives (formative). Mid-term and annual reports on progress related to this outcome will be reviewed by the project evaluator and provided to the OPI on an annual basis;
- e. reference the professional development evaluation model developed by Thomas Guskey, attached at **Appendix F**, as a guideline for evaluating the professional development project. **Evaluation of levels one through five will be reflected in the overall evaluation plan, with particular emphasis given to level five, the impact of professional development on student learning outcomes.** The narrative will clearly and concisely describe the process and instruments to be used for each component, and if, and how, the instrument's validity and reliability will be determined; and
- f. describe how the results of various formative and summative evaluations will be disseminated to the partnership, and to other possible venues, including method and time line for dissemination.

#### **PARTNERSHIP BUDGET AND BUDGET NARRATIVE**

The budget narrative will be clearly tied to the plan summarized in the Partnership Operational Narrative. The budget narrative will describe the basis for determining the amounts shown on the overall project budget page and for each of the partner funding request pages submitted

(Appendix D). The partnership will determine the necessary resources to support: the collaboration between MSP and the five RESAs; participation in state MSP and STEM conferences, forums and workshops; and travel to Annual Regional MSP Conference sponsored by the U.S. Department of Education.

### **PROPOSAL APPENDICES**

The grant application appendices should include only the following documents. These appendices are not included in the application page limit.

- a. Cover Page
- b. Statement of Assurances (**prime applicants other than school districts must contact the OPI for proper common assurance forms required for submission with the proposal**)
- c. Partnership Identification Forms
- d. Budget Forms
- e. Letter of Commitment from each partner
- f. Partner Funding Request for each partner

### **REVIEW PROCESS**

The application review process includes: (1) proposals scored by an external review by a panel experienced in reading similar grant applications; (2) recommendations made to the OPI team by the external review panel; and (3) final decisions made by the OPI review team based on the external panel recommendations and required policy decisions regarding the award.

**Successful grant applicants will be notified by September 17, 2012, of grants awards. Decisions of the OPI on funding and awarding of grants shall be final.**

***Application Scoring:*** *Appendix G* provides the basic rubric used in the review process. Along with the numerical score, each reviewer will list the strengths and weaknesses of the responses to each part. A proposal accepted for funding may require project and budget revisions before final approval and funding is released.

### **FFATA REPORTING REQUIREMENTS**

The Federal Funding Accountability and Transparency Act (FFATA) was signed on September 26, 2006. The intent is to empower every American with the ability to hold the government accountable for each spending decision. The end result is to reduce wasteful spending in the government. As of October 1, 2010, new reporting requirements were issued requiring recipients of federal grants and contracts to comply with sub recipient reporting requirements under the FFATA (Pub. L. 109-282). Awardees (in this case the state) receiving new awards of \$25,000 or more will report on newly issued sub grants (your programs). The information reported will be made available to the public at USASpending.gov. The following data must be reported by the prime awardee (the state) under FFATA:

- name of the entity receiving the award;
- amount of the award;
- information on the award including transaction type, funding agency, program source, award title and Catalog of Federal Domestic Assistance number;
- location of the entity receiving the award and primary location of the performance under the award, including city, state, congressional district and country;
- DUNS number of the entity receiving the award or the parent entity of the recipient; *and,*  
*When applicable (This will not apply to most MSP sub grantees)*

- names and total compensation of the five highest compensated officers of the entity if, during the preceding fiscal year, it received: (a) 80 percent or more of its annual gross revenues in federal awards, and (b) \$25 million or more in annual gross revenues from federal awards; or if the public does not have access to information about the compensation of the executive through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 or section 6104 of the Internal Revenue Code of 1986.

The state will report sub award information using the FFATA Sub Award Reporting System (<http://www.fsr.gov>). The state must report information related to the sub award by the end of the month following the month that the sub award or obligation was made (e.g., if the prime awardee made the sub award between March 1 and March 31, 2011, it must submit sub award information by April 30, 2011).

When applicable the prime awardee must submit its own executive compensation data, as well as the executive compensation data of its sub awardees, in the same manner.

In order to better assist the OPI with this requirement it is *encouraged* that all sub grantees register with the Central Contractor Registration System (CCR). Those sub grantees who register with the CCR (<http://ccr.gov>) will have their information pre-populated into the FFATA Sub Award Reporting System (FSRS), reducing the burden for collecting and disseminating the required data within the timeline outlined above. The OPI appreciates your support in this matter.

#### **GENERAL GUIDELINES**

As proposals are received at the OPI, they will be reviewed by staff for completeness and compliance with the requirements set forth in ESEA Title II, Part B of NCLB to determine applicant eligibility. Any questions about significant omissions from a proposal or about applicant eligibility will be referred to the proposing organization. If, in the judgment of the OPI, a proposal is late, significantly incomplete, or an applicant cannot establish its eligibility, the proposal will be omitted from consideration. The decision of the OPI is final. Applicants submitting proposals that are withdrawn due to incompleteness or ineligibility will be notified in writing.

A review panel will evaluate eligible applications on the basis of the required application components and the established criteria. The review panel will assess each eligible application and make recommendations to the OPI in the areas of program, budget, and efficacy. The review panel's scores and recommendations will be the primary determinant of successful proposals and will form the basis for negotiation and final selection. Following the review, the OPI staff will contact eligible project directors to discuss any modifications of the project plan that may be required. The OPI will seek to fund those proposals that show the most promise for successful professional development programs.

#### **SCORING**

The panel of reviewers will assess each plan. Each aspect or part of the plan will be worth a set number of points (see chart below). Individual panel members will evaluate each aspect and assign points up to the maximum for each aspect. They will be asked to list strengths and weaknesses for each aspect as well. Finally, the OPI review team will review the scored applications, add in bonus points earned, total the scores, and then make necessary policy decisions regarding the successful awards to grantees.

<b>Proposal Aspect</b>	<b>Maximum Points</b>
Overall Design and Efficacy of Project Plan and its proposed inclusion of the STEM Initiative and the RESA Network	<b>25</b>
Makeup, Commitment and Capacity of Partnership	<b>15</b>
Quality/Level of Implementation and Sustainability Support for the Participants	<b>20</b>
Quality of Evaluation and Accountability Plan	<b>25</b>
Budget and Cost Effectiveness	<b>15</b>
Total Possible Points	<b>100</b>

**Appendix A - Cover Sheet**

*Montana Office of Public Instruction  
ESEA Title II, Part B – Mathematics and Science Partnerships (MSP) Program*

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**MONTANA MATHEMATICS AND SCIENCE PARTNERSHIP (MSP) PROGRAM  
APPLICATION**

**Applying Institution or Organization:** \_\_\_\_\_

**Program Title:** \_\_\_\_\_

**Program Director**

**Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **ZIP Code:** \_\_\_\_\_

**Telephone:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_

**Amount of MSP Funds Requested:** \_\_\_\_\_ \$

**Number of Teachers to be Served Directly:** \_\_\_\_\_

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the governing body of this organization, or institution, and that the applicant will comply with the attached statement of assurances.

\_\_\_\_\_  
**Typed or Printed Name of Authorized  
Official Grants Officer or  
Superintendent of Fiscal Agent**

\_\_\_\_\_  
**Title**

\_\_\_\_\_  
**Signature of Authorized Official**

\_\_\_\_\_  
**Date**

<b>Appendix B – Statement of Assurances</b>
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**Montana Office of Public Instruction**  
**ESEA Title II, Part B – Mathematics and Science Partnership (MSP) Program**

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**STATEMENT OF ESEA TITLE II, PART B ASSURANCES**

Should an award of funds from the Mathematics and Science Partnerships (MSP) Program be made to the applicant in support of the activities proposed in this application, the authorized signature on the cover page of this application certifies to the OPI that the authorized official will:

1. Upon request, provide the Montana Office 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:
  - 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; and
  - f. Improving America's Schools Act of 1994.
3. Use grant funds to supplement and not supplant funds from nonfederal sources.
4. Take into account during the development of programming the need for greater access to and participation in the targeted disciplines by students from historically underrepresented and underserved groups.
5. Submit, in accordance with stated guidelines and deadlines, all program and evaluation reports required by the U.S. Department of Education and the Montana Office of Public Instruction.
6. The applicant will retain records of the program for five years and will allow access to those records for purposes of review and audit.

Signature Information for Appendix A Cover Page with School Districts as Prime Applicant: The Board of Trustees submitted a Common Assurances form to the Office of Public Instruction for the 2011-12 school year, and no circumstances affecting the validity of the assurances have changed since its submittal. Further, the Board of Trustees has certified that the Common Assurances for Federal Programs are accepted as the basic conditions for local participation and assistance in operation of this Title II Part B MSP.

**Montana Office of Public Instruction**  
**ESEA Title II, Part B – Mathematics and Science Partnerships (MSP) Program**

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**INTRODUCTION AND BACKGROUND FOR THE GRANT’S PROFESSIONAL DEVELOPMENT MODEL**

Current research supports the belief that in order to have a positive and lasting impact on classroom instruction and student learning, high-quality professional development programs must contain the following key elements. Professional development programs created through this grant need to provide for these same elements.

1. The programs need to be classroom focused and enhance the capacity of local teachers to enact curricular reforms that produce higher student achievement in core academic areas.
2. The programs need to recognize that effective and lasting changes in professional beliefs and practices require time, multiple learning opportunities, and appropriate and adequate organizational support.
3. The programs need to both facilitate the growth of a teacher’s subject matter knowledge and increase teacher understanding and use of effective, scientifically research-based instructional strategies.
4. The programs need to provide activities and training that reflect sound research and theory but are clearly grounded in the practice of teaching and learning.
5. The programs need to employ a variety of professional development styles that both engage the individual teacher’s strengths but also support and enhance the development of a “learning community” where teachers work in a collaborative and mutually supportive environment.
6. The programs need to be of sufficient duration (a minimum of 30 hrs.) to actively engage the participant and insure lasting impact.
7. The programs need to connect with and build upon, improvement efforts already ongoing in the participant’s school and district.
8. The programs need to allow the participant to utilize curriculum and classroom materials from the participant’s school and district.
9. The programs need to provide for specific and targeted resources to insure there is adequate support for implementation and subsequent sustainability of the professional development.
10. The programs need to emphasize the involvement of school and district administration.
11. The programs need to be data driven.

**PROFESSIONAL DEVELOPMENT**

As defined by ARM 10.55.714, “professional development” means instructional related activities that:

1. are focused on teachers as central to student learning, yet include all other members of the school community;
2. are focused on individual, collegial, and organizational improvement;
3. respect and nurture the intellectual and leadership capacity of teachers, principals and others in the school community;
4. reflect proven scientifically based research and practice in teaching, learning and leadership;
5. enable teachers to develop further experience in state content standards and assessment, teaching strategies, use of technologies, and other essential elements in teaching to high standards;

## **Appendix C – Research and Policy Base, continued**

6. promote continuous inquiry and improvement embedded in the daily life of schools;
7. are ongoing and sustained;
8. are planned collaboratively by those who will participate in and facilitate that development;
9. require substantial time and resources;
10. are driven by a coherent long-term plan; and
11. are evaluated ultimately on the basis of their impact on teacher effectiveness and student learning, and this assessment guides subsequent professional development efforts.

### **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.

**Appendix D – Partnership Identification  
Form**

*Montana Office of Public Instruction  
ESEA Title II, Part B – Mathematics and Science Partnerships (MSP) Program*

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**PARTNERSHIP IDENTIFICATION FORM**

*Include a Partnership Identification Form for each of the partner institutions/organizations.*

**PARTNER INSTITUTION:**

\_\_\_\_\_

**Contact Name/Title:** \_\_\_\_\_

**Contact Mailing Address:**

\_\_\_\_\_

\_\_\_\_\_

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**Telephone:** \_\_\_\_\_

**Fax:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_

**Type of Institution/Organization:**

\_\_\_\_\_

**Partner School District Demographics (If Applicable):**

<b>Appendix E – Budget Form</b>
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**Montana Office of Public Instruction  
ESEA Title II, Part B – Mathematics and Science Partnerships (MSP) Program**

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**Budget  
Partnership Funding Request**

**Program Title:**

<b>Direct Cost Requested for Partner</b>	<b>TOTAL</b>
<b>1. Salaries &amp; Wages (Professional and Clerical)</b>	
<b>2. Employee Benefits</b>	
<b>3. Travel in State</b>	
<b>4. Travel Out of State</b>	
<b>5. Materials and Supplies</b>	
<b>6. Consultants and Contracts</b>	
<b>7. Teacher Stipends</b>	
<b>8. Equipment (Purchase)</b>	
<b>9. Other (Equipment Rental, Printing, etc.)</b>	
<b>Indirect Costs* (if appropriate)</b>	
<b>Total Budget</b>	
<b>OPI Use Only: Approved By/Date</b>	

**\*The indirect cost rate shall not exceed the indirect cost rate for the partner with the lowest indirect cost rate.**

**This form is a required element of the grant application. Justification for each of the categories shall be included in the budget narrative portion of the application. For reporting, an itemized breakdown of these budget categories and a budget narrative explaining how each line item was calculated and the actual total project cost share must be included.**

## Appendix F – Levels of PD Evaluation

Adapted from Guskey, Thomas R. *Evaluating Professional Development*  
 Thousand Oaks, CA: Corwin Press, Inc, 2000

EVALUATION LEVEL	QUESTIONS TO BE ANSWERED	MEASURE	WHAT IS MEASURED?	HOW WILL INFORMATION BE USED?
<b>1</b> <b>PARTICIPANTS' REACTIONS</b>	<ul style="list-style-type: none"> <li>• Did they like it?</li> <li>• Was their time well-spent?</li> <li>• Did the material make sense?</li> <li>• Will it be useful?</li> <li>• Was the leader knowledgeable and helpful?</li> <li>• Were the refreshments fresh and tasty?</li> <li>• Was the room the right temperature?</li> </ul>	<ul style="list-style-type: none"> <li>• Questionnaires or surveys administered at the end of the session</li> </ul>	<ul style="list-style-type: none"> <li>• Initial satisfaction with the experience</li> </ul>	<ul style="list-style-type: none"> <li>• To improve professional development program design and delivery</li> </ul>
<b>2</b> <b>PARTICIPANTS' LEARNING</b>	<ul style="list-style-type: none"> <li>• Did participants acquire the intended knowledge and skills?</li> </ul>	<ul style="list-style-type: none"> <li>• Paper-and-pencil instruments</li> <li>• Simulations</li> <li>• Demonstrations</li> <li>• Participant reflections (oral and/or written)</li> <li>• Participant portfolios</li> </ul>	<ul style="list-style-type: none"> <li>• New knowledge and skills of participants</li> </ul>	<ul style="list-style-type: none"> <li>• To improve instructional practice</li> <li>• <b>To demonstrate the impact of professional development</b></li> </ul>
<b>3</b> <b>ORGANIZATIONAL SUPPORT AND CHANGE</b>	<ul style="list-style-type: none"> <li>• Were sufficient resources made available?</li> <li>• Were problems addressed quickly and efficiently?</li> <li>• Was implementation advocated, facilitated, and supported?</li> <li>• Were successes recognized and shared?</li> <li>• Was the support public and overt?</li> <li>• What was the impact on the organization?</li> <li>• Did it affect organizational climate and procedures?</li> </ul>	<ul style="list-style-type: none"> <li>• Minutes from follow-up meetings</li> <li>• Questionnaires</li> <li>• Structured interviews with participants and district or school administrators</li> <li>• District and school records</li> <li>• Participant portfolios</li> </ul>	<ul style="list-style-type: none"> <li>• The organization's advocacy, support, accommodation facilitation, and recognition</li> </ul>	<ul style="list-style-type: none"> <li>• To document and improve organizational support</li> <li>• To inform future change efforts</li> </ul>
<b>4</b> <b>PARTICIPANTS' USE OF NEW KNOWLEDGE AND SKILLS</b>	<ul style="list-style-type: none"> <li>• Did participants effectively apply the new knowledge and skills?</li> </ul>	<ul style="list-style-type: none"> <li>• Questionnaires</li> <li>• Structured interviews with participants and their supervisors</li> <li>• Participant reflections (oral and/or written)</li> <li>• Participant portfolios</li> <li>• Direct observations</li> <li>• Video or audiotapes</li> </ul>	<ul style="list-style-type: none"> <li>• Degree and quality of implementation</li> </ul>	<ul style="list-style-type: none"> <li>• To document and improve the implementation of program content</li> <li>• <b>To demonstrate the impact of professional development</b></li> </ul>
<b>5</b> <b>STUDENT LEARNING OUTCOMES</b>	<ul style="list-style-type: none"> <li>• What was the impact on the students?</li> <li>• Did it affect student performance or achievement?</li> <li>• Did it influence student's physical or emotional well-being?</li> <li>• Are students more confident as learners?</li> <li>• Is Student Attendance improving?</li> <li>• Are dropouts decreasing?</li> </ul>	<ul style="list-style-type: none"> <li>• Student records</li> <li>• School records</li> <li>• Questionnaires</li> <li>• Structured interviews with students, parents, teachers, and/or administrators</li> <li>• Participant portfolios</li> </ul>	<ul style="list-style-type: none"> <li>• Student learning outcomes</li> <li>• Cognitive (performance and achievement)</li> <li>• Affective (attitudes and dispositions)</li> <li>• Psychomotor (skills and behaviors)</li> </ul>	<ul style="list-style-type: none"> <li>• To focus and improve all aspects of program design, implementation, and follow-up</li> <li>• <b>To demonstrate the overall impact of professional development</b></li> </ul>

**Appendix G – Grant Application Review Rubric**

**Montana Office of Public Instruction**

**ESEA Title II, Part B – Mathematics and Science Partnership (MSP) Program**

**PARTNERSHIP**

0 – 2 Points	3 - 5 Points
<p><b>Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is not a complete description of the partnership including:               <ol style="list-style-type: none"> <li>a. list of all partners</li> <li>b. how the partnership operates and evidence of ongoing collaboration to support the implementation of the partnership to reach its goals</li> <li>c. how the duties and responsibilities are shared between the partners</li> <li>d. how will the partnership foster communication and interaction of the partners</li> </ol> </li> <li>2) There is little or no evidence that the partnership has sufficient capacity to organize and manage the project</li> <li>3) There is no evidence that the required core planning team will regularly assemble</li> <li>4) There is not a complete description of how the effectiveness of the partnership will be assessed during the operation time frame</li> </ol>	<p><b>Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is a complete description of the partnership including:               <ol style="list-style-type: none"> <li>a. list of all partners</li> <li>b. how the partnership operates and evidence of ongoing collaboration to support the implementation of the partnership to reach its goals</li> <li>c. how the duties and responsibilities are shared between the partners</li> <li>d. how will the partnership foster communication and interaction of the partners</li> </ol> </li> <li>2) There is evidence that the partnership has sufficient capacity to organize and manage the project</li> <li>3) There is evidence that the required core planning team will regularly assemble</li> <li>4) There is a complete description of how the effectiveness of the partnership will be assessed both during the development and operation time frame</li> </ol>

INITIAL SCORE: \_\_\_\_\_

FINAL SCORE - WEIGHT FACTOR (3X THE INITIAL SCORE): \_\_\_\_\_

**IMPLEMENTATION SUPPORT AND SUSTAINABILITY FOR PARTICIPANTS**

0 – 2 Points	3 - 5 Points
<p><b>Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, all of the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is not a complete description of how the project will provide implementation and sustainability support for the school and district participants, RESA network and the Montana STEM Initiative through professional development including:               <ol style="list-style-type: none"> <li>a. how time will be provided for ongoing study, practice, and practice with feedback</li> <li>b. how the project will work with teachers to adapt applicable district science or mathematics instructional strategies to increase K-12 student learning in mathematics or science</li> <li>c. how the project will facilitate targeted professional development for teachers who need more intensive or in-depth assistance through the use of regionally based job-embedded professional development delivered through a variety of venues including distance learning</li> <li>d. how the project will ensure the meaningful engagement of school, district, RESA, and STEM leadership</li> <li>e. how the project will provide the teachers and administrators with professional development skills to assist other educators, in their school, district, or region, on the implementation of the common standards for math or science</li> </ol> </li> </ol>	<p><b>Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is a complete description of how the project will provide implementation and sustainability support for the school and district participants, RESA network and the Montana STEM Initiative through professional development including:               <ol style="list-style-type: none"> <li>a. how time will be provided for ongoing study, practice, and practice with feedback</li> <li>b. how the project will work with teachers to adapt applicable district science or mathematics instructional strategies to increase K-12 student learning in mathematics or science</li> <li>c. how the project will facilitate targeted professional development for teachers who need more intensive or in-depth assistance through the use of regionally based job-embedded professional development delivered through a variety of venues including distance learning</li> <li>d. how the project will ensure the meaningful engagement of school, district, RESA, and STEM leadership</li> <li>e. how the project will provide the teachers and administrators with professional development skills to assist other educators, in their school, district, or region, on the implementation of the common standards for math or science</li> </ol> </li> </ol>

<p>2) There is not a description of how continued support for the participants might occur beyond the life of the grant</p>	<p>2) There is a description of how continued support for the participants might occur beyond the life of the grant</p>
<p style="text-align: center;"><b>0 – 2 Points</b></p> <p><b>Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, all of the critical attributes listed below:</b></p> <p>1) There is not a complete description of how the project will provide for implementation support and sustainability for the STEM curricula that is part of the professional development including:</p> <ul style="list-style-type: none"> <li>a. how time will be provided for ongoing study, practice, and practice with feedback</li> <li>b. how the project will work with teachers to adapt applicable district science and mathematics curriculum and instructional units to support integration of STEM</li> <li>c. how the project will facilitate targeted professional development for teachers who need more intensive or in-depth assistance through the use of emerging technologies and distance learning</li> <li>d. how the project will ensure the meaningful involvement of school, district, and RSA leadership</li> <li>e. how the project will provide the teachers with professional development skills to assist other teachers, in their school, district, or region, on the implementation of STEM curricula</li> </ul> <p>2) There is not a description of how continued support for the participants might occur beyond the life of the grant</p>	<p style="text-align: center;"><b>3 - 5 Points</b></p> <p><b>Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:</b></p> <p>1) There is a complete description of how the project will provide for implementation support and sustainability for the STEM curricula that is part of the professional development including:</p> <ul style="list-style-type: none"> <li>a. how time will be provided for ongoing study, practice, and practice with feedback</li> <li>b. how the project will work with teachers to adapt applicable district science and mathematics curriculum and instructional units to support integration of STEM</li> <li>c. how the project will facilitate targeted professional development for teachers who need more intensive or in-depth assistance through the use of emerging technologies and distance learning</li> <li>d. how the project will ensure the meaningful involvement of school, district, and RSA leadership</li> <li>e. how the project will provide the teachers with professional development skills to assist other teachers, in their school, district, or region, on the implementation of STEM curricula</li> </ul> <p>2) There is a description of how continued support for the participants might occur beyond the life of the grant</p>

INITIAL SCORE: \_\_\_\_\_

FINAL SCORE - WEIGHT FACTOR (4X THE INITIAL SCORE): \_\_\_\_\_

**EVALUATION AND ACCOUNTABILITY PLAN**

<p style="text-align: center;"><b>0 – 2 Points</b></p> <p><b>Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:</b></p> <p>1) There is not a complete description of how the project will ensure the development of an effective and comprehensive assessment and accountability process (including applicable measurable objectives) by increasing:</p> <ul style="list-style-type: none"> <li>a. active engagement of district administrators and K-12 educators</li> <li>b. math or science common standards content knowledge professional development</li> <li>c. instructional strategies through STEM professional development including implementation assessment</li> <li>d. operation of the project delivery system – regional and school based workshops, distance learning and materials development</li> </ul> <p>2) Applicable levels of the Guskey model were not addressed</p> <p>3) There is not a complete description of what formative evaluation process will be used during implementation to identify barriers and facilitating events or structures that informs the project’s ongoing planning and implementation efforts</p> <p>4) There is not a complete description of how the project will communicate and disseminate information on the project and subsequent professional development activities to appropriate and applicable constituencies</p>	<p style="text-align: center;"><b>3 - 5 Points</b></p> <p><b>Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:</b></p> <p>1) There is a complete description of how the project will ensure the development of an effective and comprehensive assessment and accountability process (including applicable measurable objectives) by increasing:</p> <ul style="list-style-type: none"> <li>a. active engagement of district administrators and K-12 educators</li> <li>b. math or science common standards content knowledge professional development</li> <li>c. instructional strategies through STEM professional development including implementation assessment</li> <li>d. operation of the project delivery system – regional and school based workshops, distance learning and materials development</li> </ul> <p>2) All applicable levels of the Guskey model were addressed, with particular emphasis on Level 5</p> <p>3) There is a complete description of what formative evaluation process will be used during implementation to identify barriers and facilitating events or structures that informs the project’s ongoing planning and implementation efforts</p> <p>4) There is a complete description of how the project will communicate and disseminate information on the project and subsequent professional development activities to appropriate and applicable constituencies</p>
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INITIAL SCORE: \_\_\_\_\_

FINAL SCORE - WEIGHT FACTOR (5X THE INITIAL SCORE): \_\_\_\_\_

**BUDGET AND COST EFFECTIVENESS**

0 – 2 Points	3 - 5 Points
<p><b>Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is not a complete description outlining the basis for determining the amounts shown on the budget</li> <li>2) The budget is not in alignment with the activities described in the various parts of the grant proposal narrative</li> <li>3) The amount assigned to a given portion of the budget seems either excessive or insufficient given the goals of the project</li> <li>4) All the required budget forms were not included</li> </ol>	<p><b>Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is a complete description outlining the basis for determining the amounts shown on the budget</li> <li>2) The budget is aligned with the activities described in the various parts of the grant proposal narrative</li> <li>3) The amount assigned to each portion of the budget is sufficient given the goals of the project</li> <li>4) All the required budget forms were included and complete</li> </ol>

INITIAL SCORE: \_\_\_\_\_

FINAL SCORE - WEIGHT FACTOR (3X THE INITIAL SCORE): \_\_\_\_\_

**OVERALL DESIGN AND EFFICACY OF PROJECT PLAN**

0 – 2 Points	3 - 5 Points
<p><b>Project proposal does not address, or does not meet the minimum expectations for sufficiently addressing, the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is not a complete description of how the project will address all the program goals and grant requirements as outlined in <b>Sections II Goals of Montana MSP Grant Program and VII Requirements and Preparation of Application</b></li> <li>2) There is not a complete description of the research base for the project components</li> <li>3) There is not a complete description of a process to identify and build on previous professional development work in the schools, districts, and RESAs</li> <li>4) There is not a complete description of how the ongoing goal of increasing educators' understanding of the critical role of college and career readiness standards in the design and delivery of effective instruction and professional development</li> <li>5) All applicable sections of the partnership operational narrative were not addressed</li> <li>6) The likelihood of the overall plan being effective is low</li> </ol>	<p><b>Project proposal clearly meets or exceeds the expectations for sufficiently addressing all of the critical attributes listed below:</b></p> <ol style="list-style-type: none"> <li>1) There is a complete description of how the project will address all program goals and grant requirements as outlined in <b>Sections II Goals of Montana MSP Grant Program and VII Requirements and Preparation of Application</b></li> <li>2) There is a complete description of the research base for the project components</li> <li>3) There is a complete description of a process to identify and build on previous professional development work in the schools, districts, and RESAs</li> <li>4) There is a complete description of how the ongoing goal of increasing educators' understanding of the critical role of career and college readiness standards in the design and delivery of effective instruction and professional development</li> <li>5) All applicable sections of the partnership operational narrative were adequately addressed</li> <li>6) The likelihood of the overall plan being effective is moderate to high</li> </ol>

INITIAL SCORE: \_\_\_\_\_

FINAL SCORE - WEIGHT FACTOR (5X THE INITIAL SCORE): \_\_\_\_\_

**RESOURCES**

**LINKS TO COMMON CORE STANDARDS FOR MATHEMATICS**

[http://opi.mt.gov/Curriculum/MontCAS/GetReady.php#gpm1\\_4](http://opi.mt.gov/Curriculum/MontCAS/GetReady.php#gpm1_4)

**LINK TO K-12 FRAMEWORK FOR SCIENCE EDUCATION**

[http://www.nap.edu/catalog.php?record\\_id=13165](http://www.nap.edu/catalog.php?record_id=13165)

**LINK TO RESA WEB SITE:** [http://www.opi.mt.gov/Programs/Index.html?gpm=1\\_12](http://www.opi.mt.gov/Programs/Index.html?gpm=1_12)

**MSP HOME PAGE:** <http://www.opi.mt.gov/curriculum/msp/>

**LINK TO ED STEM WEB PAGE:** [ESEA STEM Blueprint](#)