MCCSM = Montana Common Core Standards for Mathematics

Abstract

This proposal initiates a model for statewide training of K-12 teachers in implementing the Montana Common Core Standards for Mathematics (MCCSM). In Year 1, we will prepare high-quality materials to help middle grades teachers implement the MCCSM, using our partner districts as pilot sites to build an infrastructure that stretches across Montana and a professional development model that can be adopted by its Regional Education Service Areas (RESAs). The training for the initial group of *seed teachers* will occur in three phases: a workshop to launch key themes within content, practice, STEM, and professional learning; a series of online modules where teachers study the key themes more deeply and build lessons focused on algebraic thinking, fraction-ratio-proportion, and the MCCSM Mathematical Practices; and a summer academy where teachers add the analysis of *public lessons* to their study of MCSSM content and develop a plan for disseminating information in their home districts. In Year 2, the seed teachers will provide training and expertise to their colleagues with support provided by mentor teachers, the RESAs, and project staff. This project will be expanded in Years 2 and 3 to include a wider audience, extend to new grade levels, and add an assessment component.

The first three project objectives relate primarily to teachers and teaching: (1) Common Core content knowledge; (2) mathematical practices and STEM; (3) demonstration and school-based learning. The remaining three objectives relate to building a statewide system of support for implementing MCCSM: (4) implementation and professional development; (5) mentoring and facilitation; and (6) modeling and metacognition.

MCCSM = Montana Common Core Standards for Mathematics

Partnership Operational Narrative

NOTE: The working title of this project is ***MCCSM = Montana Common Core Standards for Mathematics.*** *A more suitable title will be determined by project leadership if the proposal is funded.*

PROJECT GOAL: Montana school districts have many avenues for acquiring information about the Montana Common Core Standards for Mathematics (MCCSM) including OPI training, MCTM workshops, national consultants, and textbooks promising alignment. The state now faces the challenge of actually implementing the MCCSM. Our goal is to develop a model that will embed implementation much more deeply and bring the spirit of the new content standards and mathematical practices to life. Our approach is to work within a K-12 system by training a group of selected *seed teachers* who represent critical mass within the district. In Year 1, we will focus on **grades 4-7, hereafter referred to as the *middle grades*.** Through experience, application, and reflection, the seed teachers will:

- Interpret content and practices outlined in the Montana Common Core Standards for Mathematics (MCCSM) in the context of our state's vision and their district's unique setting
- Use learning progressions and other available tools to enable implementation
- Examine, model, and create learning environments that foster the MCCSM Mathematical Practices
- Discover ways to align and integrate existing curriculum with the MCCSM
- (Eventually) prepare for MCCSM-based assessment
- These teachers will also learn essential *content* based on key learning progressions in their grade level in the areas of *algebraic thinking* and *fraction-ratio-proportion*.

The seed teachers will return to the classroom and "take root" as embedded experts and facilitators, ready to promote and facilitate MCCSM implementation throughout their grade band, school, and/or district. They will approach this work with a rich set of skills, resources, and mentor support described later in this proposal.

THREE-YEAR VISION: In Year 1, we will prepare high-quality materials to help teachers and districts implement the MCCSM, using our partner schools as pilot sites to build an infrastructure that stretches across Montana and a professional development model that can be adopted by its Regional Education Service Areas (RESAs). In Years 2 and 3, we will work with the RESAs to reach out to a wider audience with our materials, expand professional development to address new grade levels, and incorporate new components such as assessment to meet changing needs. At the same time, we will use what has been learned to seek funding at the federal level to expand on the most effective elements of our design and product.

A. Partnerships.

In keeping with the mandate to create a statewide, systemic, and sustainable project, we have developed a Year 1 partnership that represents the breadth of the state. Both Montana State University and The University of Montana are contributing faculty and infrastructure to the project. Along with the broad support of all five Regional Education Service Areas, we have obtained specific partnership commitments from over a dozen school districts representing all five RESAs. Nearly all of these are designated high-need districts. These districts represent only the initial partnership; we expect to invite additional schools and districts to participate in project activities as funds allow.

We have deliberately built a partnership representing the diversity of Montana's school districts and student audience. If we intend to serve the entire state, we need to learn how to effectively disseminate information in a variety of school settings. A key component of our Year 1 activities is to experiment with vehicles for learning that are effective in Montana's large, medium, small, and far-flung rural districts. This goal is embodied in our choice of partner districts:

- Large (Class AA) Partners: Bozeman, Kalispell
- Medium (Class A/B) Partners: Anaconda, Lewistown, Miles City, Conrad, Target Range K-8
- Small (Class B/C) Partners: these partners will cluster as rural cohorts

- Region 5/West rural cohort: Charlo, Arlee, Hot Springs
- Region 2/North rural cohort: Box Elder (and tentatively Rocky Boy)
- Region 1/East rural cohort: Terry (and tentatively others)

In Year 1 we are targeting grades 4-7 for reasons outlined later in this proposal. In the larger districts, 12 to 15 participants will represent this grade band, drawn from middle and elementary schools. In medium to small districts, 3 to 5 teachers will represent most of the grades in the middle and elementary schools or in a K-8 combined school. In the rural districts, 1 or 2 teachers from each school will join a rural cohort and collaborate across districts.

Core Planning Team. Members of the Core Planning Team will oversee the design and delivery of the project. The team will meet face-to-face in early Fall 2012, followed by at least one virtual meeting and ongoing feedback via email. The team will be charged with providing feedback and generating ideas on all aspects of the project: logistics; recruitment of participants; design and delivery of professional development; proposed instructional models and approaches; and the content of our face-to-face and online learning modules. They will also recommend potential mentor teachers and members of the Design Team.

Our goal is to have two administrators, two teachers, and two curriculum directors on the Core Planning Team to represent the full spectrum of large, medium/small, and rural partners. The team also includes three faculty members from MSU and UM, the Project Manager, and the external evaluator. We have invited three engineers from the MSU faculty to join the partnership as Core Planning members or STEM advisors; at time of submission we had not received a response but have built faculty consulting into the budget. Dr. Lisa Davis, an applied mathematician at MSU, has agreed to lend her expertise as a STEM advisor in the design process.

RESAs 1, 4, and 5 will be represented on the Core Planning Team, and all five RESAs have committed to the partnership. We have commitments from the Montana Learning Center and the Montana Council of Teachers of Mathematics to contribute to the partnership by promoting STEM and Common Core activities, hosting events, and sharing resources. Finally, we will invite a project leader from the pending *MSP science partnership* to join our Core Planning Team to facilitate the exchange of ideas. Key partnership representatives are listed below (Core Planning Team in **bold**).

LEA Partners

Bozeman School District (Large district, RESA4)
- **Curriculum Director: Robin Miller**

Lewistown School District (Medium district, RESA3)
- **Curriculum Director: Scott Dubbs**

Miles City School District (Medium district, RESA1)
- **Principal: Laurie Huffman**

Conrad School District (Medium district, RESA2)
- **Teacher: Jennifer Schlepp**

Target Range School District (Medium district, RESA5)
- **Principal: Luke Laslovich**

Charlo School District (Western rural cohort, RESA5)
- **Teacher: Jared Miller**

Higher Education Partners

Montana State University
- Dept. of Mathematical Sciences Chair: Ken Bowers
- **Mathematics Faculty and PI: Jennifer Luebeck**
- **Mathematics Faculty and Co-PI: Brian Lindaman**

The University of Montana
- Dean of the College of Education: Dr. Roberta (Bobbie) Evans
- **Mathematics Education Faculty and Co-PI: Georgia Cobbs**

RESA, NPO and Other Partners

- **Region 1: Kim Stanton; Region 4: Bruce Grubbs; Region 5: Nancy Marks**
- Region 2: Gaye Genereaux; Region 3: Marsha Sampson

- **Project Manager: Lisa Scott**
- **External Evaluator: Rose Shaw – Metrica, Inc., Colorado**
- **MSP Science Partnership Representative**

- Montana Learning Center
- Montana Council of Teachers of Mathematics
- Professional Development Consultant: Karma Nelson

B. Research Base

Professional development will support the formation of *learning communities* as a means to effect greater change in teacher development (DuFour & Eaker, 1998; Sparks, 2001). Project activities will foster shared values, provide a support system for encouragement and personal growth, and allow teachers to collectively investigate best practices (Stigler & Hiebert, 1999; DuFour, 2000, and others). For example, teachers will individually and collaboratively design, teach, observe, and analyze standards-based instruction. These *public lessons* are conceptualized as a modification of *lesson study*, a process for creating deep and grounded reflection about the complex activities of teaching as well as sharing and discussing with colleagues (Fernandez & Chokshi, 2002).

Mathematics content will focus on (1) the development of *proportional reasoning,* a way of thinking that is not automatic (Lamon, 1999) and *algebraic thinking*, a habit of mind that develops over time as students encounter algebraic ideas across the pre-K–12 curriculum (NCTM, 2009). Teachers will use this content as they design lessons built on the CCSS Mathematical Practices. By highlighting how the Mathematical Practices can be applied to science, engineering, and technology, they will experience how mathematics is connected to related STEM fields. *STEM integration* will be further emphasized through the use of materials from A World In Motion (AWIM) and similar high-quality programs.

Design and delivery of the proposed professional development is closely linked to Montana's Nine Correlates of Effective Schools (adapted from Lezotte, 2002). Instruction (C3) will be improved through a change in school culture (C4). Teachers will encounter several forms of professional development (C6), including school-based activities that are positioned in the school structure (C8) and support from leadership (7). This approach addresses the concern of the President's Council of Advisors on Science and Technology (2010) that "Teachers lack adequate support, including appropriate professional development as well as interesting and intriguing curricula" (p. 2).

C. Needs Assessment.

Montana, like many states, has spent the past year generating *awareness* regarding the Common Core State Standards and is now moving forward with MCCSM *implementation*. We have heard from national speakers that the implementation phase is crucial—and also that it is difficult to achieve through brief workshops, Webinars, and printed materials. Groups of teachers and administrators are receiving broad exposure to the MCCSM, but struggle with next steps in building a CCSS infrastructure in their schools. A well-prepared core of school-embedded teachers who possess deep knowledge of the Common Core, ready resources, and ongoing mentor support offer a much stronger approach to implementation.

Most of our partner districts have high-need designation based on Free/Reduced Lunch data for Montana. Data reported for 2012 on the OPI Web site indicates that more than 20% of students in most of our schools are classified as eligible for free or reduced lunch. The table below summarizes this data.

Combined K-8 Schools in District	**% Eligible for Free/Reduced**	**Combined K-8 Schools in District**	**% Eligible for Free/Reduced**
Bozeman Elementary SD	27.39	Lewistown Elementary SD	48.85
Kalispell Elementary SD	61.68	Charlo Elementary SD	50.00
Target Range Elem. SD	39.67	Arlee Elementary SD	74.68
Miles City Elementary SD	41.65	Hot Springs Elementary SD	77.44
Terry K-12 Schools	53.47	East Glacier Elementary SD	56.82
Anaconda Elementary SD	63.07	Box Elder Elementary SD	78.59
Conrad Elementary SD	41.21		

D. Project Plan

D1a. Objectives for Teachers: These objectives promote teachers' understanding of and ability to teach important mathematics content in a way that challenges and inspires students as mathematical thinkers.

1. **Common Core Content Knowledge:** Teachers will increase their understanding of mathematics relevant to *algebraic thinking* and *fractions, ratio, and proportion*. These two areas will be studied for their mathematics content, but also in the context of learning progressions.
2. **Mathematical Practices and STEM:** Teachers will experience and demonstrate how the eight mathematical practices of the Common Core must be embedded in teaching and learning. They will participate in and observe exemplary standards-based lessons, and create their own lessons that infuse worthwhile mathematical practices. They will understand how *modeling* and *structure* support *STEM-integrated instruction* and the common goals and practices shared by STEM disciplines.
3. **Demonstration and School-Based Learning:** Teachers will be prepared to share their knowledge with colleagues in a learning community setting upon returning to their home schools. Partner districts will plan for *coordinated dissemination of project materials* across the district.

D1b. Objectives for System-wide Change: These objectives promote a sustainable statewide model for preparing teachers, schools, and districts to implement Montana's Common Core.

4. **Implementation and Professional Development:** The project will produce a *collection of learning modules* for use in face-to-face and online instruction. The topical modules can be used in a variety of settings and will focus on key project themes: algebraic thinking; fraction-ratio-proportion; learning progressions; mathematical practices; using reflection and self-analysis in developing standards-based lessons; and facilitating a learning community.
5. **Mentoring and Facilitation:** The partnership will produce a *cadre of outstanding teacher leaders* (a) deeply knowledgeable about mathematics content and the Common Core; (b) qualified to demonstrate exemplary standards-based instruction; and (c) prepared to lead and facilitate professional development using project-created materials and exemplars.
6. **Modeling and Metacognition:** The project will produce a series of *videorecorded "public lessons"* for use by individuals and in professional development. Each lesson will include a plan-teach-reflect sequence and include verbal and visual examples of each phase. These will be accessible through the RESAs in electronic form, and some may be condensed for posting on the Web.

D2. Number and Types of Teacher Participants. Our Year 1 focus is on students and teachers in grades 4-7, which we define as the *middle grades*. Several factors guided this choice.

1. **Significance:** The mathematics content encountered in the middle grades is fundamental to success in high school mathematics and to preparing students for college and careers. This includes the development of algebraic thinking habits and skills (Graham, Cuoco, & Zimmerman, 2010) and a deep conceptual understanding of fraction, ratio, and proportion. (Lobato & Ellis, 2010).
2. **Need:** The middle grades represent a critical point in the social and mathematical experience of learners. At the same time, students can experience great disparities of instruction (elementary teachers with limited content knowledge or by high school teachers with limited knowledge of preadolescent learners).
3. **Efficiency:** We believe the most effective way to create a systemic impact within a district is by equipping middle grades teachers because their influence extends in both directions, affecting instructions at the primary level and in 8th- and 9th-grade algebra.
4. **Innovation:** Many initiatives are already underway to "grow into" implementation of the Common Core State Standards beginning with the primary grades. We want to explore a more comprehensive, systematic approach.

Seed teachers will form the main cohort of project participants. These are teams of teachers who represent a "critical mass" of mathematics instructional staff at the target grade levels in a given district. The number of seed teachers required from a district will depend on its size. For example, in Bozeman or Kalispell we estimate 12 seed teachers as an adequate critical mass to "seed" the middle grades population. In Charlo, Terry, and other rural districts, two seed teachers may be enough. The rural seed teachers will form cohorts to allow mutual planning and support.

The seed teachers will serve as a school-embedded source of MCCSM resources, will provide local professional development, and will facilitate site-based learning communities. Each district will develop its own process for selecting seed teachers. Administrators will be encouraged to consider a list of qualifications such as mathematical expertise, experience with MCCSM, and potential to lead colleagues and facilitate

professional learning. Our goal for *critical mass* is 25% of mathematics teachers in the grade band, with a minimum of 2 teachers per school.

Since part of creating a sustainable approach to implementing standards is finding out "what works," we have selected Year 1 partner schools with a purposeful approach that allows for development and implementation within a wide variety of communities:

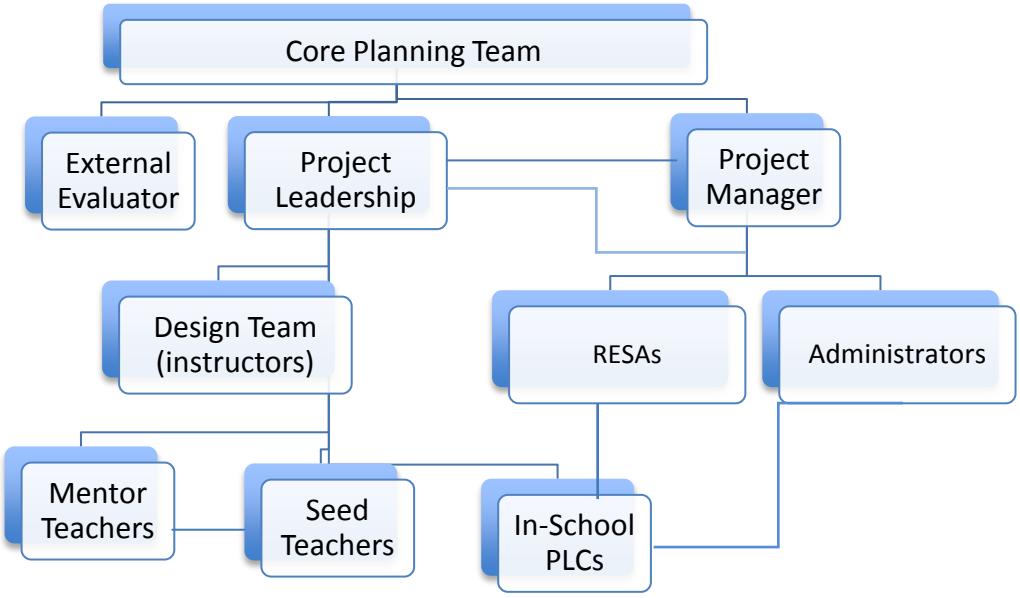
- Large "urban" districts with one (Kalispell) or two (Bozeman) middle schools
- Medium (Lewistown) and small (Conrad) districts that serve a community
- Rural districts (Charlo, Arlee) working together in regional cohorts

We have also purposefully recruited LEA partners from all five RESAs, although in Year 1 we are primarily working within Regions 1, 4, and 5.

A second, smaller cohort of ***mentor teachers*** will be identified and recruited by the project based on criteria such as knowledge of mathematics content and pedagogy, breadth and depth of teaching experience, evidence of leadership and exemplary teaching, and demonstrated knowledge of the MCCSM. The Core Planning Team will work with project leadership to recommend potential mentor teachers and define selection criteria. These teachers will be the first to teach and record public lessons for demonstration, and will be assigned to one or more districts to mentor the seed teachers as they implement the MCCSM.

Finally, a select group of classroom teachers and mathematics teacher educators will work on the professional development ***Design Team***. This group will be responsible for designing and gathering materials for the sequence of professional development activities described later in this section. The Design Team will include 6 to 8 expert teachers and 2 to 4 university faculty recommended by the Core Planning Team who will work as a whole group and in subteams through Fall 2012. A combination of teachers and mathematics educators from the Design Team will also be assigned to deliver professional development in Spring 2013.

The diagram below demonstrates most, if not all, of the hierarchies and relationships connecting different components of the partnership.



The Core Planning Team represents the entire partnership, providing vision and feedback. The external evaluator works independently and objectively while interacting with the Core Planning Team and project leadership. The Project Manager is supervised by project leadership and also responds to the Core Planning Team. Project leadership and the Project Manager interact with administrators and RESAs, who are ultimately responsible for maintaining in-school PLCs. The Design Team, under the project leadership, creates professional development for both mentor and seed teachers. Mentors facilitate the work of seed teachers, who in turn facilitate in-school PLCs.

Some membership overlap is anticipated between mentor teachers, the Design Team, and the Core Planning Team. For example, an excellent mentor teacher may also be the best person design a workshop on algebraic thinking. Such integration will strengthen the coherence and cohesiveness of the project and partnership.

D3. Planned Professional Development Work. After funds are awarded, the Core Planning Team will meet to oversee the selection of seed teachers by the partner districts, identify and recruit mentor teachers and Design Team members from across the state, review long-range plans for professional development, and discuss how to build infrastructure for district-based professional learning. The Design Team will immediately begin preparing

for professional development in Spring 2013. They will first finalize a multi-phase vision for professional development, then conceptualize each phase, and finally create, gather, and sequence materials for specific face-to-face sessions and online modules. The Design Team will interact with the MSP science partnership to exchange approaches and materials that promote STEM integration and enrich professional development in both partnerships.

Fifty to 70 seed teachers and 10 mentor teachers will participate in Year 1. Both seed teachers and mentor teachers will complete the full sequence of professional development activities in Spring/Summer 2013. In addition, mentor teachers will pilot the *public lesson* aspect of the project. They will create exemplary standards-based and STEM-integrated lessons, record the teaching of those lessons as a demonstration, and document how they metacognitively analyze the lesson by recording pre-lesson preparation and post-lesson reflection sessions. Finally, they will receive added training in leadership and school change to support their work as mentors in Year 2.

The seed teachers' study of core mathematics content and immersion in the MCCSM during Spring 2013 will provide immediate returns to the partner LEAs. Even more valuable will be the outcomes of Year 2, when the seed teachers return to their districts to build and facilitate school-based learning communities focused on MCCSM implementation. They will have many tools to support this work, including:

- The professional development materials, resources, and exemplars they acquired in Year 1
- The lessons, planning tools, and public lesson videos produced by the partnership in Year 1
- Time, opportunity, and administrative support for a school-based MCCSM learning community (including advance planning in Year 1 with the Project Manager)
- External support from an assigned mentor teacher who might also demonstrate standards-based instruction; participate in the learning community; or help with curriculum alignment in the district.

D4. Number and Types of Professional Development. Research and experience (Garet, Porter, Desimone, Birman, & Yoon, 2001; Schwan Smith, 2001) makes it clear that effective professional development is *embedded* in school practice, *collaborative*, and of sufficient *duration*. Our three-phase design and blended

delivery model support the use of research-based strategies for high-quality professional development.

Professional development for the *seed teachers* will span the spring semester and occur as follows.

PD Phase 1: Launch Workshop All teachers will attend a two-day face-to-face workshop in January at a central location. This event serves several purposes:

1. To establish an extended learning community and common goals among the seed teachers and mentor teachers, the RESA directors and support staff, and higher education faculty associated with the project.
2. To clearly communicate the objectives and timeline of the project as well as the eventual role of the seed teachers in district-wide MCCSM implementation during Year 2.
3. To establish a common *awareness* of the MCCSM. Participants from each district will vary in their ability to read, interpret, and apply the Content Standards and Mathematical Practices. We want to ensure that everyone is equipped with adequate baseline knowledge.
4. To launch instruction on key themes for professional development. These include:
    a. Fostering algebraic thinking skills and processes in pre-algebra learners
    b. Sequencing knowledge of fractions, ratios, proportions, and proportional reasoning
    c. Embedding the Mathematical Practices and IEFA in instruction
    d. Accessing, interpreting, and creating multi-grade learning progressions
    e. Recognizing STEM connections within the MCCSM and integrating these through modeling
    f. Creating and facilitating an effective professional learning community

PD Phase 2: Online Modules All teachers will complete a series of online professional development modules during Spring 2013. These will be modeled after the successful modules for beginning teachers created by the NSF-funded eMentoring Project at MSU and used by the nationwide New Teacher Center (http://www.newteachercenter.org/). Each module can be completed in two weeks, and four to six modules will be assigned from January through May. Completion of at least four modules will offer the opportunity for college credit through the National Teachers Enhancement Network at MSU-Bozeman (http://eu.montana.edu/nten).

The online modules will be crafted by the Design Team, but some features can be described here:

- Each module will focus on one of the key themes for professional development described in the previous section. Modules will be *asynchronous* and *self-paced* within a three-week window, meaning that teachers can progress through the modules on their own schedule.
- The content of the modules will combine original material with the best of the high-quality resources already in existence. Completing a module will involve accessing tools, videos, and resources through OPI or other sources (e.g., Inside Mathematics http://insidemathematics.org/ and Illustrative Mathematics http://illustrativemathematics.org/).
- All modules will require teachers to actively reflect and communicate their ideas in a facilitated online discussion forum. Discussions within each module will be moderated by one or more members of the Design Team.
- Built into the modules will be a graduated sequence of lesson planning experiences. For example, in an early module teachers may be given a lesson and asked to adapt it to address a particular subset of standards and practices. In the next stage, they may be asked to adapt a lesson from their own curriculum. Finally, they may create a unique lesson to meet specific standards criteria.

PD Phase 3: Summer Academy All teachers will attend a four-day intensive academy in Summer 2013. As with the launch workshop and online modules, the structure of this event will be based on the partnership's key themes for professional development: algebraic thinking, fraction-ratio-proportion, learning progressions, STEM integration/IEFA, and facilitating professional learning communities. Two new components will be incorporated in the Academy:

1. Reflective analysis of standards-based instruction using *public lesson* videos created by the mentor teachers (these are further explained later in this section). This experience will further prepare the seed teachers to be effective resources, facilitators, and agents of change.
2. Time for seed teachers, working as a district or rural cohort, to develop a strategic plan for locally disseminating knowledge and facilitating MCCSM implementation in Year 2. Seed teachers will work with their assigned mentor; the Project Manager will also provide input based on prior contact with administrators.

The Summer Academy is intended as an immersion experience where teachers dive deeply into the content, purpose, and application of the MCCSM. It will also provide seed teachers with a "lived experience" of the kind of professional learning community they are expected to form in their schools. We provide a *tentative* outline below:

Day 1	**Day 2**	**Day 3**	**Day 4**
3 hours – Content and Practices built around Algebraic Thinking	3 hours – Content and Practices built around Fraction-Ratio-Proportion	3 hours – Modeling and Mathematical Practices and connections to STEM integration	3 hours – Additional content and learning progressions for grades 4-7 (e.g., integers)
2 hours – Professional Learning Communities	2 hours – Professional Learning Communities	2 hours – Professional Learning Communities	2 hours – Professional Learning Communities
2 hours – Video Cases	2 hours – Video Cases	2 hours – Video Cases	2 hours – Video Cases
3 hours - Science, tech and engineering in grades 4-7 content	3 hours – Year 2 Strategic Planning IEFA Contexts	3 hours – Year 2 Strategic Planning IEFA Contexts	3 hours – Summing up and synthesizing; goal-setting; next steps

Mentor teachers will complete all three phases of professional development alongside the seed teachers. They will develop the first *public lessons* to be used with seed teachers as well as standards-based lessons to serve as templates for the online module activities. They will attend extra sessions in January and at the Summer Academy for instruction on mentoring skills, leading school change, developing learning progressions, and using case studies (the public lessons and videos) to facilitate learning.

In Fall 2013, seed teachers will return to their districts to continue professional development. With administrative support and groundwork laid by the Project Manager, they will assemble their grades 4-7 colleagues to share and study the skills and materials they have acquired. They will form a professional learning community to examine alignment of their own curriculum, engage in group planning of standards-based lessons, and observe and discuss exemplary lessons in a modified lesson study format.

In Fall 2013, mentor teachers will be in regular contact with seed teachers in their assigned district. The mentor teachers and Project Manager offer an external layer of support for district-wide implementation. Mentor teachers may visit schools in the district, teach public lessons, demonstrate how reflection and metacognition are used in planning standards-based lessons, and help with curriculum alignment. Through the RESAs, a mentor teacher may also be asked to work with a non-partner district.

Video Cases as Professional Development. An innovative approach to professional development will be the creation of videorecorded public lessons by both mentor teachers and seed teachers. We based our conception of a *public lesson* on the classic lesson study model, although in this modification the lesson study cycle is greatly condensed and the lesson to be analyzed will highlight planning, instruction, and reflection by one teacher rather than a team of teachers. In addition to their use as a professional development device, the public lessons serve as *teacher work samples* and will be considered a source of qualitative data for project evaluation and research.

Many excellent lessons illuminating the Common Core standards and practices are already available on the Web. For example, the "Inside Mathematics" site offers a large library of public lessons, including planning and debriefing sessions, that spans a variety of grade levels and mathematics content. We do not intend to duplicate or simply create a "Montana version" of such resources– in fact, we plan to use existing state and national resources in our online professional development modules. Our vision for recording public lessons is somewhat different. We want to create a small library of video cases in which teachers plan a lesson with deliberate intent to address specific standards, teach that standards-based lesson, and reflect on the results in terms of how—and if—the standards were met.

1) In a pre-lesson presentation, the teacher will describe how the MCCSM standards were examined in preparing the lesson. The discussion will include specific content standards to be met; where the lesson falls in a multi-grade learning progression; and how specific mathematical practices will be emphasized and encouraged. (5 to 10 minutes)
2) Instruction of the lesson will be recorded on video. The teacher might set up a static camera, or invite a colleague or student to record with a handheld camera. The teacher will watch and analyze

the recorded lesson to determine how effectively the students achieved the intended standards and practices. As part of this analysis, the teacher will select the most illuminating portion of the video for sharing with others. (20 minutes maximum)

3) In a post-lesson reflection, the teacher will discuss the success of the lesson and the student learning that resulted. Did students achieve the intended standards and engage in the intended practices? If not, what could be done to improve the lesson? (5 to 10 minutes)

Parts 1 and 3 of this process will be recorded using Camtasia or similar screen-capture software. The teacher can display relevant standards and practices from the MCCSM on a computer screen using Powerpoint or MSWord, while recording a voiceover using the software. The lesson itself (Part 2) will be recorded using available video equipment. Despite the challenge of producing videos of reasonable quality, we believe this three-part process is an exceptional form of professional development. Teachers will learn a great deal from the metacognitive process of examining and identifying relevant standards and practices, the analytic process of reflecting on lesson results, and even the exercise of choosing the most significant portion of the taught lesson.

Recording of public lessons will be introduced in stages during Year 1 of the project. Once mentor teachers have been identified in Fall 2012, one or two mentors will be asked to create the first samples of public lessons. One of these will be used as a tool for professional development at the January Launch Workshop; another may be used in one of the online learning modules. During Spring 2013, each mentor teacher will be asked to record a public lesson. These will become part of professional development during the Summer Academy. Finally, each seed teacher will be encouraged to create a video during Fall 2013. Ideally the seed teachers will use these public lessons to stimulate discussion and demonstrate MCCS implementation with their district-based learning communities. Once a library of public lessons has been created, a RESA technology partner will have the task of condensing the best of the public lessons into a short format (10 minutes).

D5. Duration and Scope of Professional Development. In anticipation of multi-year funding, we have conceived the project as a repeating cycle of roughly four stages. The first cycle is outlined below.

1. Design and development of professional development materials (occurs in Fall 2012).
2. Training of seed teachers representing critical mass in a district (occurs in Spring/Summer 2013).

3. Dissemination of PD across the district via professional learning community (occurs during academic year 2013-2014).
4. Refinement of PD materials and release for statewide use via RESAs (occurs during Summer/Fall 2013).

A single cycle of designing professional development, training a cohort of seed teachers, engaging in district-wide dissemination, and readying materials for statewide release will take 1½ - 2 years, but an overlapping new cycle will be initiated each year. For example, in Year 2 our first cycle for middle grades will be in the district-wide implementation stage, but we will also begin a new cycle as we develop materials for training seed teachers in grades 8-9. The content focus for this new grade band will include important concepts (change) and processes (multiple representation) important to pre-algebra and algebra. Development of this material presents a greater challenge given the multiple options provided in the Common Core for this grade band (e.g., compacted courses in 7th and 8th grade; traditional vs. integrated programs in high school).

We anticipate that some partner districts may ask to continue with the project in the second cycle by identifying a new group of seed teachers for grades 8-9. We believe that the Year 2 budget will require less "overhead" for design and development, allowing us to include more teachers in professional development both from Year 1 partner districts and from new districts. A priority will be to increase the number of "seed districts" in Regions 2 and 3, which are not as strongly represented in Year 1. The mentor teachers selected in Year 1 will continue through the life of the project, and additional mentor teachers may be identified from among the Year 1 seed teachers. Mentor teachers will continue working with their original districts through Year 2, but may also work with seed teachers from a second district in Years 2 and 3. Finally, all mentor teachers will be available to the RESAs for ongoing implementation training across the state.

Several options present themselves for the Year 3 cycle. Implementation training could be developed for additional content areas at the high school or middle school level. Implementation training for grades 4-7 as well as 8-9 could be repeated for a new set of school districts across Montana (although we believe that at this point, the RESAs will be able to offer this training using our materials). Most intriguing to the leadership team at this time is the prospect of developing Year 3 professional development to prepare districts for Common

Core assessments. This would be a timely option given the expected rollout schedule for the Smarter Balanced assessment system.

We have structured professional development in a way that minimizes *instructional release time* for the teacher participants. If the Launch Workshop is held on a Friday/Saturday and all other events are either online or in the summer, we will require only one day of release time for each seed teacher in Year 1. We have budgeted for 20 additional days of substitute pay on the assumption that teachers on the Core Planning Team and Design Team, as well as some mentor teachers, will need release time in the fall.

D6. Project Time Frame. The table below summarizes the **first cycle** of project activities. Professional development is in bold. Evaluation activities are not shown below, but occur throughout the cycle.

Fall 2012 – PLANNING	**Spring 2013 - PD**	**Summer 2013 - PD**
Core Planning Team meetings: • 1 face-to-face, 1 virtual • Review project components • Critique PD design plan **Design Team meetings:** • **1 whole group, then subteams** • **Plan all aspects of PD** • **Project Manager and leadership ensure coherence** Project Manager coordinates: • Selecting seed teachers • Recruiting master teachers • Communicating among partners	50 to 70 seed teachers 10 mentor teachers **January: Launch Workshop:** • **Two days - Bozeman** • **Introduce key PD themes and begin instruction** **Online Modules:** • **Continue key themes of PD** • **4 to 6 self-contained modules each lasting 3 weeks** • **Facilitated and asynchronous** • **Completion required (IHE**	50 to 70 seed teachers 10 mentor teachers **June/July: Summer Academy (intensive immersion)** • **Four days – Montana Learning Center** • **Continue key themes of PD** • **Analyze public lessons** • **Create strategic plan for implementation in district** **Mentor teachers receive extra training in mentoring, supporting school change,**

• Collaborating with RESAs • Setting up online infrastructure **Selected mentor teachers:** • **Create and record sample public lessons** • **Create exemplars of standards-based lesson plans**	**credit available)** Project Manager: • Works with district administrators throughout the spring to lay groundwork for district-wide Year 2 activities	**facilitating PLCs** Design Team refines middle grades PD materials based on feedback from seed teachers in Spring/Summer 2013

Fall 2013	**Spring 2014**	**Summer 2014**
Seed teachers work in-district: • **Provide training for middle grades colleagues** • **Facilitate site-based learning community** • **Create one public lesson in a content focus area** Mentor teachers offer support: • Help development of PLCs • Teach "live" public lessons • Assist in curriculum alignment	**Seed teachers continue** **Mentor teachers continue** Design Team further refines middle grades PD materials based on feedback from seed teachers in Fall 2013 (Partners and other districts send a new group of seed teachers for the next cycle, Grades 8-9)	RESAs take over middle grades professional development • All materials and sessions for middle grades are available for statewide dissemination • Mentor teachers are prepared to present workshops

D7. Responsible Personnel and Partners

Dr. Jennifer Luebeck Montana State University	Principal Investigator and Project Director *Associate Professor, Dept. of Mathematical Sciences* *Mathematics content and methods instructor, extensive in-service PD experience, mentoring, online learning*
Dr. Georgia Cobbs The University of Montana	Co-PI and Project Co-Director *Professor, Phyllis J. Washington College of Education/Human Sci.* *Mathematics methods instructor, extensive in-service PD experience, Technology Education instructor, on-line learning and blended models, STEM integration, GLOBE program director*
Dr. Brian Lindaman Montana State University	Co-PI and Project Co-Director *Assistant Professor, Dept. of Mathematical Sciences* *Mathematics content and methods instructor, extensive PD experience*
RESA Partners	Nancy Marks, WM-CSPD (Region 5) Bruce Grubbs, RESA4U (Region 4) Marsha Sampson, MRESA3 (Region 3) Gaye Genereaux, MNCESR (Region 2) Kim Stanton, PESA (Region 1)
Lisa Scott	Project Manager *High school teacher, PD consultant, teacher leader and mentor*
Rose Shaw Metrica, Inc.	External Evaluator *Twenty years evaluating federal and state math/science projects*

Project Manager. The success of this project is dependent on developing a statewide network of collaborating schools, expert teachers, administrators, IHE faculty, RESA directors and staff, and OPI

specialists. In addition, the project must track the progress of recruitment, coordinate design of PD materials, and maintain communications. We feel strongly that this requires the full attention of a dedicated Project Manager. We have identified a veteran teacher for this role who not only can meet the obligations described above, but possesses content expertise and professional development experience.

D8. Project Resources

Bozeman School District **Primary Applicant/Fiscal Agent**	Responsibilities: Provide bookkeeping as fiscal agent; liaison to OPI for all accounting; purchase project materials. Administrative services: printing, copying, phone/Internet, supplies related to fiscal and reporting duties.
Partner School Districts	Responsibilities: recruit seed teachers for project participation; provide space, basic supplies, and other facility services for in-district teacher meetings; support learning community; obtain permissions to videotape lessons; provide CRT data for evaluation and reporting.
Montana State University The University of Montana	Responsibilities: expertise in mathematics content, research-based strategies for instruction, professional development design. Educational services: arrange for use of classroom/lab space, computers, Internet access, materials and manipulatives, etc. Administrative services as needed to support faculty activities.
Regional Education Service Areas	Responsibilities: help recruit and select teachers; encourage districts to engage in training and implementation; identify new districts for Year 2 and 3 cycles; coordinate with Technology Specialists to provide technical assistance for online, video, and communication needs; offer

	professional development as each cycle concludes. Educational and administrative services: vary by region
Montana Learning Center Montana Council of Teachers of Mathematics	Responsibilities (MLC): provide educational services and supplies for workshops in January 2013 and June 2013. Responsibilities (MCTM): recommend teachers for project teams; promote project activities and RESA-sponsored events.

D9. Project evaluation. The external evaluator, Dr. Rose Shaw, has extensive experience evaluating mathematics and science professional development at the state and national level. Evaluation is discussed extensively in the Evaluation and Accountability Narrative; please refer to that document for a description of activities and tables demonstrating how evaluation is linked to major project events and to project objectives.

E. Alignment with Montana Common Core Standards.

Teachers' active engagement with the MCCS is referenced throughout the proposal. Our plan for professional development addresses important content spanning several grades, learning progressions within those grade, and all of the Mathematical Practices.

F. Coordination with Other Existing Programs and Initiatives.

STEM: One project leader also serves on Montana's STEM Task Force and will ensure coordination with the STEM Initiative. The Design Team will draw on the expertise of project leaders who facilitate national STEM programs such as "A World in Motion" (http://www.awim.org). In online and face-to-face professional development, seed teachers will learn about and experience integrated STEM instruction through mathematical modeling. **IEFA:** The Design Team will incorporate Essential Understandings from IEFA into workshop sessions. Teachers will be expected to incorporate IEFA

standards as they complete the three-part lesson design sequence within the online learning modules. At least some public lessons will include reflection and design based on the Essential Understandings.

STEM Master Teacher Corps: Our goal of equipping a group of outstanding teachers to mentor the seed teachers is strikingly similar to the President's vision to build a corps of exceptional teachers based on "expertise, leadership, and service." (July 17, 2012 at http://www.whitehouse.gov). The proposed project gives Montana a head start on producing members of the President's STEM corps. **CSIP:** The goals and objectives of this project will support districts' Continuous School Improvement Plans, which must include a description of planned progress toward implementing content standards, as well as a professional development component. The Project Manager will obtain school and district CSIP for partner districts to identify and documents elements of each CSIP that can be addressed in this project.

Other Programs: The Core Planning and Design Teams will coordinate the MCCSM goals of college and career readiness with GEAR UP and other academic preparedness programs, including the Superintendent's "Graduation Matters' initiative.

G. Management Capability.

The project leadership and Program Manager are experienced facilitators and professional development designers. They have an extensive network of support through OPI, universities, STEM organizations, and CCSS experts nationwide. They also embrace the partnership model; a majority of the Year 1 LEA partners were chosen through prior connections or positive partnership experiences. The partnership will employ a Project Manager (PM) to help meet the ambitious professional development goals of the Montana MSP program, to address the multiple objectives of this proposal, and to maintain an effective partnership amongst a complex, statewide representation of LEAs, IHEs, and NPOs. The PM will:

- Ensure continuity, consistency, and quality (e.g., confirming that participants are carefully selected, fully trained, and adequately supported by their districts).
- Coordinate personnel, products, and professional development events to make sure deadlines are met and deliverables meet expectations.
- Regularly communicate with and connect project partners, disseminate news and results, maintain databases, and provide information to the external evaluator.

H. Communication and Interaction.

Communication is critical to the success of this project. Beyond simply logging phone calls and sending emails, the Project Manager will be central to communicating the project's vision to participants, faculty, administrators, and other stakeholders. A common understanding of our goals and objectives must extend from design to delivery to school-based implementation. **Active communication** will include face-to-face meetings and presentations, videoconferences or Webinars, and both group and individual phone conferences. **Email and listservs** will be used for announcements, to coordinate schedules, and to collect data. An electronic **project newsletter** will provide MCCS and STEM information, report on recent events, and highlight activities of the partners. Other electronic media will be added as appropriate (for example, courses and events could be advertised using Web-based tools housed at IHEs or RESAs). One of the project's signature products, the online learning modules, will engage faculty and teachers in collaborative learning, lesson planning, and analysis through a series of self-paced three-week modules offered in spring.

I. Leadership Involvement.

Administrators in each partner district will be directly involved in selecting and supporting their participating seed teachers. District or building leaders must describe how they will support the professional learning community environment as their seed teachers carry out Year 2 dissemination

work. The Project Manager will play a key role in this process, working with each LEA to set the stage for implementation. Leaders will also work with the external evaluator to design a logic model and goals for their district, and to determine if goals have been met.

J. Implementation and Sustainability of Professional Development.

These criteria are fundamental to a successful and worthwhile professional development project, and they are often challenging to guarantee. However, in the proposed project these are not merely promises – they are the *product* of our efforts. **Implementing** Montana's Common Core is the main objective of our online and face-to-face professional development and motivates the design of our *embedded*, *school-based* approach. Seed teachers will learn strategies for sharing information, modeling and analyzing standards-based instruction, and facilitating learning communities. **Technology** in many forms will contribute to our ability to record, edit, and archive these materials for public use. A technology partnership will involve RESAs, LEAs, and IHEs in providing tools and expertise to create, improve, and distribute materials using video recordings, screen capture software, Powerpoint presentations, and course delivery platforms like Desire2Learn and Moodle. **Sustainable** products include a series of *online learning modules* that can be offered for college credit; *workshop and summer academy sessions* that can be used separately or in combination; and *public lessons with teacher reflections* that can be archived and accessed electronically. Finally, we hope to **extend and expand** by seeking federal funding for a much wider-scale exploration of the most successful aspects of this project.

A bibliography of citations in this proposal is available upon request.

Evaluation and Accountability Plan

The overarching goal of the evaluation is to carefully assess the effectiveness of this project in the following areas: improving student achievement and teacher content knowledge of *Montana's Common Core Standards for Mathematics*; designing and delivering high-quality learning modules; directly engaging the five RESAs as active partners; and supporting and interacting with the Montana STEM Education Initiative. The evaluation of this project will also contribute to OPI's statewide evaluation of MSP effectiveness.

The proposed project will use both an internal evaluation team (Project Manager with support from the project leadership team) and an external evaluator (Dr. Rose Shaw). The internal evaluator will maintain accurate and timely records of participation by teachers, administrators, schools, and districts and will communicate this information to the external evaluator. This evaluation will utilize participatory evaluation (Cousins & Whitmore, 1998), a partnership approach to evaluation, which allows for partners to play active roles in the evaluation process by identifying relevant questions, planning performance measures that include district-specific data (e.g., district-administered standardized tests) and using evaluation findings to strengthen project implementation and monitor progress toward meeting short-term, medium-term and long-term outcomes.

Logic Models. In the spirit of participatory evaluation the external evaluator will work with LEAs on the development of their logic models (Cooksy, Gill & Kelly, 2001) which are well-established tools for establishing critical measures of performance. *Logic models* will be used to facilitate accountability and evaluation and in so doing strengthen project implementation across and within the partnering LEAs. This approach will actively engage partnering LEAs in the evaluation process. Development of these performance-based, district-specific logic models will be aligned with expected outcomes and measurement indicators for the project in accordance with federal and state guidelines. The *project-level logic model* will embed the LEA-specific plans for participating in the partnership, and development at the project level will provide an opportunity to incorporate student assessment data used by each of the LEAs into the evaluation as a supplement to state CRT scores. The structure of the logic models is displayed below.

SITUATION	►	INPUTS	►	OUTPUTS		►	OUTCOMES		
		What we invest		What we do	Who we reach		Short term	Medium term	Long term
		• Time • Partners • Money • Facilities		• Workshops • Online PD • Lessons • PLCs	• Teachers • Principals • Students		Change in: • Knowledge • Skills • Attitude • Motivation • Awareness	Change in: • Behaviors • Practices	Improved: • State math CRT scores

The external evaluator will collaborate with the leadership in each partner district and RESA to develop their logic models during the first three months following the project's start date. After the logic models are developed, the internal evaluator will facilitate their review by the project leadership team and will communicate review findings to the external evaluator. The external evaluator will then work with the project leadership team on finalization of the model, corresponding time-based work plans, outcome performance measures and specific performance expectations. The final product will integrate leadership and management components with the internal and external evaluations in a comprehensive, effective, and efficient implementation and accountability system.

All **qualitative and quantitative evaluation data** will be analyzed by the external evaluator and reported in short-loop telephone conversations as well as quarterly reports. Surveys, questionnaires and interview protocol development will be facilitated by the external evaluator in collaboration with the internal evaluator, professional development providers and the project's leadership team. Annual external evaluation interviews of partner stakeholders will help assess project strengths, weaknesses, obstacles, and solutions. For example, selected principals will be interviewed about how the seed teachers' training and subsequent work with peers has affected their schools, teachers, and students.

A **continuous loop of evaluation inquiry and feedback** to the project leadership team will help make sure that performance measures described in the logic models are met. The evaluation will be embedded in the project and there will be evidence that project leaders use evaluation findings to improve and refine activities and processes. The internal evaluator will participate in project leadership planning meetings and will provide

the external evaluator with meeting summaries and minutes along with a list of action items, responsible parties and action item status. The internal evaluator will also collect paper-and-pencil forms from participants. Any electronic evaluation forms will be posted on the external evaluator's website.

Formative evaluation will utilize a combination of qualitative and quantitative measurements and judgments (e.g. workshop evaluations, surveys, observation, interviews) during project implementation to improve the quality of performance, processes, outputs and outcomes. Formative evaluation will assess the project's progress toward meeting its annual goals and work plan and will evaluate unexpected developments as well as the project's strengths and weaknesses. Formative findings will include anecdotal evidence gathered through internal evaluator and will be used to continuously modify the project to improve effectiveness. In addition, the external evaluator will include data on the effectiveness of the partnership and recommendations in an annual report to OPI.

S**ummative evaluation** judging the worth of the project will focus on the *outcomes* (Bhola, 1990) and will determine the overall project effectiveness and attainment of outcomes as assessed by performance measures. Some of the formative evaluation findings (short-term outcomes, effective strategies, strengths and weaknesses of materials and activities, lessons learned) will inform the summative evaluation. Key summative evaluation components include student and teacher content assessment results, Guskey model pooled results, portfolios, and interviews.

Gains in teacher knowledge. Potential gains in seed and mentor teachers' content understanding in this project are based on groups of teachers that are not randomly selected, so an experimental approach is not feasible. Instead, a *quasi-experimental non-matched field research design* was selected with the flexibility needed for the variations that occur in participation of teachers in real-world settings: the Recurrent Institutional Cycle Design (Campbell 1957, 1963; Campbell & McCormack 1957; Campbell & Stanley, 1963). This design combines the longitudinal and cross-sectional approaches and is used in studies where the treatments recur on a cyclical schedule where one group is finishing and other group is beginning. As shown below, this design allows for cross-sectional data to be collected from our Year 1, Year 2 and Year 3 teachers and longitudinal data

from each group over time (X is intervention, O_0 is the pretest, O_1 is the posttest). Note that the Year 2 group (pretest) is the control group for Year 1 group (posttest), etc.

Yr 1 Teachers	O_0	X	O_1					
Yr 2 Teachers			O_0	X	O_1			
Yr 3 Teachers					O_0	X	O_1

Significant gains by each individual teacher will be measured by a posttest gain greater than one-third of the pretest standard deviation (SD): Post > Pre + (1/3)*SD_{PRE} unless an alternative to this is recommended by OPI.

The project leadership team will work with the evaluators in developing the pre/post teacher content assessments using a set of items drawn from reliable sources such as the *Educational Testing Service (ETS) PRAXIS* that are aligned with the professional development content. In order to ensure high completion rates these assessments will be administered by the internal evaluator before and after teachers' participation in the project's annual professional development. The internal evaluator will send the completed assessments to the external evaluator for processing; findings will be reported to the Core Planning Team as well as the project leadership. Findings will be supplemented by teacher self-reports and potentially by other qualitative date such as observations during professional development and measures of change in teacher attitude and belief.

Evaluation of partnership. At the end of each of the three project years, the external evaluator will administer the *Partnership Self-Assessment Tool* (adapted from the Partnership Assessment Tool, Center for the Advancement of Collaborative Strategies in Health) which the external evaluator has used in other collaborative partnership projects to assess partnership leadership, administration and management, decision making, participation benefits, participation drawbacks, and participant satisfaction. External evaluation of partnership intra- and inter-connectivity (network analysis) will be assessed by collecting information within three major groups (the MSP, the STEM Initiative and the RESA network) with regard to their level of linkage (Not Linked, Communication, Cooperation, Coordination, Collaboration and Fully Linked) and the level of interaction (not at all, not much, some, or a great deal). Data will be gathered prior to each individual's participation in the project

and at the end of each school year. Findings regarding the effectiveness of the partnership collaboration will be summarized yearly and include external evaluator recommendations.

Administrator participation will be documented and reported by the internal evaluator and will be reported to the external evaluator at baseline, mid-year and at the end of each year. In addition to assessing the partnership and connectivity (above) the external evaluator will interview principals about the impact of participating in the project's delivered professional development experiences using a protocol that will attend to Guskey's five levels. Principals will collect information about student performance (Level Five) by walk-throughs and other classroom visits. Teachers will maintain portfolios of reflections on instruction and content aligned with the project and their observation of the effect on student learning in their classrooms. District and state assessment data will be used to track changes in levels of group performance on standardized mathematics assessments of students before and after participation in the project.

Results of the external evaluation will be reported to the project leadership team, which will be responsible for disseminating the results to the partnership. Formative and summative data will be provided according to the following timeline and methods:

- December 2012 (and each fall): **RESAs and LEAs** will be invited to review an outline of the professional development framework. Content and sequencing of the three-part PD can be modified based on feedback before it is delivered in the spring. (Formative)
- Spring 2013 (and each spring): **Project leadership and design team** will review data from participants and instructors following each phase of the PD (workshop, online modules, academy) to consider modifications for the next phase. (Formative)
- Summer 2013 (and each summer): **RESA staff** will be given the professional development materials for dissemination, along with a data-based report summarizing their most effective use.
- Summer 2013 (and each summer). Members of the **Core Planning Team** will receive written external evaluator reports on gains in teacher content knowledge of MCCS as well as the effectiveness of the partnership.

- Ongoing: **Project leadership and Core Planning Team** will have access to formative and anecdotal data regarding the design process, professional development events, and participants' in-school activities in a continuous feedback loop. Project newsletters may be used for this purpose.

Finally, the Evaluation and Accountability Plan will comply with all State and Federal reporting requirements including submission of local reports and the Annual Performance Report.

Guskey's five levels of evaluation will be incorporated in evaluating the professional development (PD) model as outlined in the following table.

Evaluation Level	**Sample Topics for Questions**	**Measure**	**What is Measured?**	**Use of Information**
Level 1-Reactions	Usefulness of content; quality of delivery/processes	Surveys at end of sessions and end of workshop	Satisfaction with experience	Improve PD design and delivery
Level 2-Learning	Acquisition of knowledge and skills	ETS hard copy pre/post; teacher portfolios	New knowledge and skills of participants	Improve practice; demonstrate impact of PD
Level 3-Change	Partnership effectiveness; evidence of data-driven leadership	Structured 5-level aligned interviews, action items, documents	Partnership support of PD, material development, climate	Strengthen current and inform future efforts; improve leadership
Level 4-Use	Application of new skills & knowledge by participants	Participant portfolios, principal observations	Degree and quality of implementation	Document and improve; document PD impact
Level 5-Outcomes	Impact on student achievement	State testing scores, LEA standardized tests; school records	Student mathematics learning outcomes	Use valid and reliable instruments to assess PD impact

Progress toward meeting objectives will be measured as summarized in the following table. Some objectives involve creation of products where progress is self-evident.

Objective	**Assessment of Progress**
1. **Common Core Content Knowledge:** Teachers will increase their understanding of mathematics relevant to *algebraic thinking* and *fractions, ratio, and proportion*.	Content test Teacher portfolios
2. **Mathematical Practices and STEM:** Teachers will experience and demonstrate how mathematical practices must be embedded in teaching and learning.	Teacher-designed lessons Public lesson videos
3. **Demonstration and School-Based Learning:** Teachers will be prepared to share their knowledge with colleagues in a learning community setting in their schools.	Teacher portfolios Administrator interviews
4. **Implementation and Professional Development:** The	Self-evident

project will produce a *collection of learning modules* for use in face-to-face and online instruction.	
5.**Mentoring and Facilitation:** The project will produce *teacher leaders* (a) deeply knowledgeable (b) qualified to demonstrate (c) prepared to lead professional development.	Content test RESA/LEA anecdotal
6.Modeling and Metacognition: The project will produce a series of *videorecorded "public lessons"* for use by individuals and in professional development.	Self-evident

External evaluator Rose Shaw holds a Ph.D. in Applied Statistics and has over 20 years experience evaluating more than 75 projects in 16 states. She has extensive expertise assessing and evaluating demonstrable impacts and achievements both qualitatively and quantitatively. She has evaluated projects representing a wide variety of areas funded by NSF (including GK-12, DRK-12, and MSP) and U.S. Department of Education (including Title II/III/VII, Upward Bound, and FIPSE)..

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MCCSM Project (Working Title)			**335,178**		**Title II MSP Proposal 2012-13**
Budget and Narrative					
			Year 1	**Category**	
Direct Cost requested for Partner			**Estimates**	**Totals**	**Justification for Budget**
1. Salaries and Wages (Professional and Clerical)					
Project Management					
(Luebeck)	PI/Project Director		13,000		Manage project, supervise staff and communication, coordinate budget, 4-7 specialist
(Cobbs)	Co-PI/Leadership Team		9,000		Manage project, coordinate technology and STEM, K-3 specialist
(Lindaman)	Co-PI/Leadership Team		9,000		Manage project, coordinate evaluation, 8-12 specialist
(Scott)	Project M		42,194		Project Management and professional development
Total Salaries and Wages			**73,194**	**73,194**	
2. Employee Benefits					
Total Employee Benefits			**10,549**	**10,549**	*Salaries and benefits are 25% of total*
3. Travel in State					
Core Planning Team - October 2012, MLC					
	Lodging/Meals		1,245		10 rooms @ $90 x 1 night + 15 per diem
	Mileage		2,200		10 cars @ 400 miles x .55
Design Team - Fall 2012, Missoula					
	Lodging/Meals		680		5 rooms @ $90 x 1 night + 10 per diem
	Mileage		1,100		5 cars @ 400 miles x .55
Launch Workshop - January 2013, Bozeman					
	Lodging/Meals		6,110		25 rooms @ $90 x 2 nights + 70 per diem
	Mileage		5,500		25 cars @ 400 miles x .55
Summer Academy - June 2013, MLC					
	Meals/Room Rental		27,360		70 teachers + 6 staff @ $90 x 4 days
	Mileage		7,700		35 cars @ 400 miles x .55
	Extra day for mentor teachers		1,260		10 teachers + 4 staff @ $90 x 1 day
Project Manager site visits					
	Meals		230		10 per diem
	Mileage		2,200		10 trips @ 400 miles x .55
Leadership Team site visits					
	Meals		460		20 per diem
	Mileage		4,400		20 trips @ 400 miles x .55
	State STEM & MCCS Meetings		2,000		Required collaboration with Montana initiatives
Total Travel in State			**62,445**	**62,445**	
4. Travel out of State					
	Regional MSP & National Meetings		6,000		Required interaction with MSP colleagues and researchers
Total Travel out of State			**6,000**	**6,000**	

5. Materials and Supplies					
	Participant workshop materials		5,600		70 participants @ $80 per person
	Presenter materials and resources		1,300		7 days @ $100 per day + 6 modules @ $100 per module
	Software and electronics		2,000		Screen capture, Web communication, and other software
Total Materials and Supplies			**8,900**	**8,900**	
6. Consultants and Contracts					
	Core Planning Team		4,000		10 team members @ $400 ($200 meeting, $200 followup)
(Nelson)	PD consultant		4,000		Design, instruct, facilitate PLC development
(Erickson)	Design consultant (IHE)		2,000		2 IHE faculty for mathematics content
	Engineer/scientist consultants		1,600		4 faculty @ $400 per day
	PD instruction (IHE)		2,000		4 days @ $500 per day
	Guest speakers		2,000		4 guest speakers @ $500 per day
	Technical assistance		5,000		100 hours $50/hour
	RESA support		10,000		Contract work with RESA directors
(Shaw)	External evaluator		19,759		5% of project contracted fee + $3000 expenses)
(Diemert)	Internal Evaluator		12,287		Doctoral student as graduate research assistant
Total Consultants and Contracts			**62,646**	**62,646**	
7. Teacher Stipends					
	Design team		8,000		6 teachers @ $1000/teacher + 2 coordinators @ $1000
	PD instruction		3,000		6 days @ $500 per day
	Seed teachers		54,000		60 teachers @ $900 (training - more in Year 2)
	Mentor teachers		15,000		10 teachers x $1500 (training and demonstration - more in Year 2)
	Substitute pay - Launch Workshop		5,250		70 days @ $75/day
	Substitute pay - Design and Core		1,500		20 days @ $75/day
Total Teacher Stipends			**86,750**	**86,750**	
8. Equipment (Purchase)					
Total Equipment			**0**	**0**	
9. Other (Equipment Rental, Printing, etc.)					
	Equipment (hardware)		4,000		Webcams, LiveScribe, laptop, printer, server space
	Printing and copies		1,500		$150/month @ 10 months
	Office supplies		2,000		$200/month @ 10 months
Total Other			**7,500**	**7,500**	
Indirect Costs (if appropriate)			**17,195**	**17,195**	
Total Budget:	*$0 remaining of*	*$335,178*	**335,178**	**335,178**	

MCCSM Project (Working Title)
Budget and Narrative

1. Salaries and Wages (Professional and Clerical)

- The salaries for Luebeck, Cobbs, and Lindaman represent replacement salary for one month summer pay plus approximately 25% benefits overhead imposed by both MSU and UM. Each person will have a unique job description addressing oversight of evaluation, budget, technology/STEM, and research. Components can be shifted among project leaders and salaries adjusted accordingly.
- Luebeck receives additional salary for proposal preparation, reporting, and project oversight.
- MSU and UM faculty salary will be paid as additional salary via a subaward to the IHEs.
- The salary for Scott represents replacement salary for 0.6 FTE. Scott will work 2/3 to 3/4 time for the project throughout the year.

2. Employee Benefits

- Benefits for Scott are calculated at the rate imposed by Billings Public Schools.
- Scott salary and benefits will be paid directly to BPS.

3. Travel in State

- Travel expenses are organized by event. Estimations assume an "average" trip of 400 miles; carpooling by at least some participants; and sharing rooms except for Core Planning Team.
- A pool of travel money is set aside for site visits by Project Manager and project leadership.
- Funds are adequate to allow a significant proportion of project staff and teacher participants to attend statewide STEM and MCCS events.

4. Travel out of State

- Funds are adequate to allow up to 4 people to attend MSP regional meetings with the possibility of additional trips to national meetings such as NCSM and AMTE.

5. Materials and Supplies

- A rate of $80 per participant will fund workshop materials.
- An additional budget allows presenters to purchase supplies for specific PD activities.
- Software will be needed to develop the public lesson component of PD as well as the online learning modules.

6. Consultants and Contracts

- Core Planning Team members receive a $400 stipend as $100 per day for 2 days of meeting and $200 more for active participation and providing feedback through the design phase
- Because much of Year 1 is focused on design and development, we have provided for many avenues of potential contribution by faculty and consultants with specific expertise.
- Stipends for PD instructors is divided between consultants and teachers, and covers the Launch Workshop and the Summer Academy.
- Instruction for the online learning modules will be covered by tuition fees.

- A generous budget has been provided for technology assistance from the RESAs as well as an open budget for employing RESA support in other ways.
- The external evaluator negotiated a 5% rate in exchange for assistance from an internal evaluator. Another $3000 has been added to cover unexpected costs (e.g. extra trips).
- The internal evaluator stipend represents replacement cost for hiring an MSU doctoral student who would otherwise work as a teaching assistant.

7. Teacher Stipends

- Design team members receive $1000 for their work throughout the year. Their products will be used in the Launch Workshop, as online learning modules, and in the Summer Academy.
- Seed teachers receive $900 representing $75/day for 6 days of PD, $300 for completing online modules, and $150 to cover IHE tuition for online modules.
- Mentor teachers receive an additional $500 for extra training and for creating public lessons
- Substitute pay covers all seed and mentor teachers for one day of Launch Workshop as well as 20 days for members of the Core Planning and Design teams.

8. Equipment (Purchase)

- Not applicable

9. Other (Equipment Rental, Printing, etc.)

- A generous budget has been provided for equipment to support creation of the public lessons and delivery of the online learning modules. Some of this funding may apply to the RESAs.
- Printing, copying, office supplies, etc. will be used to produce project materials and to reimburse the Project Manager and RESA staff.

Indirect Costs (if appropriate)

- The Bozeman School District has a negotiated rate of 5.13% for OPI contracts. The universities receiving subawards for faculty salaries have agreed to honor this rate as well.

Appendix A - Cover Sheet

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

MONTANA MATHEMATICS AND SCIENCE PARTNERSHIP (MSP) PROGRAM APPLICATION

Applying Institution or Organization: Bozeman Public Schools

Program Title: MCCSM (working title)

Program Director

Name: Jennifer Luebeck

Title: Associate Professor, Mathematics Education

Address: Mathematical Sciences, 2-214 Wilson Hall, Montana State University

Bozeman, MT ZIP Code: 59717

Telephone: 406-994-5341 **Fax:** 406-994-1789

E-Mail: luebeck@math.montana.edu

Amount of MSP Funds Requested: $ 335,178.00

Number of Teachers to be Served Directly: 60 to 80 served directly (100 to 150 more served indirectly)

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.

Steven D. Johnson
Typed or Printed Name of Authorized Official Grants Officer or Superintendent of Fiscal Agent

Deputy Superintendent Operations
Title

Signature of Authorized Official

8-31-12
Date

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Montana State University

Contact Name/Title: Ken Bowers, Dept. Chair

Contact Mailing Address: Mathematical Sciences – 2-214 Wilson Hall
Montana State University
Bozeman, MT 59717

Telephone: (406) 994-3601

Fax: (406) 994-1789

E-Mail: bowers@math.montana.edu

Type of Institution/Organization: Higher Education

Partner School District Demographics (If Applicable):

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: The University of Montana

Contact Name/Title: Roberta D. Evans, Dean

Contact Mailing Address:

Phyllis J. Washington College of Education and Human Sciences

32 Campus Drive, Missoula, MT 59812

Telephone: (406) 243-6052

Fax: (406) 243-4908

E-Mail: georgia.cobbs@mso.umt.edu

Type of Institution/Organization: University

Partner School District Demographics (If Applicable):

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Montana Learning Center

Contact Name/Title: Olivia LeTellier, Executive Director

Contact Mailing Address: 7653 Canyon Ferry Road, Helena, MT 59602

Telephone: 406-475-3638

Fax: 406-475-3871

E-Mail: jletellier@montanalearning.org

Type of Institution/Organization: Non-Profit Organization

Partner School District Demographics (If Applicable):

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Montana Council of Teachers of Mathematics

Contact Name/Title: Angel Zickefoose, President

Contact Mailing Address: Billings, MT

Telephone: NA – Web site www.montanamath.org

Fax: NA

E-Mail: zickefoosea@billingsschools.org

Type of Institution/Organization: Non-Project Educational

Partner School District Demographics (If Applicable):

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Anaconda School District

Contact Name/Title: Dr. Tom Darnell; Superintendent

Contact Mailing Address: 1410 West Park Street, Anaconda, MT 59711

Telephone: 406-563-6361, ext 1602

Fax: 406-563-7763

E-Mail: darnellt@sd10.org

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

Appendix D – Partnership Identification Form

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Arlee School District

Contact Name/Title: George Linthicum, Superintendent

Contact Mailing Address: 72220 Fyant St. Arlee, MT 59821

Telephone: 406-726-3216 ext 2100

Fax: 406-726-3949

E-Mail: linthicum@arlee.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Box Elder Public Schools

Contact Name/Title: Robert A. Heppner, Superintendent

Contact Mailing Address: District No. 13-G, Hill County, Box Elder, MT 59521

Telephone: (406) 352-4195

Fax: (406) 352-3830

E-Mail: superhepp@yahoo.com

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Bozeman Public Schools

Contact Name/Title: Marilyn King, Assistant Superintendent

Contact Mailing Address: P.O. Box 520, Bozeman, MT 59771-0520

Telephone: (406) 522-6003

Fax: (406) 522-6091

E-Mail: marilyn.king@bsd7.org

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Charlo School District 7J

Contact Name/Title: Tom J Peck, Superintendent

Contact Mailing Address:

404 1st Avenue West, Box 10, Charlo, MT 59824

Telephone: 406-644-2206

Fax: 406-644-2400

E-Mail: tpeck@charloschools.com

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

Appendix D – Partnership Identification Form

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Conrad Public Schools

Contact Name/Title: Craig Barringer, Superintendent

Contact Mailing Address: 215 South Maryland Street, Conrad, MT 59425-2017

Telephone: (406) 278-5521

Fax: (406) 278-3630

E-Mail: obarringer@conradschools.org

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: East Glacier Park Grade School

Contact Name/Title: Karlona Sheppard, Principal

Contact Mailing Address:

204 Washington St/ PO Box 150, East Glacier Park, MT 59434

Telephone: (406) 226-5543

Fax: (406) 226-4269

E-Mail: eastglacierschool@yahoo.com

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Hot Springs School District

Contact Name/Title: Kevin Meredith, Superintendent

Contact Mailing Address: P.O. Box 1005, 301 Broadway, Hot Springs, MT 59845

Telephone: 406-741-2962

Fax: 406-741-3287

E-Mail: kmeredith@hotsprings.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Kalispell Public Schools

Contact Name/Title: Darlene Schottle, Superintendent

Contact Mailing Address: 233 1st Ave. East, Kalispell, MT 59901

Telephone: 406-751-3400

Fax: 406-751-3416

E-Mail: schottled@sd5.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Lewistown Public Schools

Contact Name/Title: Scott A. Dubbs, Curriculum Director

Contact Mailing Address: 215 7th Avenue South, Lewistown, MT 59457

Telephone: (406) 535-8777 x 133

Fax: (406) 535-3835

E-Mail: sdubbs@lewistown.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Miles City Unified School District

Contact Name/Title: Laurie Hoffman, Principal

Contact Mailing Address:

Garfield Elementary School, 1015 Milwaukee, Miles City, MT 59301

Telephone: (406) 234-4311

Fax: (406) 234-4310

E-Mail: lhuffman@milescity.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Target Range School District #23

Contact Name/Title: Luke Laslovich, Principal

Contact Mailing Address: 4095 South Avenue West, Missoula, MT 59804

Telephone: (406) 549-9239

Fax: (406) 728-8841

E-Mail: lazlovich@target.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

Appendix D – Partnership Identification Form

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

PARTNERSHIP IDENTIFICATION FORM

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

PARTNER INSTITUTION: Terry School District

Contact Name/Title: Casey Klasna; Superintendent

Contact Mailing Address: 215 E. Park, Terry, MT 59349

Telephone: 406-635-5533

Fax: 406-635-5705

E-Mail: caseyk@terry.k12.mt.us

Type of Institution/Organization: School District

Partner School District Demographics (If Applicable):

- Partnership includes mathematics teachers in grades 4-7

Appendix E – Budget Forms

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

Budget
Partnership Funding Request

Program Title: MCCSM (Working Title)

Direct Cost Requested for Partner	TOTAL
1. Salaries & Wages (Professional and Clerical)	$73,194
2. Employee Benefits	$10,549
3. Travel in State	$62,445
4. Travel Out of State	$6,000
5. Materials and Supplies	$8,900
6. Consultants and Contracts	$62,646
7. Teacher Stipends	$86,750
8. Equipment (Purchase)	$0
9. Other (Equipment Rental, Printing, etc.)	$7,500
Indirect Costs* (if appropriate)	$17,195
Total Budget	$335,178
OPI Use Only: Approved By/Date	

*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.

Partner Funding Request

Appendix E – SPECIAL Budget Form

This form did not appear in the packet, but we added it to represent how the Bozeman Public Schools (fiscal agent) will offer subawards to MSU and UM to confirm their partnership and provide salary to their faculty and students.

Name of Partner Organization: Montana State University

Direct Cost Requested for Partner	*TOTAL*
1. Salaries & Wages (Professional and Clerical) a. Luebeck $10,400 b. Lindaman $7,200 c. Diemert $10,000	$27,600
2. Employee Benefits	$4400
3. Doctoral Student Tuition/Benefits	$2000
4. Indirect Costs (passed through BPS)	$1745
Total Funding to Partner from Grant	$35,745

Name of Partner Organization: The University of Montana

Direct Cost Requested for Partner	*TOTAL*
1. Salaries & Wages (Professional and Clerical) a. Cobbs $9000	$7,200
2. Employee Benefits	$1,800
3. Indirect Costs (passed through BPS)	$462
Total Funding to Partner from Grant	$9,462

MCCSM Project (Working Title)		**335,178**		**Title II MSP Proposal 2012-13**
Budget and Narrative				
		Year 1	**Category**	
Direct Cost requested for Partner		**Estimates**	**Totals**	**Justification for Budget**
1. Salaries and Wages (Professional and Clerical)				
Project Management				
(Luebeck)	PI/Project Director	13,000		Manage project, supervise staff and communication, coordinate budget, 4-7 specialist
(Cobbs)	Co-PI/Leadership Team	9,000		Manage project, coordinate technology and STEM, K-3 specialist
(Lindaman)	Co-PI/Leadership Team	9,000		Manage project, coordinate evaluation, 8-12 specialist
(Scott)	Project	42,194		Project Management and professional development
Total Salaries and Wages		**73,194**	**73,194**	
2. Employee Benefits				
Total Employee Benefits		**10,549**	**10,549**	*Salaries and benefits are 25% of total*
3. Travel in State				
Core Planning Team - October 2012, MLC				
	Lodging/Meals	1,245		10 rooms @ $90 x 1 night + 15 per diem
	Mileage	2,200		10 cars @ 400 miles x .55
Design Team - Fall 2012, Missoula				
	Lodging/Meals	680		5 rooms @ $90 x 1 night + 10 per diem
	Mileage	1,100		5 cars @ 400 miles x .55
Launch Workshop - January 2013, Bozeman				
	Lodging/Meals	6,110		25 rooms @ $90 x 2 nights + 70 per diem
	Mileage	5,500		25 cars @ 400 miles x .55
Summer Academy - June 2013, MLC				
	Meals/Room Rental	27,360		70 teachers + 6 staff @ $90 x 4 days
	Mileage	7,700		35 cars @ 400 miles x .55
	Extra day for mentor teachers	1,260		10 teachers + 4 staff @ $90 x 1 day
Project Manager site visits				
	Meals	230		10 per diem
	Mileage	2,200		10 trips @ 400 miles x .55
Leadership Team site visits				
	Meals	460		20 per diem
	Mileage	4,400		20 trips @ 400 miles x .55
	State STEM & MCCS Meetings	2,000		Required collaboration with Montana initiatives
Total Travel in State		**62,445**	**62,445**	
4. Travel out of State				
	Regional MSP & National Meetings	6,000		Required interaction with MSP colleagues and researchers
Total Travel out of State		**6,000**	**6,000**	

5. Materials and Supplies				
	Participant workshop materials	5,600		70 participants @ $80 per person
	Presenter materials and resources	1,300		7 days @ $100 per day + 6 modules @ $100 per module
	Software and electronics	2,000		Screen capture, Web communication, and other software
Total Materials and Supplies		**8,900**	**8,900**	
6. Consultants and Contracts				
	Core Planning Team	4,000		10 team members @ $400 ($200 meeting, $200 followup)
(Nelson)	PD consultant	4,000		Design, instruct, facilitate PLC development
(Erickson)	Design consultant (IHE)	2,000		2 IHE faculty for mathematics content
	Engineer/scientist consultants	1,600		4 faculty @ $400 per day
	PD instruction (IHE)	2,000		4 days @ $500 per day
	Guest speakers	2,000		4 guest speakers @ $500 per day
	Technical assistance	5,000		100 hours $50/hour
	RESA support	10,000		Contract work with RESA directors
(Shaw)	External evaluator	19,759		5% of project contracted fee + $3000 expenses)
(Diemert)	Internal Evaluator	12,287		Doctoral student as graduate research assistant
Total Consultants and Contracts		**62,646**	**62,646**	
7. Teacher Stipends				
	Design team	8,000		6 teachers @ $1000/teacher + 2 coordinators @ $1000
	PD instruction	3,000		6 days @ $500 per day
	Seed teachers	54,000		60 teachers @ $900 (training - more in Year 2)
	Mentor teachers	15,000		10 teachers x $1500 (training and demonstration - more in Year 2)
	Substitute pay - Launch Workshop	5,250		70 days @ $75/day
	Substitute pay - Design and Core	1,500		20 days @ $75/day
Total Teacher Stipends		**86,750**	**86,750**	
8. Equipment (Purchase)				
Total Equipment		**0**	**0**	
9. Other (Equipment Rental, Printing, etc.)				
	Equipment (hardware)	4,000		Webcams, LiveScribe, laptop, printer, server space
	Printing and copies	1,500		$150/month @ 10 months
	Office supplies	2,000		$200/month @ 10 months
Total Other		**7,500**	**7,500**	
Indirect Costs (if appropriate)		**17,195**	**17,195**	
Total Budget:	*$0 remaining of $335,178*	**335,178**	**335,178**	

MCCSM Project (Working Title)
Budget and Narrative

1. Salaries and Wages (Professional and Clerical)

- The salaries for Luebeck, Cobbs, and Lindaman represent replacement salary for one month summer pay plus approximately 25% benefits overhead imposed by both MSU and UM. Each person will have a unique job description addressing oversight of evaluation, budget, technology/STEM, and research. Components can be shifted among project leaders and salaries adjusted accordingly.
- Luebeck receives additional salary for proposal preparation, reporting, and project oversight.
- MSU and UM faculty salary will be paid as additional salary via a subaward to the IHEs.
- The salary for Scott represents replacement salary for 0.6 FTE. Scott will work 2/3 to 3/4 time for the project throughout the year.

2. Employee Benefits

- Benefits for Scott are calculated at the rate imposed by Billings Public Schools.
- Scott salary and benefits will be paid directly to BPS.

3. Travel in State

- Travel expenses are organized by event. Estimations assume an "average" trip of 400 miles; carpooling by at least some participants; and sharing rooms except for Core Planning Team.
- A pool of travel money is set aside for site visits by Project Manager and project leadership.
- Funds are adequate to allow a significant proportion of project staff and teacher participants to attend statewide STEM and MCCS events.

4. Travel out of State

- Funds are adequate to allow up to 4 people to attend MSP regional meetings with the possibility of additional trips to national meetings such as NCSM and AMTE.

5. Materials and Supplies

- A rate of $80 per participant will fund workshop materials.
- An additional budget allows presenters to purchase supplies for specific PD activities.
- Software will be needed to develop the public lesson component of PD as well as the online learning modules.

6. Consultants and Contracts

- Core Planning Team members receive a $400 stipend as $100 per day for 2 days of meeting and $200 more for active participation and providing feedback through the design phase
- Because much of Year 1 is focused on design and development, we have provided for many avenues of potential contribution by faculty and consultants with specific expertise.
- Stipends for PD instructors is divided between consultants and teachers, and covers the Launch Workshop and the Summer Academy.
- Instruction for the online learning modules will be covered by tuition fees.

- A generous budget has been provided for technology assistance from the RESAs as well as an open budget for employing RESA support in other ways.
- The external evaluator negotiated a 5% rate in exchange for assistance from an internal evaluator. Another $3000 has been added to cover unexpected costs (e.g. extra trips).
- The internal evaluator stipend represents replacement cost for hiring an MSU doctoral student who would otherwise work as a teaching assistant.

7. Teacher Stipends

- Design team members receive $1000 for their work throughout the year. Their products will be used in the Launch Workshop, as online learning modules, and in the Summer Academy.
- Seed teachers receive $900 representing $75/day for 6 days of PD, $300 for completing online modules, and $150 to cover IHE tuition for online modules.
- Mentor teachers receive an additional $500 for extra training and for creating public lessons
- Substitute pay covers all seed and mentor teachers for one day of Launch Workshop as well as 20 days for members of the Core Planning and Design teams.

8. Equipment (Purchase)

- Not applicable

9. Other (Equipment Rental, Printing, etc.)

- A generous budget has been provided for equipment to support creation of the public lessons and delivery of the online learning modules. Some of this funding may apply to the RESAs.
- Printing, copying, office supplies, etc. will be used to produce project materials and to reimburse the Project Manager and RESA staff.

Indirect Costs (if appropriate)

- The Bozeman School District has a negotiated rate of 5.13% for OPI contracts. The universities receiving subawards for faculty salaries have agreed to honor this rate as well.

Bozeman Public Schools
404 West Main, P.O. Box 520
Bozeman, MT 59771-0520
www.bsd7.org

Robert J. Watson, Ed.D.
Superintendent

Phone: (406) 522-6001
Fax: (406) 522-6065
robert.watson@bsd7.org

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Letter also included with other LEAs.

Dear Dr. Luebeck:

On behalf of Bozeman School District #7, we are pleased to submit this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We join a high-functioning partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. We have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students. In fact, Bozeman School District #7 will serve as Primary Applicant and Fiscal Agent for this proposal and provide financial and accounting services for the project. *

We understand that our partnership commitment includes the following:

- Selection of a critical mass of math teacher participants (based on district size) – Fall 2012
- Supporting these seed teachers as they complete professional development – Spring 2013
- Providing opportunity to build a professional learning community where the seed teachers use their training with other math teachers in grades 4-7 and beyond – 2013-2014

Our District has been working with the Montana Common Core Standards (MT CCSS). We have a well-thought-out implementation plan. In fact, we are fully implementing the ELA MT CCSS and the eight standards of Mathematical Practices during the 2012-13 school year. Full implementation in both ELA and Mathematics is planned for 2013-14.

The activities you propose align well with our Long Range Strategic Plan. As part of our Long Range Strategic Plan, we will focus heavily on the use of best practice instructional strategies to prepare all students to be college and career ready. We have strategic objectives and action plans that focus on personalizing learning, so that every student experiences growth towards achieving and exceeding proficiency in the MT CCSS; utilizing of content area standards, including focused attention using Quadrant D instructional practices, UBD planning procedures, standards-based assessment, and fair grading practices as we implement the CCSS; and preparing all students to be College and Career Ready. We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching.

We are especially excited about the spectrum and the scope of professional development for our teachers:
...the focus on the integration of science, technology, engineering and mathematics (STEM);
...the inclusion of "mentor teachers" to work with our own teachers who go through the project;
...the idea that we will have "embedded teachers" in our own district trained to share knowledge with their peers; and
...the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection.

We are pleased to have Dr. Robin Miller, Bozeman's Curriculum Director, participate on the Core Planning Team, which will oversee the overall activities planned for the year and offer feedback on significant decisions.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math – a content area fundamental to the concept of College and Career Readiness. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from the Bozeman Public Schools.

Sincerely,

Rob Watson, Ed.D.
Superintendent

Steve Johnson
Deputy Supt. Operations
Fiscal Agent/Authorized Representative

Marilyn King, Ed.D.
Deputy Supt. Instruction

MONTANA
STATE UNIVERSITY
College of
LETTERS & SCIENCE

August 30, 2012

Title II MSP Program Officer
Montana Office of Public Instruction
P.O. Box 202501
Helena, MT 59620-2501

RE: ESEA Title II, Part B
Mathematics and Science Partnership Program

The Department of Mathematical Sciences at MSU-Bozeman is pleased to participate in partnership with the Bozeman School District, faculty at The University of Montana, and Montana's Educational Service Areas in bringing the Common Core Standards for Mathematics into Montana classrooms. In particular, we recognize and support Dr. Jennie Luebeck and Dr. Brian Lindaman, both of our department, as co-directors of the project along with Dr. Georgia Cobbs of The U of M. Their roles will include supervising the overall project, contributing to the design of professional development activities, and engaging in project-related research.

At a university level, I believe the proposed MCCSM project supports MSU President Waded Cruzado's strong commitment to our outreach mission as a land-grant institution, and also aligns with Provost Martha Potvin's interest in the role of universities during implementation of the Common Core. At the department level, I fully support the ongoing efforts of our mathematics education faculty to provide education and opportunities for Montana's classroom teachers.

The MCCSM partnership will continue our long history of working with K-12 teachers in the Bozeman area and across the state. The opportunity to partner with local school districts in this way advances the service mission of the mathematics education faculty to work with the K-12 mathematics community in the state.

I see a significant benefit to MSU in several areas. We indirectly benefit by providing extended training to some of our own graduates who are now classroom teachers. I expect that some project materials can eventually be used in our undergraduate teacher education programs. Our graduate programs will certainly benefit – online learning modules can be adapted for us in our masters program for secondary teachers, and one if not more of our doctoral students will be able to connect their research studies to some aspects of this project.

We support this project in every way possible as a department. This includes approval for faculty to engage in all project planning and activities; use of department resources by project faculty including classroom space and resources for workshops potentially held at MSU; and copy/print services to be reimbursed by the project.

If you have any questions, please feel free to contact me!

Kenneth L. Bowers

Kenneth L. Bowers, Head

Department of Mathematical Sciences

- Mathematics
- Math Education
- Statistics

2-214 Wilson Hall
P.O. Box 172400
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The University of Montana

Phyllis J. Washington
College of Education and Human Sciences
Office of the Dean
The University of Montana
32 Campus Drive
Missoula, Montana 59812-6336

27 August 2012

Dr. Jennifer Luebeck
Dept. of Mathematical Sciences
2-214 Wilson Hall, MSU
Bozeman, MT 59717

Dear Dr. Luebeck,

It is my pleasure to support your collaboration with Dr. Georgia Cobbs and the joint grant application for the 2013-2015 Mathematics and Science Partnership (MSP) Program through the Office of Public Instruction (OPI), and I am pleased to include our College in the partnership. It is my understanding the overarching goal is to improve student learning in grades K-12 over a three-year period using the Montana Common Core Standards for Mathematics (MCCSM) as your guiding force.

In the first year you intend to pilot professional development in a variety of different district settings with key personnel in grades 4-7. I'm pleased to note that you have built in time to carefully research, design, and implement a series of professional development activities based on best practices in both teacher and student learning. I'm especially intrigued by your plan to create videos of excellent teachers using Best Practices in the classroom, to be critiqued and placed on a statewide website for other teachers to access. This will enable all teachers to see the MCCSM in action and understand how they, too, can implement these teaching practices in their respective classrooms.

Dr. Cobbs' role in this MSP grant builds upon her expertise in working with elementary teachers across the state. Her 16-year history in this field has established her value not only as a pre-service mathematics teacher educator here at The University of Montana, but as a designer and provider of professional development around the state (and beyond!). Her strengths in mathematics education and in using technology appropriately for effective learning will be an asset to this proposed project, will build on the rapport and statewide connections she has established over time, and will allow many more teachers to benefit from her expertise.

I wish you the best in your application and will provide support where possible.

Sincerely,

R. D. Evans

Roberta D. Evans
Dean
Phyllis J. Washington College of Education and Human Sciences
The University of Montana

PESA **Prairie Educational Service Area, Region I**

Kim Stanton, Director
707 South Stacy
Miles City, MT 59301
(406)853-1908
pesa@midrivers.com

Sue Stanton, Assistant
317 Arrowhead Dr.
Miles City, MT 59301
(406)951-0967
sstanton@midrivers.com

August 16, 2012

To Whom it May Concern:

I am pleased to write a letter of commitment for your MT Common Core Standards Mathematics Project grant proposal.

The PESA Region I agrees to coordinate facilities and services for the grant's professional development, promote the project, arrange professional development host sites, support online professional development, connect the MCCSM Project with promising schools and teachers in our region, provide input on professional development experiences, and support the implementation of the grant's trainings to additional districts.

In addition, PESA will attempt to help gather teachers for training, and support the cohort/PLC approach among our Region I districts.

We are excited about this promising opportunity and are pleased to be collaborating with you on this endeavor. Best wishes for a successful grant award!

Sincerely,

Kim Stanton

PESA Director

MNCESR MONTANA NORTH CENTRAL EDUCATIONAL SERVICE REGION
Serving All School Districts in Blaine, Cascade, Chouteau, Glacier, Hill, Liberty, Pondera, Teton, and Toole Counties

Gaye L. Genereux, Director
17555 Coal Mine Road
Big Sandy, MT 59520-8283

Lisa Scott
Mathematics Education Consulting
1102 Anchor Ave.
Billings, MT. 59105

August 17, 2012

Dear Ms. Scott:

I am pleased to write a letter of commitment for your Montana Mathematics and Science Partnership (MSP) Program grant proposal. The Montana North Central Educational Service Region II (MNCESR) agrees to be a partner in the grant and to participate on a core planning team to oversee the general design and implementation of the program. I am committed to the goals of the Montana MSP Program to improve K-12 mathematics student learning and mathematics teaching skills by implementing high-quality professional learning; collaborating and coordinating with you, the other Regional Educational Service Areas, and schools in MNCESR; and supporting the Montana STEM Initiative. I have a Broadfield Science degree in Secondary Education as well as two Masters Degrees, one with a General Science Option and the other with a K-12 Principal Option. I taught high school science for 33 years and was a Science Fair Projects and a Science Olympiad coach over that period of time. I'd like to assist you in any way that I can.

This MSP mathematics grant will help build strong professional development in mathematics and will support the creation of a statewide, research-based, and sustainable approach to improve student mathematics achievement and teacher content knowledge.

MNCESR will support your grant proposal to provide Montana schools with mathematics professional development to enable them to successfully implement and sustain their use of evidence-based practices to improve academic mathematics achievement for all students. MNCESR can promote your project by advertising, hosting, and arranging professional development if and when needed; supporting online professional development; and connecting you with appropriate schools, administrators, and teachers within MNCESR. My Montana Common Core Mathematics facilitators and I are ready to provide input on our professional development experiences and will plan to attend the trainings you offer. Our MNCESR Math facilitators can begin to move into a position to present your training to additional districts and support their implementation beginning any time including Years 2 and 3 of the grant.

Sincerely,

Gaye L. Genereux

Gaye L. Genereux
MNCESR Executive Director

MONTANA
STATE UNIVERSITY
BILLINGS
Access & Excellence

Montana Center for
Inclusive Education
College of Education

August 17, 2012

Lisa Scott
Mathematics Education Consulting
1102 Anchor Ave.
Billings, MT 59105

Dear Ms. Scott,

I am pleased to write a letter of commitment for your Montana Mathematics and Science Partnership (MSP) Program grant proposal. The Montana Region Education Service Area III (MRESA3) agrees to be a partner in the grant and to participate on a core planning team to oversee the general design and implementation of the program. I am committed to the goals of the Montana MSP Program to improve K-12 math student learning and math teaching skills by implementing high-quality professional learning, collaborating and coordinating with the Regional Educational Service Area network.

This MSP inquiry grant will help build strong professional development in inquiry-based math and supports the creation of a statewide, research-based, and sustainable approach to improve student math achievement and teacher content knowledge of the K-12 Framework for Math.

MESA3 supports your grant proposal to provide Montana schools with inquiry math professional development to enable them to successfully implement and sustain their use of evidence based practices to improve academic math outcomes for all students.

Sincerely,

John Keener

John Keener
MRESA3 Project Coordinator
Montana State University Billings
1500 University Drive
Billings, MT 59101

RESA4U
MONTANA REGION IV EDUCATIONAL SERVICE AGENCY
PO Box 6669
404 W Main St.
Bozeman, MT 59771

August 24, 2012

Dr. Jennifer Luebeck
Associate Director Mathematics Education
Dept. of Mathematical Sciences
2-214 Wilson Hall
Montana State University-Bozeman
Bozeman, MT 59717

Dear Dr. Luebeck,

I am pleased to write a letter of commitment for your Montana Common Core Standards Mathematics Project (MCCSM) grant proposal. RESA4U agrees to be a partner in the grant and to participate on a core planning team to oversee the general design and implementation of the program. RESA4U is committed to the goals of the MCCSM Project to improve teachers' knowledge and use of Montana's Common Core Standards for Mathematics so that ultimately there is a beneficial impact on student learning of the concepts introduced through the Common Core State Standards.

I believe that the structure that is being developed by RESA4U in Region IV will allow us to promote, arrange and deliver the professional development that is designed through this grant and we will support online professional development which will allow delivery to the most rural small districts. RESA4U will have the capacity to expand the delivery of professional development during years 2 and 3 of the grant to additional districts in our region.

The program design that is developed through this project will allow RESA4U to deliver the relevant professional development to our regional schools that they have been requesting since Montana committed to the Common Core State Standards. We hope to be able to utilize multiple delivery methods so that all of the schools in our region will be able to participate in this critical professional development in the future. I commit that RESA4U will be fully involved and will lend whatever resources that we can as requested by the project team in the design and implementation of the MCCSM.

Sincerely,

Bruce Grubbs
Executive Director

Nancy Marks, WM-CSPD Coordinator
Western Montana- CSPD
215 South 6th St West
Missoula, MT 59801
406-728-2400, Ext. 1088 Fax: 728-2417

www.wmcspd.org
nancymarks@wmcspd.org

August 20, 2012

To Whom it May Concern:

I am pleased to write a letter of commitment for your MT Common Core Standards Mathematics Project grant proposal.

As a supporter of the project , Western MT CSPD is willing to assist with recruiting key staff members who are exemplary math teachers to work with the grant and connect you with promising schools and teachers in our region. We will promote the project, coordinate facilities and registration process for grant activities as needed

We are interested in serving on the Core Planning Team and willing to offer input into professional development activities that will blend in with the activities already being offered in our region as well as attend those activities to increase our knowledge of the project.

In addition, we are very willing to provide the support and expertise of our regional technologist to assist in creating the videos and providing professional development for the participants in the grant. In addition, WM-CSPD is well situated to host the online components of the grants and provide access to other regions and the state.

In years 2 and 3, we will support the process by coordinating professional development across the region, and support the MCCSM Implementation in those districts.

We are excited about this promising opportunity and are pleased to be collaborating with you on this endeavor. Best wishes for a successful grant award!

Sincerely,

Nancy Marks
WMCSPD Director

The Montana Learning Center at Canyon Ferry Lake

Date: 24 August 2012

To: Mathematics and Science Partnerships (MSP) Program Directors
ESEA Title II, Part B through Montana Office of Public Instruction

From: The Montana Learning Center at Canyon Ferry Lake (MLC) (montanalearning.org)

Re.: Letter of Support for the Montana Common Core Standards Mathematics Project (MCCSM)
Principal Investigator: Dr. Jennifer Luebeck, MSU-Bozeman

As an educational nonprofit (501 (c) (3)) STEM Institute, the Montana Learning Center (MLC) provides and promotes quality immersion experiences in science, technology, engineering and mathematics in a unique lakeside environment. We expand and extend the traditional education provided by school curricula and state or federal mandates. MLC will assist in building a world in which students and adults (particularly teachers) use STEM understandings to problem solve, implement processes of discovery and inquiry, inspire others to wonder about and appreciate our natural world, conserve natural resources and utilize renewable resources, make good personal decisions, and stimulate a life-long learning process.

MLC programs include "kids" camps and a family camp that focus on understanding mathematics and science, and solving problems using engineering techniques and technology. In conjunction with Helena ExplorationWorks, we have offered robotics workshops to build and program robots to accomplish selected tasks that reinforce both fractions and algebraic thinking and utilize engineering design concepts. Through partnership with grant projects, the Montana Council of Teachers of Mathematics, and other educational organizations, we host various workshops for teachers.

One project that the MLC conducts for teachers that relates specifically to the goals and activities of the MCCSM is the Springtime in the Rockies Technology Conference. This conference is an annual technology training for STEM teachers in Montana and is led by two recipients of the Presidential Award for Excellence in Teaching, one in mathematics, Dick Seitz, and one in science, Paul Andersen. Dick and Paul have also been honored as Montana Teachers of the Year and Dick has National Board Certification for Adolescents and Young Adults. Dick teaches mathematics at Helena High School and is a former MLC Executive Director. Paul is a science teacher at Bozeman High School and is currently on the MLC Board of Directors. At the Springtime conference, leading teachers of science, technology, engineering and mathematics from high schools and middle schools across Montana come to share their expertise and learn together new ways to utilize the power of technology to improve teaching and learning. Topics include the "Blended Model" and the development of podcasts.
See http://www.youtube.com/watch?v=HH2vxvvBq-Q and *http://bit.ly/examplepodcast*

• The Montana Learning Center at Canyon Ferry Lake
7653 Canyon Ferry Road • Helena, MT 59602-9788
(406) 475-3638 • fax 475-3871

MONTANA COUNCIL OF TEACHERS OF MATHEMATICS

27 August 2012

Dr. Jennifer Luebeck
Dept. of Mathematical Sciences
2-214 Wilson Hall – MSU
Bozeman, MT 59717

Dr. Luebeck,

As President of Montana Council of Teachers of Mathematics (MCTM) it is my pleasure to write a letter of support for the 2013-2015 Mathematics and Science Partnership (MSP) Grant through the Office of Public Instruction. I am excited to be involved in this partnership, as I believe it will only further the work MCTM has started in educating Montana teachers grades K-12 about the Montana Common Core Standards for Mathematics (MCCSM).

I understand your intent is to build professional development in several districts across the state, starting with grades 4-7. Your use of current technology available will ensure that this professional development can be provided to teachers across the state at a decreased cost.

MCTM has provided professional development this past summer in the Mathematical Practices and use of meaningful tasks to implement the practices into classroom. We were able to provide professional development for over 150 teachers from across the state in Montana. Your work will serve to continue this professional development.

MCTM will support the grant's mission by getting the message out to teachers across the state through our newsletter, as well as provide assistance with key leaders in the state to help work with your teachers.

Thank you for the opportunity to be a partnership in this important mission in Montana Mathematics Education.

Sincerely,
Angel Zickefoose
President
Montana Council of Mathematics
Billings, MT

ANACONDA PUBLIC SCHOOLS
DR. TOM DARNELL, SUPERINTENDENT
1410 WEST PARK STREET
ANACONDA, MT 59711
TEL: (406) 563-6361, EXT 1602 FAX: (406) 563-7763

BUSINESS OFFICE
KEVIN PATRICK, BUSINESS MANAGER/CLERK
TEL: (406) 563-8277, EXT 1702 FAX: (406) 563-7763

Wednesday, August 29, 2012

Dear Dr. Cobbs:

I am writing to indicate that the Anaconda Public Schools IS interested in partnering with you and your colleagues on the Math Science Partnership grant. Please consider this our letter of commitment to the project.

Anaconda School District #10 is a high need district and our teachers and students could benefit greatly from our participation in such an effort. We thank you for the opportunity to be a part of this partnership to grow faculty understanding of the Common Core State Standards as they pertain to mathematics and impact student learning in positive ways.

Please contact us if you have questions or need further information.

Sincerely,

Angela McLean
Curriculum Coordinator

Dr. Tom Darnell
Superintendent

METRICA

1703 36th Avenue Court - Greeley, CO 80634-2807

August 27, 2012

Dr. Jennifer L. Luebeck
Department of Mathematical Sciences
Montana State University
Bozeman, MT

Dear Dr. Luebeck:

It is my intent to serve as External Evaluator of your proposed Mathematics and Science Partnership. I do not have any obligations, contracts, or restrictions that will prevent me from carrying out the duties in a timely and professional manner.

I understand that I will be responsible for qualitative and quantitative formative and summative evaluation of the MSP project to comprehensively assess its impact on improving student (grades 4-7) mathematics content knowledge and teacher content knowledge of the *MT Common Core Standards for Mathematics* as well as delivery and impact of the learning modules and the effectiveness of the comprehensive partnership described in your proposal.

I will communicate with you on an ongoing basis, will provide short-loop formative feedback, quarterly reports, annual reports and will also adhere to the reporting required by the State of Montana and the United States Department of Education.

Sincerely yours,

Rose Shaw, Ph.D.

Rose Shaw, Ph.D.

Arlee Joint School District No. 8

72220 Fyant St. – Arlee, Montana 59821 (406)726-3216 Fax (406)726-3940

Accessible Responsive Learning Environment for Excellence

Trustees:
Amy Burland – Chairperson
Shelly Fyant – Vice-Chairperson
Rick Desjarlais – Trustee
Gary Wining – Trustee
Elias L. Peak - Trustee

Administrative Staff:
George Linthicum – Superintendent
Don Holst – Elementary Principal
Jim Taylor – JHS/HS Principal

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Arlee Joint School District #8 in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:
Selection of a critical mass of math teacher participants (based on district size) – Fall 2012
Supporting these seed teachers as they complete professional development Spring 2013
Providing opportunity to build a professional learning community where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards following the posted Montana Office of Public Instruction timeline, and currently engaged in the Stage 2 – Alignment process for English and Language Arts, with emphasis on writing. We are also looking at additional support in order that we can begin focusing on the common core standards for mathematics, which makes this opportunity ideal for the Arlee School District. The timeliness of our school district having an opportunity to participate in this process is ideal since the Arlee Elementary School is in AYP "Corrective Action" status for mathematics. The District is currently in the process of developing a district-wide school improvement process and, I believe, would benefit greatly from being part of the proposed Mathematics and Science Partnership project since the activities you propose align well with our current efforts to improve educational opportunities for our students.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching. With over 70% of the district students receiving free or reduced meals, our need to ensure that we take every possible opportunity to provide quality instruction

for our students is even greater than many school districts. Approximately, 60% of our students are Native American with the unique challenges and opportunities experienced in a reservation setting.

We are especially excited about the many possibilities offered by project, especially in terms of professional development for staff, and the resulting improvement of instruction. The focus on the integration of science, technology, engineering and mathematics (STEM) is considered a definite plus for the students of the Arlee School District, not only providing a richer education experience, but also increasing opportunities for our students upon graduation from high school. The Arlee High School will be a Graduation Matters Montana school this year thereby lending itself to the benefits that will come directly and indirectly from the proposed project. Certainly, the concept of inclusion of "mentor teachers" coming out of the project working with the other members of the Arlee educational staff is in alignment with best practices for instructional improvement through qualified in-house staff members. Our teachers who are slated to be part of the coming training program will greatly benefit from the public lessons which are slated to provide concrete exemplars of standards-based teaching and teacher reflection

As an educator with over 4 decades of experience in the public school setting, the proposed project, upon funding, should provide participants with both valuable knowledge and skills that should aid student achievement in the math content area. It is exciting to see the possibility of the proposed project being funded, since we in education are so use to funding being cut or reduced for the much needed training and support required to maintain a highly qualified instructional staff. If funded, and we become one of the partnering schools, I believe it will be one of the proverbial win-win opportunities where everyone benefits. Speaking for the Arlee School District, it is my sincere hope that the proposal is found worthy of funding and support, and that we are one of the districts that reap the rewards of what the project proposes to offer.

Thank you.

Respectfully,

George Linthicum

George Linthicum, Superintendent, Arlee Joint School District #8

BOX ELDER PUBLIC SCHOOLS

DISTRICT NO. 13-G, HILL COUNTY
BOX ELDER, MONTANA 59521

August 28, 2012
Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Box Elder School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:
Selection of a critical mass (2-3 teachers) of math teacher participants –Fall 2012
Supporting these seed teachers as they complete professional development Spring 2013
Providing opportunity to build a professional learning community where the seed teachers use their training with other math teachers in grades 4-7 and beyond 2013-20114

Our district has been working with the Montana Common Core Standards. In the past all three of our schools have earned National Title I Distinguished School of the Year awards. We also continue to be a GEAR UP school and a member of the Golden Triangle Curriculum Cooperative. We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools for standards-based teaching.

We are especially excited about the timing of this opportunity as we have been discussing the future testing changes as well as many of the other changes in education. We appreciate the focus on integrating science, technology, engineering and mathematics as well as the significant mentoring component. We have in mind a candidate for the Core Planning Team who may be an excellent addition to this effort.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Robert A. Heppner by DH

Robert A. Heppner-Superintendent

Bozeman Public Schools
404 West Main, P.O. Box 520
Bozeman, MT 59771-0520
www.bsd7.org

Robert J. Watson, Ed.D.
Superintendent

Phone: (406) 522-6001
Fax: (406) 522-6065
robert.watson@bsd7.org

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

On behalf of Bozeman School District #7, we are pleased to submit this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We join a high-functioning partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. We have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students. In fact, Bozeman School District #7 will serve as Primary Applicant and Fiscal Agent for this proposal and provide financial and accounting services for the project.

We understand that our partnership commitment includes the following:

- Selection of a critical mass of math teacher participants (based on district size) – Fall 2012
- Supporting these seed teachers as they complete professional development – Spring 2013
- Providing opportunity to build a professional learning community where the seed teachers use their training with other math teachers in grades 4-7 and beyond – 2013-2014

Our District has been working with the Montana Common Core Standards (MT CCSS). We have a well-thought-out implementation plan. In fact, we are fully implementing the ELA MT CCSS and the eight standards of Mathematical Practices during the 2012-13 school year. Full implementation in both ELA and Mathematics is planned for 2013-14.

The activities you propose align well with our Long Range Strategic Plan. As part of our Long Range Strategic Plan, we will focus heavily on the use of best practice instructional strategies to prepare all students to be college and career ready. We have strategic objectives and action plans that focus on personalizing learning, so that every student experiences growth towards achieving and exceeding proficiency in the MT CCSS; utilizing of content area standards, including focused attention using Quadrant D instructional practices, UBD planning procedures, standards-based assessment, and fair grading practices as we implement the CCSS; and preparing all students to be College and Career Ready. We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching.

We are especially excited about the spectrum and the scope of professional development for our teachers:
...the focus on the integration of science, technology, engineering and mathematics (STEM);
...the inclusion of "mentor teachers" to work with our own teachers who go through the project;
...the idea that we will have "embedded teachers" in our own district trained to share knowledge with their peers; and
...the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection.

We are pleased to have Dr. Robin Miller, Bozeman's Curriculum Director, participate on the Core Planning Team, which will oversee the overall activities planned for the year and offer feedback on significant decisions.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math – a content area fundamental to the concept of College and Career Readiness. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from the Bozeman Public Schools.

Sincerely,

Rob Watson, Ed.D.
Superintendent

Steve Johnson
Deputy Supt. Operations
Fiscal Agent/Authorized Representative

Marilyn King, Ed.D.
Deputy Supt. Instruction

Charlo School District 7J

404 1st Avenue West
Box 10 - Charlo, MT 59824
(406) 644-2206 - FAX (406) 644-2400

August 27, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall, MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Charlo School District 7J in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a *critical mass* of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards and the Office of Public Instruction this past year and we feel this program will help us transition to the Common Core Standards, fits well with our current professional development, and will benefit our students greatly.

The activities you propose align well with our current efforts to prepare our students for the various opportunities after their Charlo Schools education and will aid our Montana Striving Readers Program, Gear up, Title I, and the many other school improvement efforts currently offered at Charlo Schools.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching.

We are especially excited about the inclusion mentor teachers to work with our own teachers who go through the project, as well as, the focus on the integration of science, technology, engineering, and mathematics.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Thom J. Peck, Superintendent

CONRAD PUBLIC SCHOOLS

www.conradschools.org

GREG JENSEN, Principal
Meadowlark Elementary School (K-2)
Phone: (406) 278-5620
Fax: (406) 278-5621
Prairie View School (3-5)
Phone : (406) 271-5251

SCHOOL DISTRICT NO. 10

CRAIG BARRINGER, Superintendent

AFTON C. LAMOREAUX, Clerk/Business Manager

215 SOUTH MARYLAND STREET
CONRAD, MONTANA 59425-2017
PHONE: (406) 278-5521
FAX: (406) 278-3630

TARA THIELMAN, Principal
Utterback Middle School (6-8)
Phone: (406) 278-3227
Fax: (406) 278-3228

KEN LARSON, Principal
Conrad High School (9-12)
Phone: (406) 278-3285
Fax: (406) 278-3806

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Conrad School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a critical mass (2-3 teachers) of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards. Teachers and administrators have been involved in extensive training through Montana Office of Public Instruction, Montana North Central Educational Service Region (MNCESR), and Golden Triangle Curriculum Cooperative (GTCC).

The activities you propose align well with our current efforts in our district to improve student learning and instruction. This past summer our district had a two-day workshop that included Common Core Standards. We had over 30 staff members take time during their summer to participate in the professional development opportunities.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching. Our district is looking forward to leading the way in the implementation of the Common Core Standards in our state.

We are especially excited about learning and sharing teaching strategies which focus on the integration of science, technology, engineering and mathematics (STEM) the inclusion of "mentor teachers" to work with our own teachers who go through the project the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Craig Barringer
Conrad Schools Superintendent

East Glacier Park Grade School
204 Washington St. / P. O. Box 150
East Glacier Park, MT 59434
406-226-5543 (T) 406-226-4269 (F)
eastglacierschool@yahoo.com or egp@3rivers.net
www.eastglacierschool.com

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent East Glacier Park District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a critical mass (1 teacher) of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards; our curriculum cooperative just released our new math curriculum. This curriculum was written for the new Montana Common Core standards. Our staff will be using these objectives in planning our year in Math instruction.

The activities you propose align well with our current efforts to incorporate the new Montana Core Standards into our math instruction. We have been searching for assistance with implementation of this major change in our curriculum objectives. We even investigated Montana's Office of Public Instruction's RTI program last school year in hopes that it would offer assistance; unfortunately, they only offered help with reading. Even our curriculum cooperative has a good handle on the reading/language arts implementation, but nothing in the math area. Your program will be of great assistance to our school/students.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching. Our teachers come with teaching experience ranging from 3 years to twenty + years. They all find the new standards to be an exciting challenge but are feeling a bit overwhelmed about how to handle the actual implementation. We are actually due for a new math series but have postponed purchasing anything until we can find one that supports the new standards.

We are especially excited about the inclusion of "mentor teachers" to work with our own teachers who go through the project. The "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection will be embraced by our teachers.

I would love to be considered for the Core Planning Team!

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Karlona Sheppard
Principal

Hot Springs School District

Fax Cover Sheet

P.O. Box 1005, 301 Broadway, Hot Springs, MT 59845
(406)741-2962 Fax (406)741-3287

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall, MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Hot Springs School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a *critical mass* of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards. We recently completed a Common Core Mathematics alignment training through our curriculum cooperative. This previous school year our school also participated with MSU in the BLOSSOM project to design and implement STEM lessons in our 7th & 8th grade classes. The project proved to be very challenging and engaging for our students and teachers. Our school has decided to focus on mathematics instruction this school year. After analyzing our testing data, our staff determined that more training and focus needed to be placed on mathematics instruction and the MCCSM project is the perfect fit.

The activities you propose align well with our current efforts to improve mathematics scores in our district. We have recently decided to implement a computer based adaptive math learning program throughout our elementary. The program is aligned with the Common Core standards in mathematics and is designed to differentiate learning for each individual student.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching.

We are especially excited about the STEM curriculum integration. As previously stated, our school participated in the BLOSSOM project this past school year and we are excited and motivated to continue to offer more STEM lessons. Our school has also recently begun a mentor teacher program which aligns closely with the mentor teacher component of the MCCSM.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district. Please consider Hot Springs School as a willing and eager school that would like to participate in the MCCSM project.

Sincerely,

Kevin Meredith

Kevin Meredith
Superintendent
Hot Springs School

Our Kids Our Future
KALISPELL PUBLIC SCHOOLS

Kalispell Public Schools

233 1st Ave. East - Kalispell, Montana 59901
Phone: (406)751-3400 Fax (406)751-3416

SUPERINTENDENT	ASST. SUPERINTENDENT	HUMAN RESOURCES	SPECIAL PROJECTS
Darlene Schottle Ed.D.	Dan Zorn Ed.D.	Karen Glasser	Chris Bilant
Phone (406)751-3434	Phone (406)751-3434	Phone (406)751-3444	Phone (406)751-3408

August 27, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent the Kalispell School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a *critical mass* of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards. Our district pacing guides and common assessments are being revised. In addition many of our administrators and teachers have received first or second level training on the both the content standards and the mathematical practices.

The activities you propose align well with our current efforts to increase our mathematics scores, especially in the middle years. We currently working with intervention teachers to provide our students a "double dip" of instruction when they are struggling in Math. It is our focus area in our Response to Intervention and our Professional Learning Communities this year. Our district has also hired a full time district Math Facilitator K-5 and has provided additional training time for our middle school Math department heads.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching. Our teachers have been working diligently to utilize data to provide flexible group and additional instruction to our struggling mathematicians. We are excited about the possibility of concrete professional development to enhance our implementation of content and best educational practices.

We are especially excited about the project connections with the university in a joint teacher training program. Professional development has the most impact and long term effect on student outcomes. So, providing this type of training is a vital component for successful implementation of the Common Core. The inclusion of "mentor teachers" to work with our own teachers who go through the project will provide a higher likelihood of buy in and successful changes to teaching practice. This aligned with our ability to have "embedded teachers" in our own district trained to share knowledge with their peers will be a significant asset.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district. In addition, I, or my Assistant Superintendent, Dan Zorn are very willing to be considered for the Core Planning Team.

Sincerely,

Darlene Schottle Ed.D.
Superintendent of School District #5
Kalispell, Montana

LEWISTOWN PUBLIC SCHOOLS
215 7TH AVENUE SOUTH, LEWISTOWN, MT 59457
Phone: (406) 535-8777 Fax: (406-535-3835 www. lewistown.k12.mt.us

August 29, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent the Lewistown Public Schools in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a critical mass of math teacher participants (based on district size) -- *Fall 2012*
- Supporting these seed teachers as they complete professional development – *Spring 2013*
- Providing opportunity to build a professional learning community where the seed teachers use their training with other math teachers in grades 4-7 and beyond – *2013-2014*

Our District has been working with the Montana Common Core Standards starting with awareness activities last year. Our committees will be meeting many times during the year to align our standards to the Montana Common Core so that we are prepared for initial implementation next school year.

The activities you propose align well with our current efforts to implement this curriculum plus will be beneficial in improving student achievement and toward our school improvement plan and our efforts in each building's Response to Intervention program.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content

knowledge as well as tools and exemplars for standards-based teaching. We also are interested in the additional possibilities this grant might address, such as.

- the focus on the integration of science, technology, engineering and mathematics (STEM)
- the inclusion of "mentor teachers" to work with our own teachers who go through the project
- the idea that we will have "embedded teachers" in our own district trained to share knowledge with their peers
- the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection

We believe this is a worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. If this project receives funding, you can expect our full participation.

Sincerely

Scott A. Dubbs
Curriculum Director

August 30, 2012

Dear Dr. Luebeck:

I represent the Miles City Unified School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a *critical mass* of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards. We have had an administrator and teacher attend OPI trainings and have conducted in-district trainings with all K-6 teachers and all 7-12 math teachers. We have purchased new math textbooks for grades 4-6, Algebra I, and Geometry that are aligned with the Common Core Standards. We are excited about the changes and look forward to implementing the standards. Of course, we have concerns about transitioning, but will address them as they occur.

The activities you propose align well with our current efforts to improve our student scores on their math MontCAS assessments.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching.

We are especially excited about:
...the focus on the integration of science, technology, engineering and mathematics (STEM)
...the inclusion of "mentor teachers" to work with our own teachers who go through the project
...the idea that we will have "embedded teachers" in our own district trained to share knowledge with their peers
...the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection

I would love to be considered to be a member of the Core Planning Team. I have been the principal of Garfield Elementary, which is a K-6 school, for the past 8 years. Before that, I was the Assistant Principal at Custer County District High School for 5 years and a high school math teacher for 20 years. I still have a passion for math and for teaching, especially other teachers!

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Laurie Huffman

Laurie Huffman, Principal
Garfield Elementary Schools
1015 Milwaukee
Miles City, MT 59301

Target Range School District #23
4095 South Avenue West
Missoula, MT 59804
Phone: 406-549-9239
Fax: 406-728-8841

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Target Range School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a critical mass (2-3 teachers) of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards. Grade level teams in grades K-3 and 6-8 have worked diligently to do several things. They have collaborated with Missoula area teachers to develop student friendly learning targets based on the MCCSS. They have then worked to align their current curriculum materials and create skeletal syllabi and begin to supplement areas of concern with resources aside from their primary texts. Finally, they have fleshed out the standards in a way that allowed them to prioritize and focus on standards that would lend themselves to standards-based report cards. This has been a meaningful process and we are excited to be implementing the MCCSS this fall in order to fine tune our processes.

The activities you propose align well with our current efforts to coordinate other subject areas in relation to moving forward with STEM and ELA goals. This is an area where guidance, materials, processes, and professional development are necessary.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching. We are prepared to be a viable partner in this process who will add to your design as well as benefit from your professional development.

We are especially excited about the following:
...the focus on the integration of science, technology, engineering and mathematics (STEM)
...the inclusion of "mentor teachers" to work with our own teachers who go through the project
...the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection

I recommend Sandra Squillace, 4th Grade teacher, and Alison Lokey, Middle School math teacher be considered for the Core Planning Team. Their expertise and enthusiasm will be welcome on your team and they are received as leaders in our district.

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Luke Laslovich
Principal, Target Range School

August 23, 2012

Jennifer Luebeck, MCCSM Project
Dept. of Mathematical Sciences
2-214 Wilson Hall. MSU
Bozeman, MT 59717

Dear Dr. Luebeck:

I represent Terry School District in this letter of commitment to participate as an LEA partner in your proposed Mathematics and Science Partnership project (currently referred to as MCCSM). We are pleased to join the partnership of Montana State University, The University of Montana, our five statewide Regional Service Areas, and a select group of school districts in this proposed project. I have read your letter of invitation and project description, and believe that many components of the proposal will greatly benefit our teachers and students.

We understand that our partnership commitment includes the following:

- Selection of a *critical mass* of math teacher participants (based on district size) – Fall 2012
- Supporting these *seed teachers* as they complete professional development Spring 2013
- Providing opportunity to build a *professional learning community* where the seed teachers use their training with other math teachers in grades 4-7 and beyond –2013-2014

Our District has been working with the Montana Common Core Standards. My faculty has been attending regional trainings, workshops, etc. to prepare to implement the Common Core Standards. I as the Superintendent have attended administrator workshops to gain further insight with the implementation.

The activities you propose align well with our current efforts to help my district improve proficiency in Math, to help reach the goals outlined in the school improvement plan, and to see that the 5YCEP goals are better reached.

We appreciate that this project moves beyond just introducing or raising awareness of Montana's Common Core Standards, and intends to provide teachers with solid content knowledge as well as tools and exemplars for standards-based teaching. My teaching staff is very open and willing to better their instruction and is anxious to implement the Common Core.

We are especially excited about:
...the focus on the integration of science, technology, engineering and mathematics (STEM)
...the inclusion of "mentor teachers" to work with our own teachers who go through the project
...the idea that we will have "embedded teachers" in our own district trained to share knowledge with their peers
...the "public lessons" that will provide concrete examples of standards-based teaching and teacher reflection

This is an exciting and worthwhile proposal, and if funded, will provide valuable information related to pedagogy and student achievement in the content area of math. Our teachers and students will be the beneficiaries of this outstanding undertaking. If this project receives funding, you can expect full and enthusiastic participation from our school district.

Sincerely,

Casey Klasna
Terry Schools
Superintendent

Partner Funding Request

Appendix E – SPECIAL Budget Form

This form did not appear in the packet, but we added it to represent how the Bozeman Public Schools (fiscal agent) will offer subawards to MSU and UM to confirm their partnership and provide salary to their faculty and students.

Name of Partner Organization: Montana State University

Direct Cost Requested for Partner	*TOTAL*
1. Salaries & Wages (Professional and Clerical) a. Luebeck $10,400 b. Lindaman $7,200 c. Diemert $10,000	$27,600
2. Employee Benefits	$4400
3. Doctoral Student Tuition/Benefits	$2000
4. Indirect Costs (passed through BPS)	$1745
Total Funding to Partner from Grant	$35,745

Name of Partner Organization: The University of Montana

Direct Cost Requested for Partner	*TOTAL*
1. Salaries & Wages (Professional and Clerical) a. Cobbs $9000	$7,200
2. Employee Benefits	$1,800
3. Indirect Costs (passed through BPS)	$462
Total Funding to Partner from Grant	$9,462