National Science Foundation
Math and Science Partnership Program Evaluation (MSP-PE)

Partnership Implementation in the MSP Program

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The present draft is based on materials, information, and data that were available to the authors as of December 2004.

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1. WHY PARTNERSHIPS?

1.1 INSTITUTIONAL PARTNERSHIPS IN MATH AND SCIENCE EDUCATION

The Math and Science Partnership (MSP) Program at the National Science Foundation (NSF) promotes the development, implementation, and sustainability of exemplary partnerships to advance high-quality math and science education. The MSP Program anticipates that the partnerships will be instrumental in improving K-12 student achievement, as well as reducing achievement gaps among diverse student populations differentiated by race/ethnicity, socioeconomic status, gender, or disability, a strategy advocated by Haycock et al. (1992). The importance of being partnership driven with science, technology, engineering, and math (STEM) faculty engagement is apparent not only from the name of the program, but also in the National Science Foundation's (NSF's) decision to include it as one of the five "key features" of the program.[1]

A required partnership in the MSP Program is between an institution of higher education (IHE) or eligible nonprofit organization (or consortium of such institutions or organizations) and one or more local education agencies (LEAs) that may also include a state educational agency or one or more businesses.[2, 3] The MSP Program also distinguishes between core and non-core partners. Core partners share responsibility and accountability for the MSP grant. All core partner organizations are required to provide evidence of their commitment to undergo the coordinated institutional change necessary to sustain the partnership effort beyond the funding period. A non-core or supporting partner is *not* required to commit to the institutional change necessary to sustain grant activities beyond the funding period, but is an important stakeholder in K-12 math and science education.

At the same time, successful partnership building requires a significant amount of time, money, and human effort—all of which may be considered precious resources. Why partnerships are needed to improve math and science education is therefore a question worth asking. One response is based on the belief that coordinated and aligned actions and policies are needed to make such improvements in student achievement—starting with widespread agreement over the goals for student learning, based on rigorous content and performance standards for K-12 students and *teachers*, who in turn receive their training from IHEs (Raizen et al., 1997). Even more basic, Goodlad (1990) measured the magnitude of the problem of achieving meaningful reform and purported the value of systemic approaches, an approach that NSF, among others, has operationalized through partnerships programs, such as MSP.

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[1] The four remaining key features include: 1) teacher quality, quantity, and diversity; 2) challenging courses and curricula; 3) evidence-based design and outcomes; and 4) institutional change and sustainability.

[2] National Library of Congress, *National Science Foundation Authorization Act of 2002* (Public Law 107-368), U.S. Government Printing Office, Washington, DC, 2002.

[3] The MSP Program calls for institutional partnerships. Many good institutional partnerships are driven by strong interpersonal relationships within the institutional partnerships. The interpersonal relationship may have been the original driver, but there is a real need for interpersonal and institutional connectivity.

Because of the complexity of trying to advance K-12 math and science education, which is influenced by many different institutions, there is a need for coordination and alignment ultimately among the institutions (not just the formal K-12 system and most certainly not just what takes place in a K-12 classroom):

- College admissions criteria that serve as a highly motivating force for precollegiate schooling (Callan, 1998);

- Teacher preparation and professional development offerings by IHEs that affect the quality and quantity of a student's teachers; and

- A host of policies implemented by state departments of education regarding student promotion, course requirements, assessments, and curriculum, as well as teacher certification rules (Teitel, 1993).

Partnerships are needed to create coordination and alignment across these institutions, as well as within K-12 systems that traditionally have been "loosely-coupled" (Weick, 1976). Partnerships also can provide continuity of focus, align curricula and assessments, create desired normative climates, and instill accountability (Elmore, 2000). Also, the Annenberg Foundation's "Challenge" gifts, which began in 1993, have helped build strong coalitions among businesses, foundations, universities, and grassroots community groups to muster greater public will and support for public school reform (The Annenberg Foundation, 2002). Previous research suggests that collaborations between IHEs and K-12 systems, far from taking place within a congenial framework, may even evoke the clashing of two cultures (Committee on SMTP, 2001; Conf. Bd. of the Math. Sci., 2001; Goodlad, 1993; and Goodlad & Sirotnik, 1988). The MSPs may have led to insights into the nature of such clashes, if any, and how to overcome them. Some of the participating IHEs might even have grappled with the historic role of schools of education (Clifford and Guthrie, 1988; Tierney, 2001; Timpane and White, 1998), and the evolving role of "professional development schools" (Clark, 1999; Committee on SMTP, 2001; Holmes Group, 1990; Pritchard and Ancess, 1999; Rice, 2002).

For math and science education, the partnerships also may be functionally critical due to the dynamic nature of science, marked by the central notion of "scientific progress." Because such progress generates new information, needs, and questions, K-12 partnering with IHEs is essential for the transference of state-of-the-art knowledge and the development of enhanced or refined teaching practices to K-12 teachers and administrators. Scientific knowledge and progress also can create new demands for math knowledge (e.g., recent emergence of computational biology; earlier emergence of computer science) and requires the partnerships to be responsive to these needs. For any given MSP, the complexity of the structure and functionality of the partnership can lead to variable implementation start-up and progress. Thus, the progress of implementation is likely to vary across the partnerships.

1.2 SUBSTUDY OBJECTIVES

The substudy is one of several under the Math and Science Partnership-Program Evaluation (MSP-PE). Like the other substudies, the partnership substudy will tentatively

occur in stages (MSP-PE, Yin, Wong, Moyer-Packenham, and Scherer, 2005). The primary *program-level* questions to be addressed will include:

1. What kinds of partnerships work under what kind of situations?
   A. What is their size?
   B. What is their leadership?
   C. What is the tolerable geographical relationship or distance?
   D. What are the benefits/costs for regional partners?
   E. What are the tolerable cultural differences?

2. What kinds of partnerships were enacted and how have they changed?

3. What difference does it make to be a core versus a non-core partner?

4. Are there better start-up strategies (planning meetings, agreement on vision/mission, etc.)?

Some of the *project-level* questions that will be addressed in the first stage of the evaluation include:

1. To what degree was there a pre-existing relationship among the partners?

2. During the start-up phase of the partnership, what kinds of partnerships existed at each MSP?
   A. How many partners were involved with the partnership and who were they?
   B. Geographically speaking, where were the partnerships located?

3. What has occurred in terms of operational set-up?
   A. What types of formal and informal relationships did the partnerships have?

4. What activities are taking place at each MSP?

5. Is the MSP evaluating its partnership?
   A. What instruments are being used to measure the partnership?
   B. How is it using the results of the partnership evaluation?
   C. How many MSPs are evaluating their partnerships?

6. Are there any contextual conditions or rival explanations that help to explain the partnership?

Data also are currently being collected through a management information system (MIS). In the subsequent years of the substudy, MSP-MIS data and MSPs' partnership data will be collected and analyzed to confirm or expand through information collected during the initial stages of the original data collection effort. For example, using data collected through the MIS, specific partnership activities will be described in conjunction with the type of partnership. The MIS further contains several open-ended type of questions that can be analyzed such as new practices or policies and lessons learned. These survey items

will be analyzed in a subsequent phase of this study. Appendix A lists the type of queries related to partnership that are captured through the MSP-MIS.

The substudy will be coordinated with a related Research, Evaluation, and Technical Assistance award (RETA) conducted by Gordon Kingsley, Ph.D. (Principal Investigator of *Alternative Approaches to Evaluating STEM Education Partnerships: A Review of Evaluation Methods of an Interorganizational Model,* NSF-MSP Award number 0231904), to minimize duplication and to maximize mutually beneficial data collection efforts. Kingsley's research is described in more detail on page 8.

2. A FRAMEWORK FOR EVALUATING MSP PROGRAM'S PARTNERSHIPS

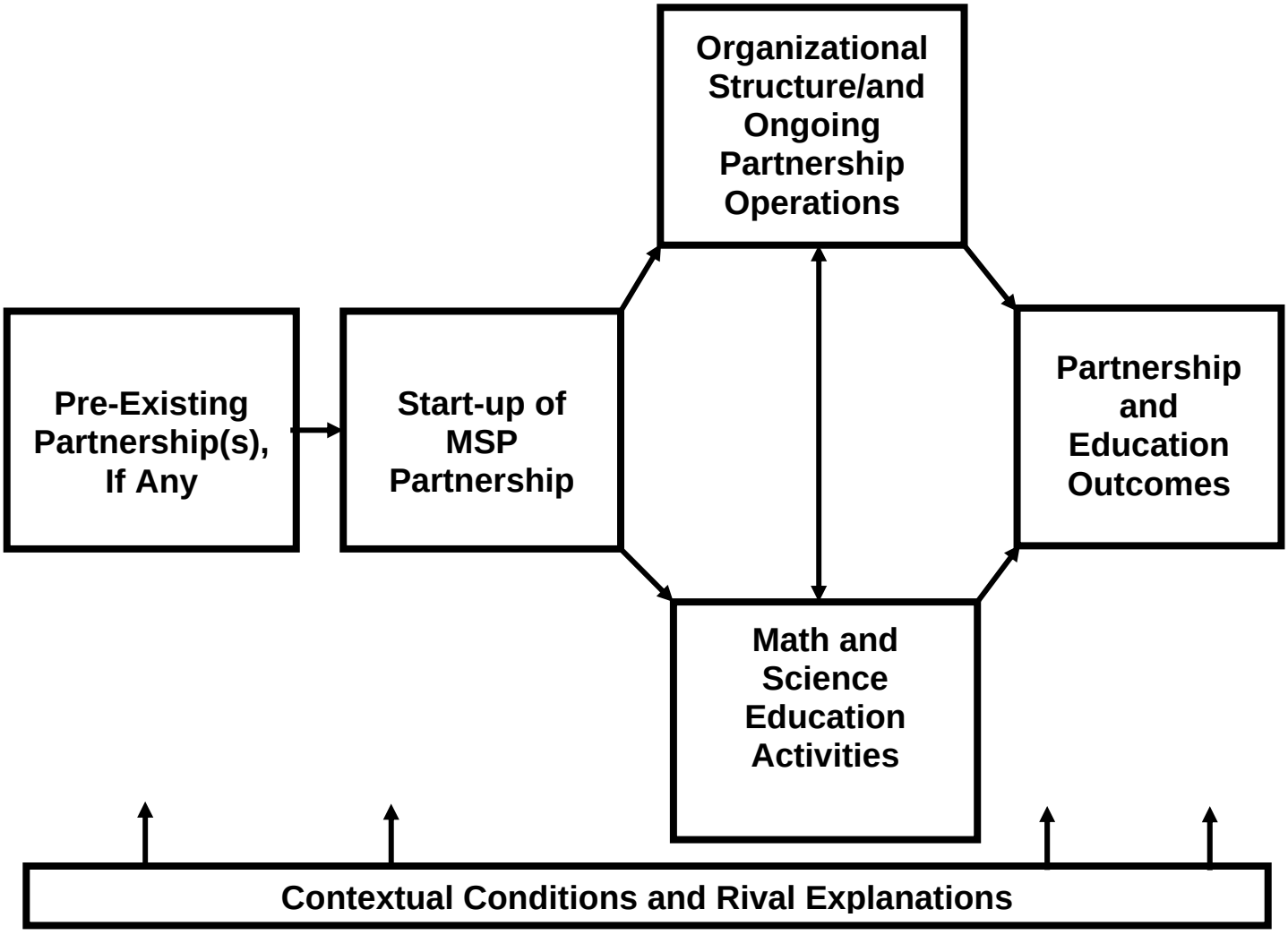
2.1 DEVELOPING AN EVALUATION FRAMEWORK

Previous research has extensively examined institutional partnerships in math and science education, as well as in related fields. Any assessment of the MSP's partnerships should be based on a framework derived from, or at least recognizing, this extensive research.

To prepare for an assessment of MSP partnerships and to examine the start-up and implementation phase, the upcoming sections provide an overview of the relevant literature on partnerships, beginning with the basic and most noted definitions of partnerships, integrated with a discussion about the development of an evaluation framework. The research appears to support (or be consistent with) a general framework as depicted in Exhibit 1.

Exhibit 1

ASSESSING PARTNERSHIPS: AN EXAMPLE OF SEQUENTIAL PHASES



One of the first important things to understand about partnerships is how the partners involved in the partnership process are defining it. Partnerships are complex and can be defined in a myriad of ways, often with subtle differences of demarcation. Some definitions of partnerships closely resemble other types of associations, and the distinctions can be murky. Terminology associated with partnerships also is an issue. In the literature, for example, the terms collaborative partnerships, community-based interventions, and community coalitions overlap and generally "describe interventions with similar characteristics" (Wandersman and Florin, 2003). The authors go on to hypothesize that the overarching purpose of partnerships and coalitions alike is described as trying "to bring about changes through processes of collaboration, collaborative planning, and implementation across different agencies and community sectors."

To complicate matters further, many partnerships and associations are categorized into various schemas to classify their levels of interaction or participation. Much of the general research presents detailed categorizations that characterize coordination, cooperation, and collaboration (and sometimes additional terms) on a continuum. On these continuums, short-term, non-binding, limited engagements fall at one end of the spectrum (such as coordination or cooperation); and on the other end are long-term, binding or formalized agreements with financial commitments, staff and resource allocations, and decisionmaking mechanisms (such as collaboration). Numerous terms are used to describe the middle ground between these two distinctions (Himmelman, 1996; Hord, 1986; Intriligator, 1992). In this view, collaboration is "a definition of mutual relationships and goals; a jointly developed structure and shared responsibility; mutual authority and accountability for success; and sharing of resources and rewards," which also requires a formal commitment (Mattesich and Monsey, 1992). With regard to the MSPs, Kingsley (2005) has stated that it may not be possible to "classify partnerships as distinctive types." Because of the range of activities the partners undertake, they may describe or define what they are doing in a range of ways.

Berkowitz (2001) makes a distinction between community coalitions and other forms of community-based cooperative activities. Community coalitions "place most emphasis on: a) representation from multiple community sectors; b) attention to multiple community issues; c) active local citizen participation; and d) bottom-up planning and decisionmaking." He contrasts coalitions with other forms of collaboratives that are "often agency-driven and single-issue or both." He adds that, "terminology is a concern….Some use 'coalition' and 'collaborative' (or 'collaborative partnership,' and sometimes 'consortium') as rough synonyms, though a 'collaboration' may involve more agency dominance and control."

Wolff (2001) refers to prior work by Florin and Chavis (1990) distinguishing between agency-based initiatives and community-based: "In the agency-based coalition, the intervention comes from the professionals and institutions in the community, and citizens are secondary players.[4] In community-based coalitions… community members identify the issues, analyze the problems, select the interventions, and deliver the interventions and the evaluation." Wolff further cites Himmelman (1996) who distinguishes between

[4] Institutions are "the shared understandings that allow organizations to interact," (The World Bank, 2003).

collaborative betterment and collaborative empowerment. The empowerment model is designed to increase the community's capacity to set priorities and control resources.

These various distinctions are useful in examining the literature as it pertains to the various forms and activities of the MSP partnerships, but defining exactly what is a partnership is compounded by the different views authors hold about partnerships. For example, Pimmel defines partnership as: "A relationship between individuals or groups that is characterized by mutual cooperation and responsibility, as for the achievement of a specified goal" (Pimmel, 2004).

Butterfoss et al. (1993), define the ideal partnership as: "A dynamic relationship among diverse actors, based on mutually agreed upon objectives, pursued through a shared understanding of the most rational division of labor based on the respective comparative advantages of each partner. Partnership encompasses mutual influence, with a careful balance between synergy and respective autonomy, which incorporates mutual respect, equal participation in decisionmaking, mutual accountability, and transparency." This is a functional definition of partnerships in that it allows for a complementarity among partners in relation to a common goal.

Gouvis Roman et al. (2002) define a partnership as "a linkage between community organizations and government agencies formed for the purpose of reducing a defined social problem or improving the conditions of the community."[5] Jehl et al., discuss the importance of partnerships between schools and "community builders" such as community development corporations, neighborhood-based organizations, faith-based groups, settlement houses, and others in including education reform as part of "their agenda to develop the community's social, physical, economic, and political infrastructure." They reported that these relationships can be difficult to sustain. The schools are driven by the demands of accountability and do not understand how the community can assist; and the partners do not understand the "magnitude of the challenge" of trying to improve academic achievement.

The literature also reveals that some believe an overarching definition of "partnership" is impossible to develop and that partnerships should be cast in terms of typologies or taxonomy. For example, through his NSF MSP grant, Kingsley (2005) has been working on the identification of critical factors for evaluating STEM partnerships. Kingsley asked a panel of experts to define partnerships. Their definitions fell into five major categories: 1) *student-focused reform partnerships* that framed partnerships as "a reform movement that brings together the resources of a community and educational institutions to strengthen teacher performance and close the achievement gap of students in low-performing schools;" 2) *process partnerships* that "focus on the way in which organizations and institutions interact with one another…great emphasis upon trust and mutuality of communication and resource exchanges;" 3) *institutional partnerships* that focus on the "structural alignment of organizations that are brought to bear upon the challenges of STEM education…greater emphasis was also placed on the complementarity

[5] North (1990) defined organizations as purposive entities that have a formal structure and goal to achieve particular objectives within the opportunities and constraints afforded by the institutional framework of society.

of strategic goals across organizations;" 4) *professional partnerships* that "focus on the shared sense of professional practice and emphasizes the partnership as a manifestation or, in some cases, a catalyst for a learning community linking K-12 and institutions of higher education in math and science;" and 5) *partnerships are institutions* who hold "the partnership as a distinctive institution that then serves as a clearinghouse and point of connection among institutions with a stake in STEM education."

Many partnership constructs derive from the world of business and management. In defining collaborations, the business literature distinguishes between transactions and alliances. Ariño et al. (1999) define an alliance as a formal agreement between two or more business organizations to pursue a set of private and common goals. Ghere (2001) characterizes public-private partnerships as "long-term ventures that involve numerous financing and responsibility-sharing agreements that can be aptly discussed in terms of choices that arise in the contexts of interdependence and imperfect information." Linder, (2000) states that public-private partnerships further require that each partner acquire, adopt, or adapt characteristics and points of view of the other partner(s) "that once defined and stabilized the identities of their counterparts."

Savas (2000) believes that public-private partnerships can be thought of in three different ways. First, this type of partnership can be used to describe an arrangement in which the partners form a union to produce and deliver goods and services. Second, it can be used to describe "complex, multipartner, privatized, infrastructure projects." Third, it can refer to corporations exceeding their usual marketplace role and becoming involved in schools, etc. Kettl hypothesizes that private partnerships with the government bring three key issues to the forefront. First, when the government partners with a private supplier of services, the government is essentially relying on "private partners to do public work," which has resulted in a new form of public management. Second, this new form of management is far from uniform because of the "highly variable" relationships, which require unique and directed management approaches. Third, the role of the government has changed in that it is now "less the producer of goods and services and more the supervisor of proxies who do the actual work" (Kettl, 1993 and 1988; Mosher, 1980; Salamon, 1981).

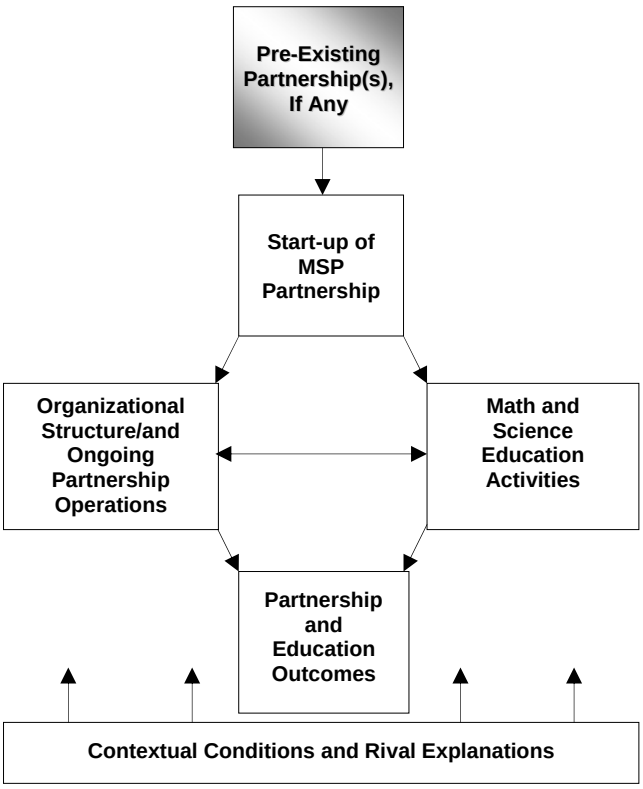
Oliver (1990) makes a distinction between partnerships and interorganizational relationships (IORs). He defines IORs as "the relatively enduring transactions, flows, and linkages that occur among or between an organization and one or more organizations in its environment." Oliver further describes six contingences of relationship formation (or reasons why organizations choose to enter into relationships with one another):
1) necessity; 2) asymmetry; 3) reciprocity; 4) efficiency; 5) stability; and 6) legitimacy.

These various definitions have in common the concept of collaboration among different entities towards a shared goal, where the outcomes of the partnerships as a whole are greater than the sum of what the individual partners contribute (Brinkerhoff, 2002).

2.2 ROLE OF PRE-EXISTING PARTNERSHIPS, IF ANY

Pre-existing Relationships. When pre-existing partnerships or relationships exist, they can provide a foundation of familiarity, shared interest, mutual commitment, and trust, which therefore may accelerate the rate of implementation of new grants while facilitating start-up and also the partnership process. In many instances, successful partnerships and relationships are sustained from grant to grant. In these cases, those lasting beyond the grant period usually have a combination of individual and institutional support focused on developing and sustaining the relationship (Phillips, et al., 2004).

ASSESSING PARTNERSHIPS: AN EXAMPLE OF SEQUENTIAL PHASES



The general consensus in the literature is that to be successful, partners should either have a pre-existing relationship or be able to devote time during the initial planning phases getting to know one another and building a relationship. However, sometimes the funding agency does not view this step as necessary or does not believe that a grant can allot the time to do so (Seifer and Krauel, 2003).

Rackham et al. (1996) specified three key areas that are consistently correlated with successful partnerships: 1) impact; 2) intimacy; and 3) vision.[6] Of these three, intimacy is relevant to pre-existing partnerships because it denotes the level of closeness of the participants in the partnership and how well they relate to each other. Pre-existing partnerships would have developed and attained a certain level of intimacy that impacts the partnership as a whole.

Alternatively, pre-existing partnerships or relationships may inhibit the pace of implementation due to previously established institutional patterns and behaviors. For example, partners may not agree or fully support a new partnership's new leadership

[6] "Impact" pertains to the partnership's ability to produce results and add value. "Intimacy" is how closely associated the partners within the partnership are. "Vision" refers to a shared or common idea about what the partnership can achieve and how it will do so.

(assuming that it is the same), new operational components, new overall vision, or new direction. Further, partners may perceive that they are not being dealt with fairly or are not equally represented at the table, compared to their earlier roles. Partners also may feel strain with regard to their own internal economic and financial priorities that may not align with that of the overall partnership. Given these historically ingrained patterns and sentiments, the partnership may suffer because these issues carry forward to the new undertaking.

ASSESSING PARTNERSHIPS:
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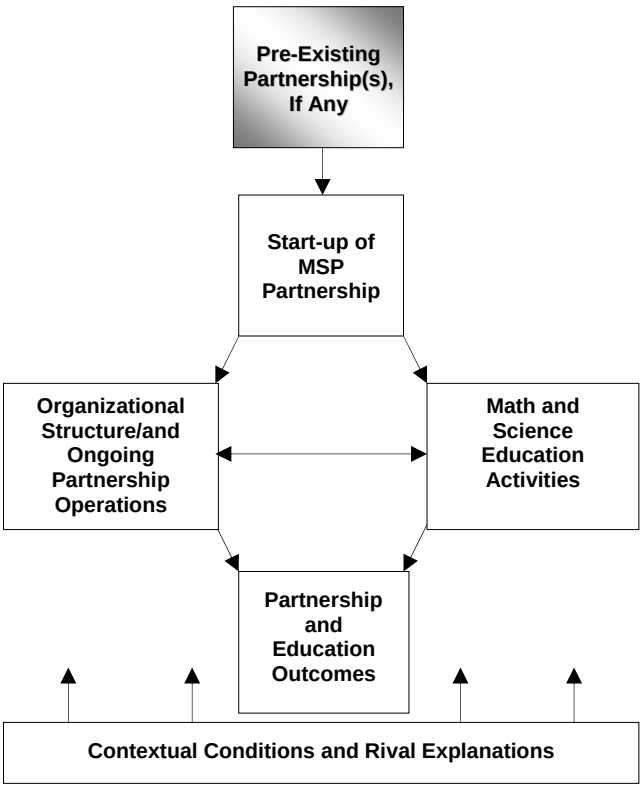


Of the MSP Program comprehensive (cohorts I and II), targeted (cohorts I, II, and III), and institute (cohorts II and III) awards, some partnerships and/or individuals within the partnerships have received prior NSF funding.

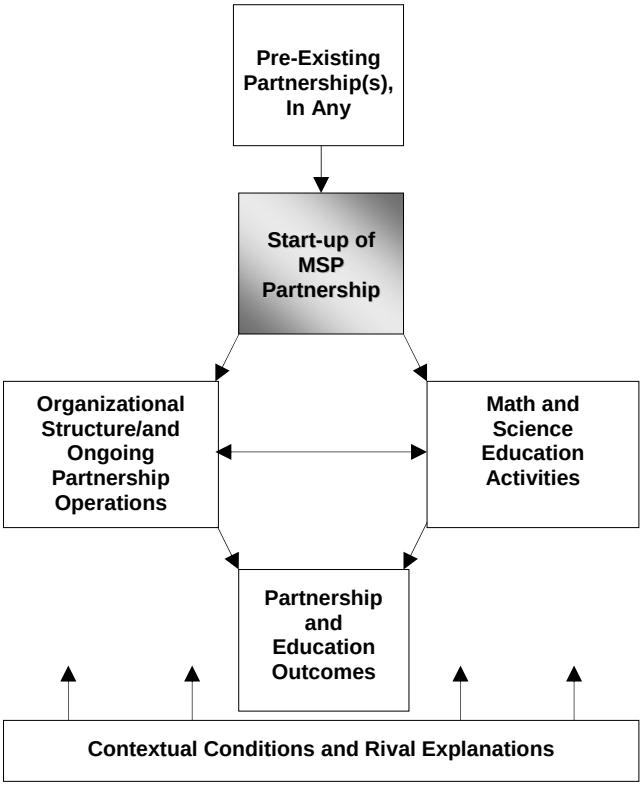
Since not all of the MSP Program's grantees had pre-existing partnership(s), the MSP Program did allow for the development of partnerships that seemingly would not have existed without it. It remains unclear at this juncture in the evaluation whether these partnerships formed solely to apply for the grant award or formed for another reason. It would be reasonable to speculate that the partners would have had prior interactions, knowledge of one another, and shown a willingness to commit to a joint endeavor. Moreover, all MSP partnerships have engaged in important partnering activities in preparing their MSP proposals. From this standpoint, the timing of the partnerships' startup predates the eventual MSP award, receipt of which in turn might be construed as the first significant partnering accomplishment.

Community Readiness. When examining the context of the pre-existing relationship it is important to consider not only the partnership's readiness but the community's as well. For the MSP partnerships, readiness among the K-12 districts and their communities—parents, businesses, and community organizations—would have been a relevant condition. Community readiness is generally described as a critical prerequisite to assessing a partnership's success (Birkby, 2003; Drug Strategies,

2001; Goodman, et al., 1996; Wolff, 2001). Goodman et al. (1996) used a social ecological approach to examine community-based interventions—interventions consisting of applying multiple strategies across multiple levels of a community. They found that the selection of effective interventions was in part dependent on the community's readiness to address the concern.

Wolff (2001) considers the state of the community prior to the creation of the coalition to be critical. Factors that increase readiness include: motivation from within the community, positive prior history with collaborative efforts, and existing leadership. Factors that can impede readiness include unresolved turf wars and a condition that he describes as being "overcoalitioned." Drug Strategies (2001) found that it is helpful, especially in the initial stages of the coalition, to have what they term a critical mass of members with social capital, namely: ready access to businesses, funding sources, media, and other major community institutions.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Gouvis Roman et al. (2002) identify a number of positive and negative influences on a community's readiness to participate in a community justice partnership. These include the capacity of the organizational partners; prior history of collaborations in the community; the existence of politics or turf wars; funding history; partnership over-saturation; and the community's willingness to evolve and change.

2.3 MSP START-UP OF MSP PARTNERSHIP

Start-up of the partnerships actually began during the application phase of the grant (prior to award). In terms of start-up activities for partnerships, the research literature identifies several guidelines for forming effective partnerships.

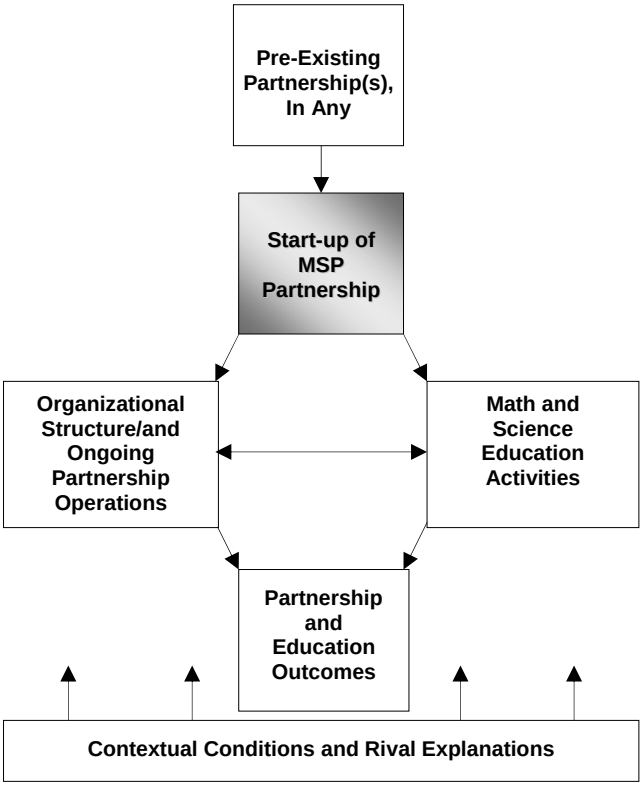
Of these dimensions, the following important components will be reviewed:

- Composition and size of the partnership;

- Size of the region covered by the partnership; and

- Goals, objectives, values, and mission of the partnership.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Composition and Size of Partnership. There appears to be consensus that inclusive and diverse memberships are key principles to building a successful partnership (Birkby, 2003; Drug Strategies, 2001; Kumpfer and Chavez, 2000; Wolff, 1997). Inclusive in this context means that all members who endorse the coalition's mission should be able to join, and the two power extremes must be invited—the most powerful as well as the least powerful (Wolff, 1997). Birkby adds that successful coalitions have ongoing recruitment efforts and pay attention to the retention of existing members.

Kumpfer and Chavez (2000) report that when the main purpose of the partnership is to establish and maintain broad-based support for the effort, it is important to have partners represent all segments of the community so that the range of community norms can be addressed.

In examining community justice partnerships, Gouvis Roman et al. (2002) write, "Because community justice initiatives aim to articulate the voice of the community and improve quality of life for everyone that uses or provides resources to the community, the range of stakeholders is broad."

As of the award period 2003-2004, the MSPs were composed of a diverse range of partners representing IHEs, LEAs, and the private and public sectors. As a requirement of the grant, the partnerships must include at least one IHE or other eligible nonprofit and one or more LEAs. Partnerships may further include state education agencies (SEAs) and for-profit entities. As mentioned earlier in this report, partners agree to a

certain level of commitment in terms of responsibility and accountability at the outset of the grant (termed core or non-core partner). Exhibit 2 provides an illustrative example from the North Cascades and Olympic Science Partnership of the types of partners commonly aligned for this program. This particular partnership, for instance, is composed of five IHEs (all of which are core), 28 LEAs (all of which are core), three SEAs, and one foundation.

As of the award period 2003-2004, the MSPs partnered with a number of prominent businesses. Businesses are important partners in MSPs, both for their engagement in the work of the partnerships themselves and for their perspectives on STEM preparation of the workforce. MSPs have partnered with a number of corporations and businesses, as well as with local Chambers of Commerce.

The following are illustrative examples of partnerships that existed between MSPs and business:

- Appalachian Mathematics and Science Partnership: Kentucky Science and Technology Corporation;
- East Alabama Partnership for the Improvement of Mathematics Education: Blue Cross/Blue Shield;
- Mathematics and Science Partnership of Greater Philadelphia: WHYY, Inc.;
- Merck Institute for Science Education: Merck & Company, Inc.;
- Partnership for Student Success in Science: Agilent Technologies and Synopsys, Inc.;
- Project Pathways: A Math and Science Partnership Program for Arizona Targeted Project Track: Intel Corporation;
- Puerto Rico Math and Science Partnership: Texas Instruments, Inc. and the Ford Motor Company;
- SUNY-Brockport and Rochester City: Texas Instruments, Inc. and Xerox Corporation;

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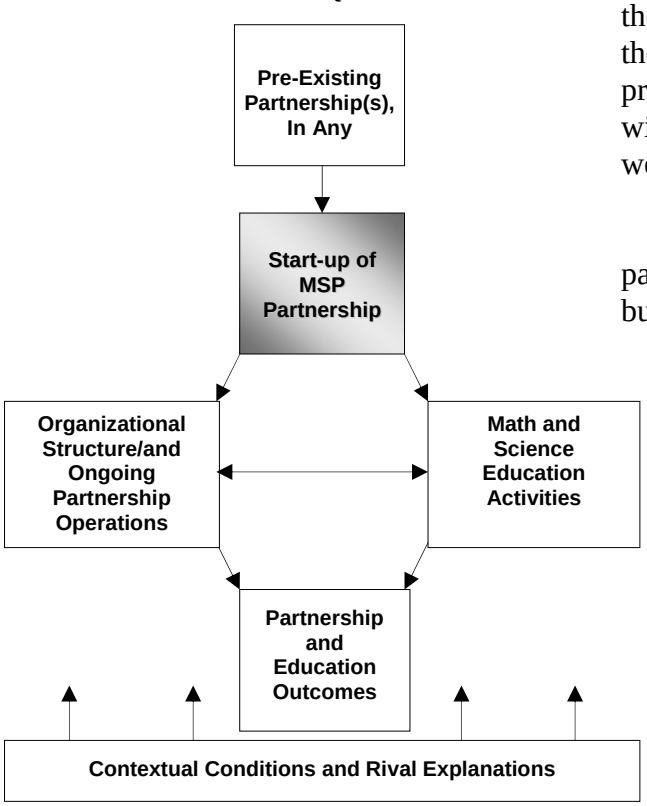

- Teachers and Scientists Collaborating: Progress Energy and GlaxoSmithKline; and
- Vermont Mathematics Partnership: IBM Corporation.

In addition, multiple MSPs, including The Milwaukee Mathematics Partnership and the El Paso Math and Science Partnership, involved Chambers of Commerce as partners.

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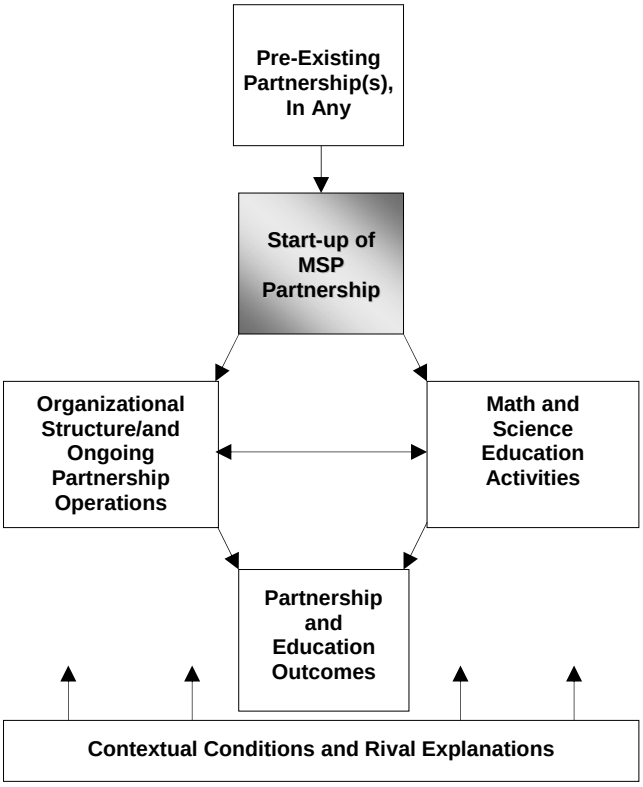


All of the comprehensive (cohorts I and II), targeted (cohorts I, II, and III), and institute (cohorts II and III) awards' partnerships have one Principal Investigator[7] and multiple co-Principal Investigators.[8] Exhibit 3 lists the Principal Investigators and their institutional affiliations.

All but eight of the Principal Investigators are affiliated with an IHE. The eight Principal Investigators not associated with an IHE come from a variety of places including a science center, school district, national-level association, and county level education service center. The majority of the co-Principal Investigators is associated with an IHE.[9]

A subsequent phase of the substudy will examine if the organizational location of the Principal Investigator has an impact on the partnership.

Depending on a partnership's goals and objectives, SEAs can be a critical component of the partnership equation. These state-level agencies are involved and ultimately responsible for the roll-out of new state assessments—therefore they know the content and the timing of these events—and they help craft state policies. Six of the partnerships

[7] NSF allows one Principal Investigator per award but multiple co-Principal Investigators.
[8] The partnership with the least number of partners has only one co-Principal Investigator.
[9] The first two NSF MSP solicitations did not require that the Principal Investigator come from an IHE; the third solicitation had this requirement.

include SEAs as partners (some have multiple SEA partners).

The following are among others serving as SEAs partners:

- Georgia Department of Education;
- North Carolina Department of Public Instruction;
- North Carolina Science, Mathematics, and Technology Education Center;
- Vermont Department of Education;
- New York State Education Department; and
- Washington State Educational Service Districts.

Exhibit 2

ILLUSTRATIVE TYPES OF MSP PARTNERS:

NORTH CASCADES AND OLYMPIC SCIENCE PARTNERSHIP

IHEs

1. Everett Community College (core)

2. Whatcom Community College (core)

3. Skagit Valley College (core)

4. Northwest Indian College (core)

5. Western Washington University (core) (*George Nelson, PI, Director of Science, Mathematics, and Technology Education programs;* Scott Linneman, Co-PI, Asst. Professor of Geology & Science Education; *Chris Ohana, Co-PI, Asst. Professor of Elementary Education*)

DISTRICTS

1. Anacortes (core)
2. Bainbridge Island (core)
3. Bellingham #501 (core)
4. Blaine (core)
5. Bremerton (core)
6. Brinnon (core)
7. Burlington-Edison (core)
8. Chimacum (core)
9. Concrete (core)
10. Conway (core)
11. Cape Flattery (core)
12. Crescent (core)
13. Ferndale (core)
14. La Conner (core)
15. Lummi Tribal (core)
16. Lynden (core)
17. Meridan (core)
18. Mount Baker (core)
19. Mount Vernon (core)
20. Nooksack (core)
21. North Mason (core)
22. Port Angeles (core)
23. Port Townsend (core)
24. Queets-Clearwater (core)
25. Quilcene (core)
26. Quillayute (core)
27. Seedro-Wolley (core)
28. Sequim (core)

STATE

1. 2 Washington State Educational Service Districts (supporting partners)

2. Washington State MESA (Math, Engineering, and Science Achievement) (supporting partner)

3. Washington State LASER (Leadership and Assistance for Science Education Reform) (supporting partner)

OTHER

1. Naval Undersea Museum Foundation (supporting partner)

Exhibit 3

PRINCIPAL INVESTIGATORS FOR NSF-MSP GRANTEES

GRANT NO. AND TITLE *	PI NAME	IHE NAME/SCHOOL	CARNEGIE CLASSIF.**	PI TITLE
COMPREHENSIVE: Cohort I				
1. North Carolina Partnership for Improving Math & Science	Verna L. Holoman	- University of North Carolina, Chapel Hill - General Administration Office	**8**	Executive Director, North Carolina Mathematics & Science Education Network
2. New Jersey Math Science Partnership	William Firestone	- Rutgers University, New Brunswick - Graduate School of Education	**8**	Professor
3. Appalachian Mathematics & Science Partnership	Paul Eakin	- University of Kentucky - School of Arts and Sciences	**8**	Professor of Mathematics
4. El Paso Math and Science Partnership	Susana Navarro	- University of Texas at El Paso - Hispanic Health Disparities Research Center	**9**	Executive Director
5. Mathematics and Science Partnership: FOCUS Faculty Outreach Collaborations Uniting Scientists, Students and Schools	Ronald Stern	- University of California-Irvine - School of Physical Sciences	**8**	Dean, School of Physical Sciences, Professor of Mathematics
6. SUPER STEM Education	Anne Spence	- University of Maryland, Baltimore - Engineering & Information Tech.	**9**	Assistant Professor, Engineering and Computer Science
COMPREHENSIVE: Cohort II				
7. System-Wide Change for All Learners and Educators (SCALE)	Terrence Millar	- University of Wisconsin Madison, Wisconsin Center for Education Research - Physical Sciences Graduate School	**8**	Project Director, Associate Dean for the Physical Sciences Graduate School
8. Puerto Rico Math and Science Partnership	Josefina Arce	- University of Puerto Rico, Rio Piedras - School of Arts and Sciences	**9**	Professor of Chemistry
9. Promoting Rigorous Outcomes in Mathematics/Science Education (PROM/SE)	Joan Ferrini-Mundy	- Michigan State University - Natural Sciences	**8**	Professor of Teacher Ed. & Mathematics, Associate Dean for Science & Mathematics Ed. in the College of Natural Science, Outreach and Director of the Division of Science & Mathematics Ed.
10. Milwaukee Mathematics Partnerships: Sharing Leadership for Student Success	DeAnn Huinker	- University of Wisconsin-Milwaukee - College of Natural Sciences	**9**	Director, Center for Mathematics and Science Ed. Research
11. Math and Science Partnership of Southwest Pennsylvania	Nancy Bunt	- Allegheny Intermediate Unit - Professional Development and Accountability	**N/A**	Managing Director, Math and Science Collaborative, Carnegie Science Center
12. Partnership for Reform in Science and Mathematics (PRISM)	Jen Kettlewell	- University System of Georgia - Academic and Fiscal Affairs	**N/A**	Associate Vice Chancellor, P-16 Initiatives
TARGETED: Cohort I				
13. Mathematical ACTS	Richard Cardullo	- University of California-Riverside - Natural & Agricultural Sciences	**8**	Professor & Chair, Dept. of Biology
14. Stark County Math and Science Partnership	Robert Bayer	- Stark County Educational Service Center - Curriculum and Instruction	**N/A**	Mathematics Consultant
15. Teachers and Scientists Collaborating	Gary Ybarra	- Duke University - Pratt School of Engineering	**8**	Director of Engineering K-Ph.D. Program, Associate Professor of the Practice, Department of Electrical & Computer Engineering
16. Vermont Mathematics Partnership	Kenneth Gross	- University of Vermont - Engineering and Mathematics	**9**	Director of Vermont Mathematics Initiative, Professor of Mathematics and Education
17. Cleveland Math and Science Partnership	Bill Badders	- Cleveland Municipal School District	**N/A**	Director of Mathematics and Science Partnerships
18. Alliance for Improvement of Mathematics Skills	Lee Sloan	- Del Mar College - Occupational Education and Technology	**1**	Dean of Occupational Ed. & Tech
19. St. Louis Inner Ring Cooperative: Intervention Case Studies in K-12 Math & Science	Edward Macias	- Washington University, St. Louis - School of Arts and Sciences	**8**	Executive Vice Chancellor, Dean of Arts & Sciences
20. Texas Middle and Secondary Mathematics Project	Jasper Adams	- Stephen F. Austin State University - Science and Mathematics	**11**	Chair-Department of Mathematics and Statistics
21. e-Mentoring for Student Success	Gerald Wheeler	- National Science Teachers Association	**N/A**	NSTA Executive Director
23. Indiana Mathematics Initiative Partnership	Daniel Maki	- Indiana University, Bloomington - School of Arts and Sciences	**8**	Chair of Mathematics Department
24. Vertically Integrated Partnerships K-16	Nancy Shapiro	- University System of MD† - Community Psychiatry General	**17**	Associate Vice Chancellor for Acad. Affairs

(Continued on Next Page)

Exhibit 3 (Continued)

GRANT NO. AND TITLE *	PI NAME	IHE NAME/SCHOOL	CARNEGIE CLASSIF.**	PI TITLE
25. PRIME: Promoting Reflective Inquiry in Mathematics Education	James Parry	- Black Hills Special Services Cooperative	**N/A**	Director of Technology and Innovations in Education (TIE)
26. Deepening Everyone's Math Content Knowledge: Mathematicians, Teachers, Parents, Students, & Community	Judith Fonzi	- University of Rochester - Graduate School of Education and Human Development	**8**	Assistant Professor, Teaching and Curriculum, Director of Warner Center for Professional Dev. & Ed. Reform
TARGETED: Cohort II				
27. SUNY-Brockport College and Rochester City Math & Science Partnership	Osman Yasar	- SUNY College of Brockport - Letters and Science	**11**	Professor & Chair, Department of Computational Science
28. Revitalizing Algebra	Diane Resek	- San Francisco State University - College of Science and Engineering	**11**	Professor of Mathematics
29. Teachers Assisting Students to Excel in Learning Mathematics	David Pagni	- California State University, Fullerton Foundation - College of Natural Sciences & Mathematics	**11**	Professor–Mathematics
30. Focus on Mathematics	Glenn Stevens	- Boston University - School of Arts and Sciences	**8**	Professor-Department of Mathematics & Statistics
31. Consortium for Achievement in Mathematics and Science	Carlo Parravano	- Merck Institute for Science Education	**N/A**	Executive Director
32. The Mathematics and Science Partnership of Greater Philadelphia	F. Joseph Merlino	- LaSalle University - School of Arts and Sciences	**10**	Director of Greater Philadelphia Science and Mathematics
33. The MSTP Project: Mathematics and Science	David Burghardt	- Hofstra University - School of Arts and Sciences	**10**	Professor of Mechanical Engineering & Department Chair, Engineering
34. The East Alabama Partnership for the Improvement of Mathematics Education	W. Gary Martin	- Auburn University - Department of Curriculum and Teaching	**9**	Professor, Department of Curriculum and Teaching
35. Partnership for Student Success in Science	Kurt McMullin	- San Jose State University - Colleges of Engineering and Education	**11**	Associate Professor of Civil Engineering & Applied Mechanics
36. North Cascades and Olympic Science Partnership	George Nelson	- Western Washington University - Science and Technology	**11**	Director of Science, Mathematics, and Technology Education Programs
TARGETED: Cohort III				
37. Boston Science Partnership	Hannah Sevian	- University of Massachusetts Boston - Graduate College of Education and College of Science and Mathematics	**10**	Assistant Professor, Jointly Appointed in Curriculum & Instruction; Department of Chemistry
38. Math & Science Partnership in New York City	Pamela Mills	- CUNY, Hunter College - School of Arts and Sciences	**11**	Professor of Chemistry
39. Project Pathways: A Math and Science Partnership Program for Arizona Targeted Project Track	Marilyn Carlson	- Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET) at Arizona State University - School of Liberal Arts and Sciences	**12**	Associate Professor of Mathematics
40. Rocky Mountain Middle School Math Science Partnership	Doris Kimbrough	- University of Colorado at Denver -School of Liberal Arts and Sciences	**8**	Associate Professor, Chemistry
41. A Greater Birmingham Partnership: Building Communities of Learners and Leaders in Middle School Mathematics	Bernadette Mullins	- Birmingham-Southern College - Science and Mathematics	**14**	Associate Professor of Mathematics
INSTIITUTE: Cohort II				
42. Institute for Advance Study/Park City Mathematics Institute (PCMI)	Phillip Griffiths	- Institute for Advance Study - School of Mathematics	**N/A**	Professor, School of Mathematics
INSTITUTE: Cohort III				
43. The Rice University Mathematics Leadership Institute	Anne Papkonstantino	- William Marsh Rice University - Weiss School of Natural Science	**8**	Director of Rice University Mathematics Project, Professor of Mathematics
44. NSF Institute: Preparing Virginia's Mathematics Specialist	William Haver	- Virginia Commonwealth University a - Humanities and Sciences	**9**	Professor, Mathematics and Applied Mathematics
45. Standards Mapped Graduate Education and Mentoring	Heinz-Otto Peitgen	- Florida Atlantic University - Science	**9**	Professor of Mathematics and Biomedical Science
46. Univ. of Pennsylvania Science Teachers Institute	Hai-Lung Dai	- University of Pennsylvania - School of Arts and Sciences	**8**	Professor of Chemistry
47. The Fulcrum Institute for Education in Science	Judah Schwartz	- Tufts University - School of Arts and Sciences	**8**	Visiting Professor of Ed., Research Professor of Physics and Astronomy
48. Math in the Middle Institute Partnership	Jim Lewis	- University of Nebraska – Lincoln -School of Arts and Sciences	**8**	Professor, Department of Mathematics
49. Oregon Mathematics Leadership Institute Partnership	Thomas Dick	- Oregon State University - School of Education	**8**	Coordinator of Collegiate Mathematics Education

(Continued on Next Page)

Exhibit 3 (Continued)

* Grant No. 22 ended early by mutual agreement.

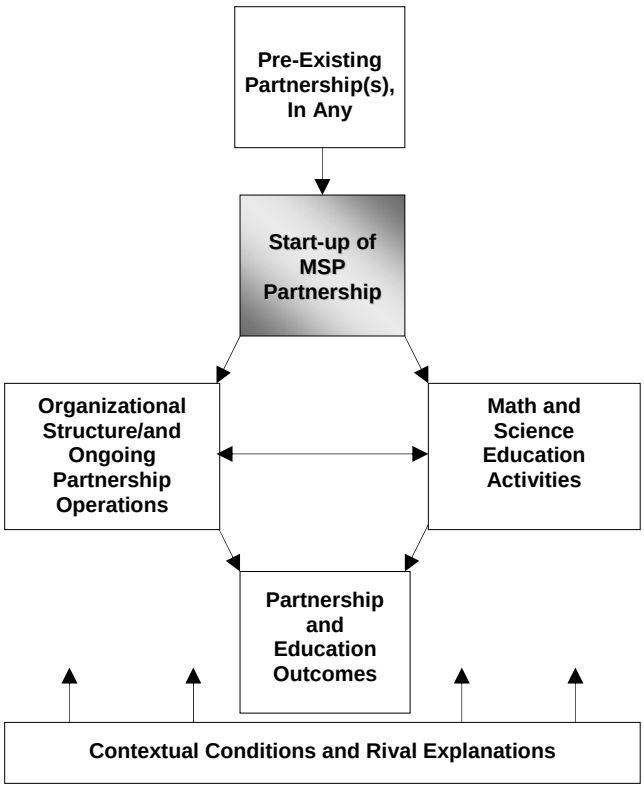
† Encompasses multiple universities, research institutions, and a system office in Maryland.

** Carnegie Classification Code Legend:
1 = Assoc/Pub-R-L: Associate's--Public Rural-serving Large
2 = Assoc/Pub-R-M: Associate's--Public Rural-serving Medium
3 = Assoc/Pub-R-S: Associate's--Public Rural-serving Small
4 = Assoc/Pub-S-MC: Associate's--Public Suburban-serving Multicampus
5 = Assoc/Pub-S-SC: Associate's--Public Suburban-serving Single Campus
6 = Assoc/Pub-U-MC: Associate's--Public Urban-serving Multicampus
7 = Assoc/Pub-U-SC: Associate's--Public Urban-serving Single Campus
8 = RU/VH: Research Universities (very high research activity)
9 = RU/H: Research Universities (high research activity)
10 = DRU: Doctoral/Research Universities
11 = Master's L: Master's Colleges and Universities (larger programs)
12 = Master's M: Master's Colleges and Universities (medium programs)
13 = Master's S: Master's Colleges and Universities (smaller programs)
14 = Bac/A&S: Baccalaureate Colleges--Arts & Sciences
15 = Bac/Diverse: Baccalaureate Colleges--Diverse Fields
16 = Tribal: Tribal Colleges
17 = Unkown

Source: Carnegie Foundation for the Advancement of Teaching, *Carnegie Classifications Data File*, May 30, 2006 edition.

As of the award period 2003-2004, in terms of the median number of partners within the partnerships in the comprehensive (cohorts I and II), targeted (cohorts I, II, and III), and institute (cohorts II and III) awards, Exhibit 4 shows that comprehensives tend to have the highest number of IHEs and districts involved (2.5 and 12 respectively), while the targeted and institutes are slightly lower, but approximately equal across the same categories. All three types of awards had a median of one "other" partner. The institute shows 0.5 due to the fact that some of the partnerships did not include partners in the category of "other."

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



The size of the partnerships varies dramatically. The smallest partnership has only two partners and the largest has 64 partners. The size of region covered, or the geographic dispersion, is significant in some cases as well. For example, as Exhibit 5 illustrates, only seven partnerships have all of the partners located in the same county; 31 are in more than one county; and 10 are in more than one state. The most geographically expansive partnership has partners located in four cities in four states.

Approximately one-half of the district partners were located in an urban setting; the majority of the remaining district partners were located in less densely populated settings (Silverstein, et al., 2005). In reviewing a random sample of six MSP grants, all of the partnerships, except for one, enacted the partnership with the partners originally proposed.[10] In the one partnership that differed from the original set of partners proposed (The Mathematics and Science Partnership of Greater Philadelphia), it enacted one district-level partner that was not proposed and did not enact one district-level partner that was proposed. See Appendix B for a comparison of the proposed versus enacted partners for the six partnerships.

Information contained in this section is summarized in tabular format in Appendix C.

[10] The six MSP grants include: 1) New Jersey Math Science Partnership; 2) El Paso Math and Science Partnership; 3) Vermont Mathematics Partnership; 4) The Mathematics and Science Partnership of Greater Philadelphia; 5) Boston Science Partnership; and 6) A Greater Birmingham Partnership: Building Communities of Learners and Leaders in Middle School Mathematics.

Exhibit 4

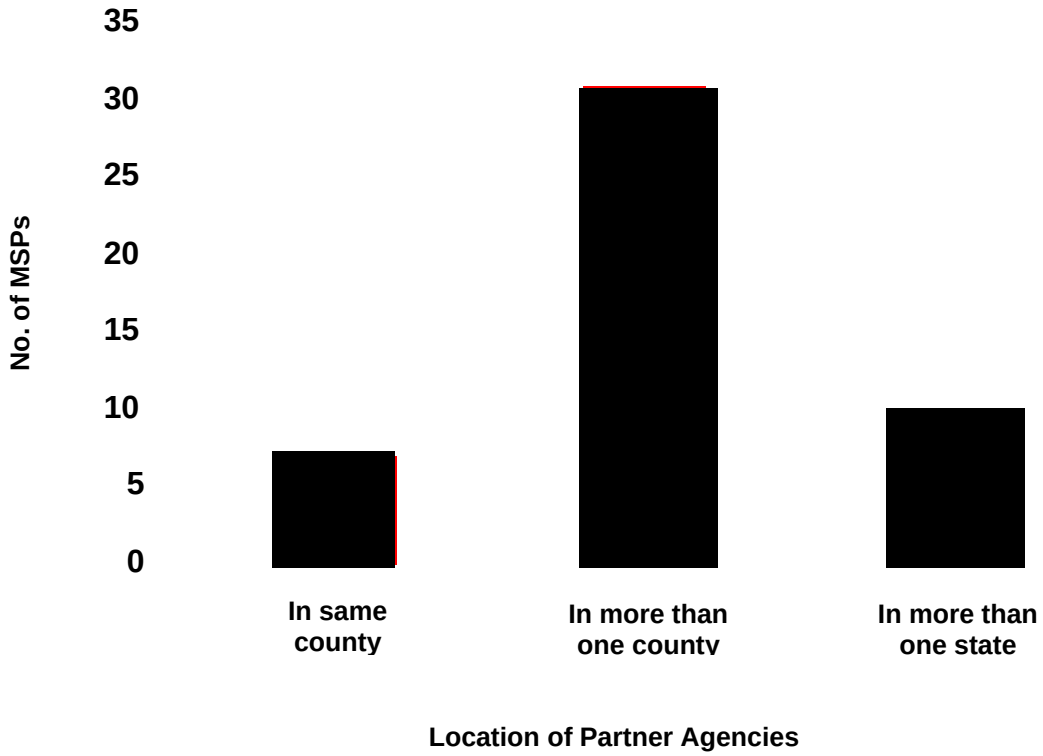
MEDIAN NUMBER OF PARTNERS, BY AWARD

Type of Award	Type of Partner		
	Districts	IHEs	Others
Comprehensive: n = 12	12	2.5	1
Targeted: n = 28	5.5	2	1
Institute: n = 8	5.5	1	0.5
All MSPs: n = 48	6.5	2	1

Sources: **Math and Science Partnership Program, National Science Foundation, 2004.**
The Math and Science Partnership Network, National Science Foundation, 2004, http://www.mspnet.org.
MSP Grantee Annual Reports

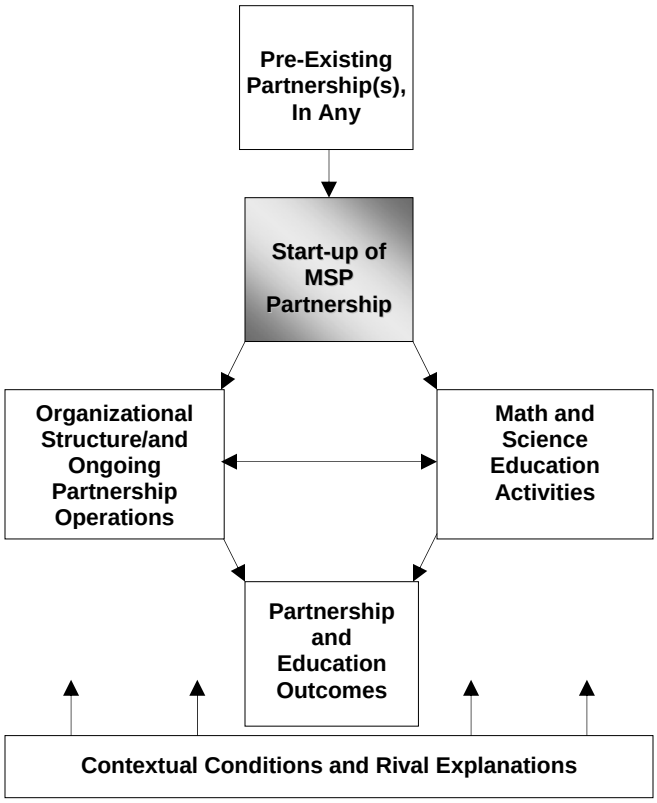
Exhibit 5

LOCATION OF PARTNERSHIPS



Note: This figure includes the Comprehensive, Targeted, and Institute awards. Not counted are the RETAs and any grant that might have not continued beyond a preliminary period.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Agreeing On Goals, Mission, and Values. Birkby (2003) uses the term "intentionality" to describe this dimension: "Clear plans, attainable goals, measurable objectives, and *community ownership* are critical to the success of the coalition." Kumpfer and Chavez report that each of five model partnerships that significantly reduced substance abuse had a comprehensive vision, covering all segments of the community and all aspects of community life, and a wide sharing of this vision, agreed upon by groups and citizens across the community.

Wolff (2001) speaks of "intentionality," which he describes as a common shared vision and mission. Intentionality also refers to "members' faith in themselves to tackle whatever issues come along." Wolff (1997) distinguishes between the self-interests of the various constituencies of a partnership and the shared mission and goals of the partnership, "Walking the tight rope between these agendas is critical to coalition success." Harms et al., (2001) describe a shared vision and mission as the foundation on which coalition actions are built.

All of the partnerships developed a set of goals and objectives and report to NSF their progress in meeting these (See Appendix D for a complete list of the partnerships' goals and objectives). In general, most of the goals express a high-level expectation and the objectives delineate how the goal will be achieved. For example, the Consortium for Achievement in Mathematics and Science has a primary goal (in italics) to: provide intensive, sustainable, systemic reform in four urban school districts with the vision that *all middle school students will understand and be able to apply key concepts in math and science*.

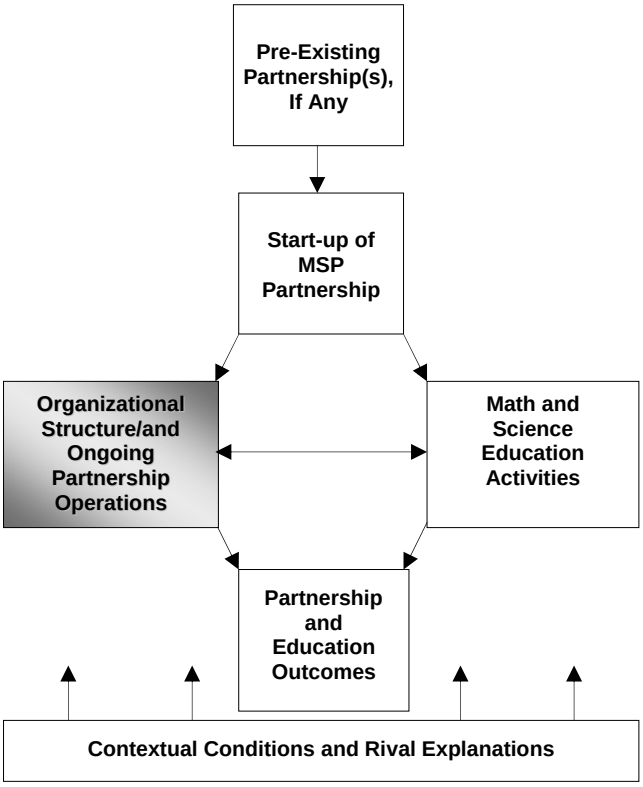
To achieve this goal they created the following objectives:

1. Implement challenging instructional programs;

2. Build professional capacity in schools, the university, Educational Testing Service, and Merck Institute for Science Education;
3. Develop leadership among teachers, administrators, and university faculty;
4. Develop a student-centered learning climate in every classroom; and
5. Build parent and community support.

As would be expected, some of the partnerships have revised their goals and objectives, or the timeline associated with them, based on their experiences during the first year of the grant.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



2.4 ONGOING OPERATIONS

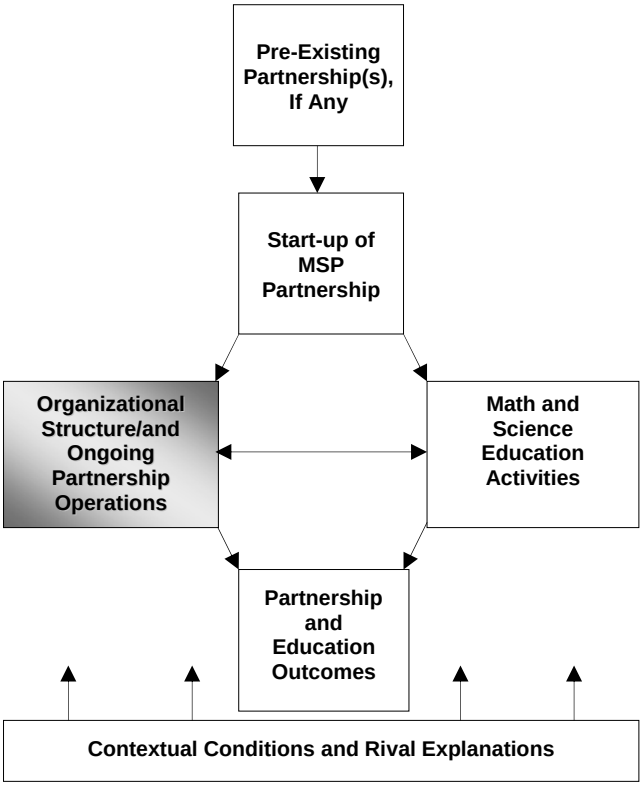
Once the partnership has been established there are several preliminary operational activities that should take place. Jasuja et al. (2005) define operational processes as "factors related to ongoing operational functioning of the coalition and including staff role, leadership, decisionmaking, communication, conflict, costs and benefits of participation, organizational climate, and capacity building." Among other things, the partnership needs to come to agreement on the development of an overall organizational structure, create an action plan and operational guidelines, identify key leadership, seek resources (staffing, facilities, etc.) to support the partnership, and create a mechanism to communicate effectively.

Developing An Organizational Structure. To be successful and sustainable in the long term, partnerships need not only have an organizational identity, but also a structure or planning mechanism and the necessary resources to perform their tasks effectively (Birkby, 2003; Gouvis Roman, et al., 2002; Holland, 2001; Metzler, 2003; Wolff, 1997; Wolff, 2001). For university-community partnerships, it is important that there be formal governance partnership structures, including community-campus advisory groups, and, at the university level, integration of partnership activities

into the curriculum and direct learning experience of the students (Holland, 2001).

Smock (1999), in reviewing partnerships developed during the 1990s, found structure to be an essential component of a successful partnership. Some organizations believed that to be inclusive and democratic, a partnership should keep formal structure to a minimum. Partnerships without structure experienced difficulties in start-up, recruitment, implementation, accountability, and communication. Moreover, rather than being inclusive, these partnerships were overwhelmed by a vocal minority.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Brinkerhoff (2002) finds that each partner's organizational identity and its unique strengths and resources form the foundation for partnership. It is important that each partner keep its unique organizational structure and goals. Organizational identity of each partner is key to the partnership's success. If it is lost, the partner loses its capacity to maximize its unique contribution. She further advocates that the partnership itself should develop an identity as it is:

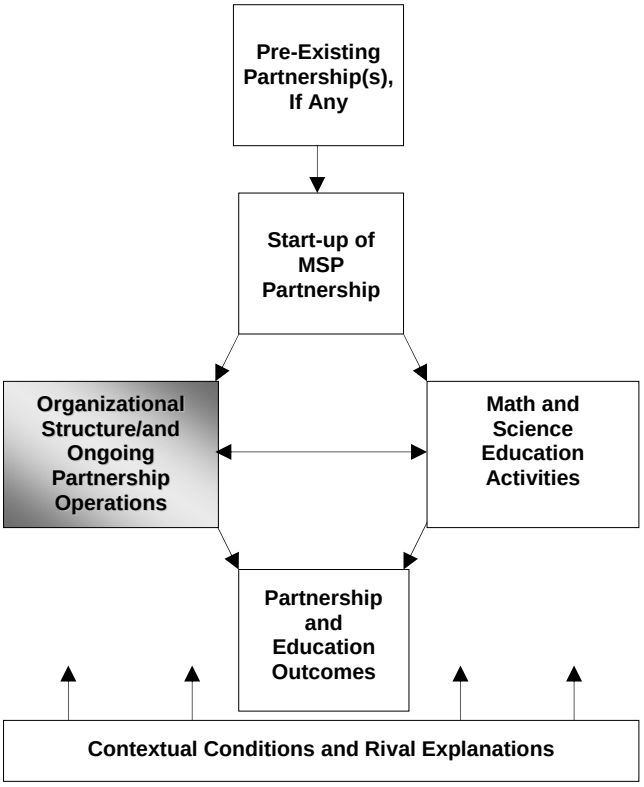
> "The glue that holds the partners together and forms the basis for legitimacy and values identification of major stakeholders. Partnership identity entails an identifiable organization culture, complete with processes and mechanisms reflective of the partnership's underlying values; a unique and identifiable mission, with associated comparative advantages and value-added; and a set of constituencies that go beyond the constituencies of individual partner organizations."

Maintaining identity is not easy. Researchers must learn to approach problems from the perspective of community members, while the community needs to understand the research perspective (Metzler, 2003). However, this does not

mean that partners should lose their organizational identity, culture, or perspective.

Gouvis Roman et al. (2002) find that partnerships are more likely to succeed if "partnership structures support multiple organizational contacts with clear lines of communication across organizations, as well as equal decisionmaking among community organizations and government agencies….Success appears likely to be achieved when both horizontal integration (among community organizations) and vertical integration (between community organizations and traditional power holders) are strong."

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Goodman et al. (1996) describe this stage of coalition development as the stage where turf issues are resolved. Unless these issues are addressed, the coalition will not have the ability to build capacity for action, the next stage of coalition readiness.

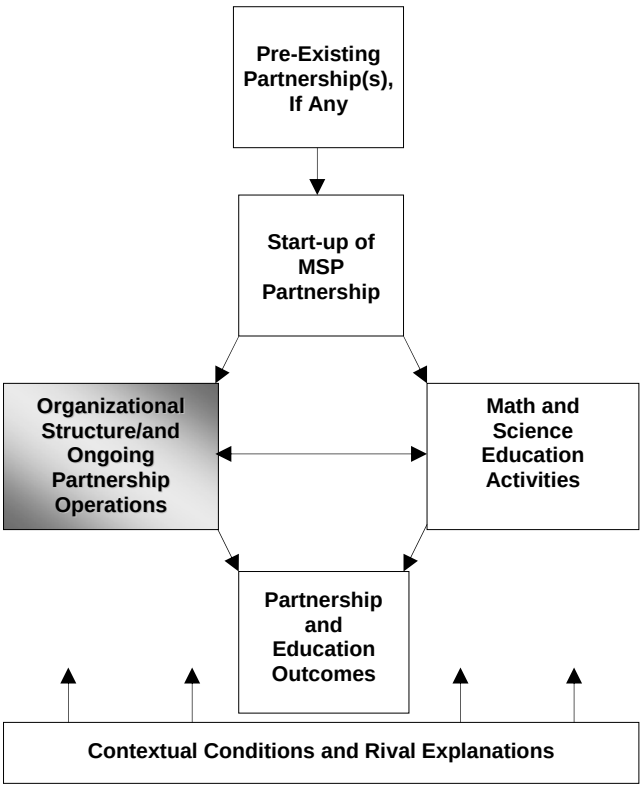
HUD's Office of University Partnerships (HUD, 2002) identifies five principal ways that universities can organize to work with community organizations: 1) centralized at top level of the administration with a university-wide commitment to the partnership; 2) decentralized to a specific department level; 3) located within interdisciplinary schools or centers; 4) organized by a separate nonprofit organization, jointly controlled by the university and the community partners; and 5) run in collaboration with other colleges and universities.

Setting Up and Implementing an Action Plan and Operational Guidelines. Developing an action plan and operational guidelines are important steps that cannot occur without prior readiness of the partners (Goodman, et al., 1996). Wolff (2001) emphasizes that a prerequisite to a good action plan is having goals and objectives that are "concrete, attainable, and, ultimately, measurable." He found that many coalitions fail to implement actions directed at bringing about the desired changes in the community. Rather, they become involved in internal readiness activities such as in-service

trainings and the like. All MSP awards are required to develop a strategic plan and an implementation plan.

As of the award period 2003-2004, the partnerships in the comprehensive (cohorts I and II), targeted (cohorts I, II, and III), and institute (cohorts II and III) awards have many formal agreements in place. These include articles of incorporation, memoranda of understanding, subcontract agreements, letters of support, and guiding principles.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



As but one example of how a partnership structured itself, The Consortium for Achievement in Mathematics and Science established a multi-tiered organizational system that allows for partner collaboration and communication. This includes a consortium management and oversight committee and a consortium planning and implementation team.

Qualities of the Partnering Relationship and Maintaining the Partnership. "Perhaps the greatest and unending challenge facing partnerships is the level of time and energy it takes to launch and maintain an effective partnership relationship" (Holland, et al., 2003).

The following partnership characteristics, culled from the literature, are associated with quality partnerships:

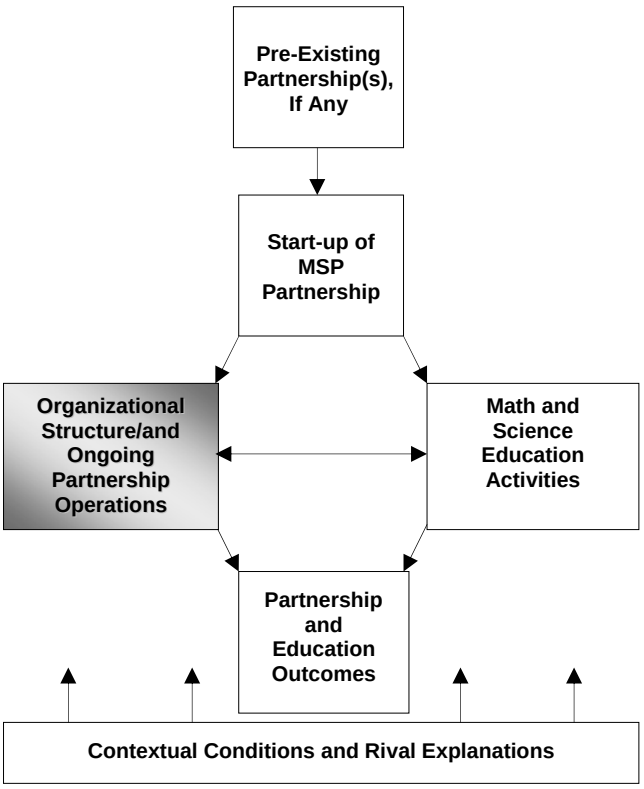
- Mutuality and trust;
- Leadership;
- Obtaining financial and other resources; and
- Collaboration and mechanisms of communication.

Mutuality and Trust. The concept of trust between organizations is difficult to define. Traditionally trust has been defined (and measured)

as a dimension of interpersonal relationships. More recently, trust is being studied as an aspect of the relationship between organizations and the public. In a paper on trust in organizations, the Institute for Public Relations at the University of Florida (Paine, 2003) discusses trust as a multi-dimensional concept:

> ***"Multi-Level***: Trust results from interactions that span co-worker, team, organizational, and inter-organizational alliances.
>
> ***Culturally-rooted***: Trust is closely tied to the norms, values, and beliefs of the organizational culture.
>
> ***Communication-based***: Trust is the outcome of communication behaviors, such as providing accurate information, giving explanations for decisions, and demonstrating sincere and appropriate openness.
>
> ***Dynamic***: Trust is constantly changing as it cycles through phases of building, destabilization, and dissolving.
>
> ***Multi-dimensional***: Trust consists of multiple factors at the cognitive, emotional and behavioral levels, all of which affect an individual's perceptions of trust."

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



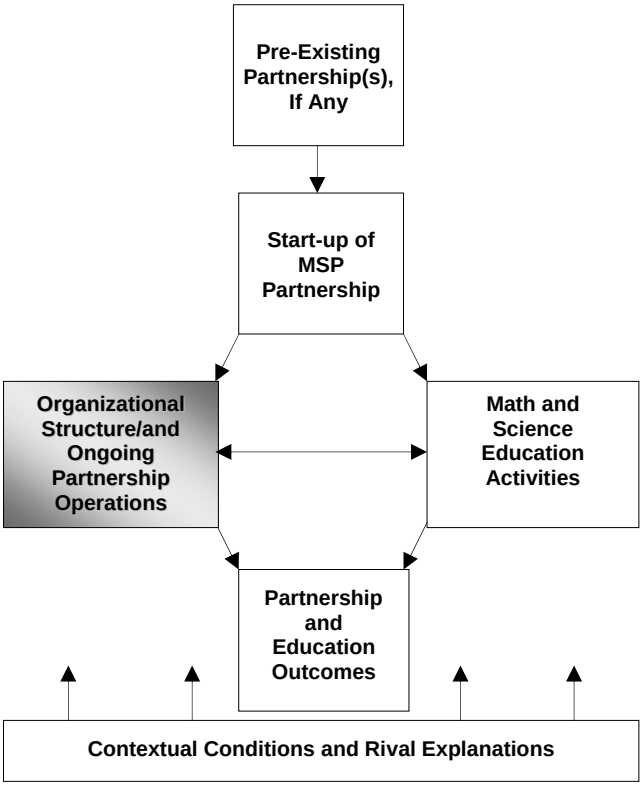
Paine discusses mutuality in the context of relationships between the organization and the public (or, in the case of partnerships, the community). She speaks of the importance to control mutuality: "For the most stable, positive relationship, organizations and publics must have some degree of control over each other." In other words, control of one party over the other decreases both trust and mutuality.

Ariño (1999) points out that trust requires the presence of an element of risk and a "degree of vulnerability;" there must be an exposure to potential loss or harm. "Trust does not involve blind faith, nor

is it particularly relevant in contexts involving certainty."

To Brinkerhoff (2002), mutuality "encompasses the spirit of partnership principles." It implies "horizontal, as opposed to hierarchical, coordination and accountability" and "equality in decisionmaking, as opposed to the domination of one or more partners." She lists the following indicators for mutuality: 1) equality in decisionmaking; 2) resource exchange—limited not just to financial resources but extending to managerial and technical skills, contacts, information and the like; 3) reciprocal, as opposed to hierarchical, accountability; 4) transparency in areas of common concern; 5) mutual respect based on the acceptance and recognition of each partner's contribution; and 6) degree of partner representation and participation in partnership activities.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



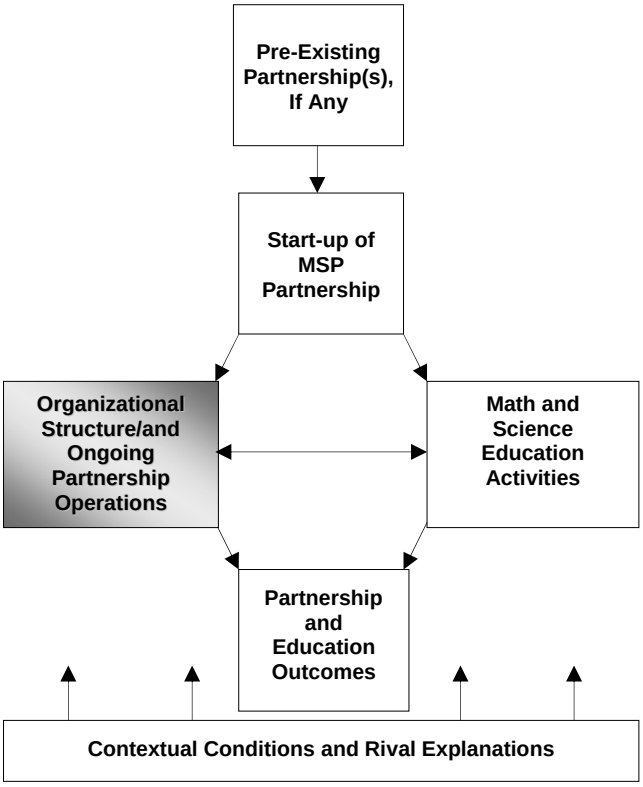
Metzler (2003) studied partnerships between researchers and the community in three urban settings (New York, Seattle, and Detroit). She found that in these urban settings, the "legacy of racism" posed a particular challenge to the principle of mutuality. Researchers and agency heads were usually Caucasians with advanced degrees, while community partners were often minorities with less formal education. Historical discrepancies in power and trust had to be overcome before the community could move from "community-as-advisor to the community-as-consultant to community-as-full-partner in all phases of research." She adds, "Trust, patience, commitment and willingness to compromise were necessary for growing trust and building partnerships."

Brownson et al. (2001) stress that part of the participatory process in community partnerships is looking at differences in culture, not only race and ethnicity, but also organizational culture. As an example, he cites, "A university…may be a hierarchical organization that may seem overly bureaucratic to community volunteers." Researchers

and community agencies may also have a different view of the same problem.

In the business and management literature, mutual trust is defined as the shared belief that individuals can depend on each other to achieve a common purpose. In an alliance, where the purpose is to get results that exceed what a transaction can do, mutual trust also means one can depend on the others to adapt as necessary. This involves more than keeping promises, because it entails changes that cannot be planned in advance (Lewis, 2000). Lewis lists eight conditions that must be present for trust to occur: 1) mutual need creates the opportunity; 2) interpersonal relationships make the connections; 3) joint leaders work closely together; 4) shared objectives guide performance; 5) safeguards encourage sharing of information and other resources; 6) commitment creates enthusiasm; 7) adaptable organizations support alignment; and 8) continuity sustains understanding.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



During the coming phases of this study, mutuality and trust will be examined through the collection of primary data from the partnerships.

Leadership. Kumpfer and Chavez (2000) stress the importance of having a strong core of committed partners at the outset, or start-up phase. Even though coalitions are based on the notion of broad-based ownership and power sharing, several studies found that strong leadership is important to overall success (Birkby, 2003; Drug Strategies, 2001; Metzler, et al., 2003). Birkby adds that successful coalitions develop leadership among their members, rather than relying on a single charismatic individual.

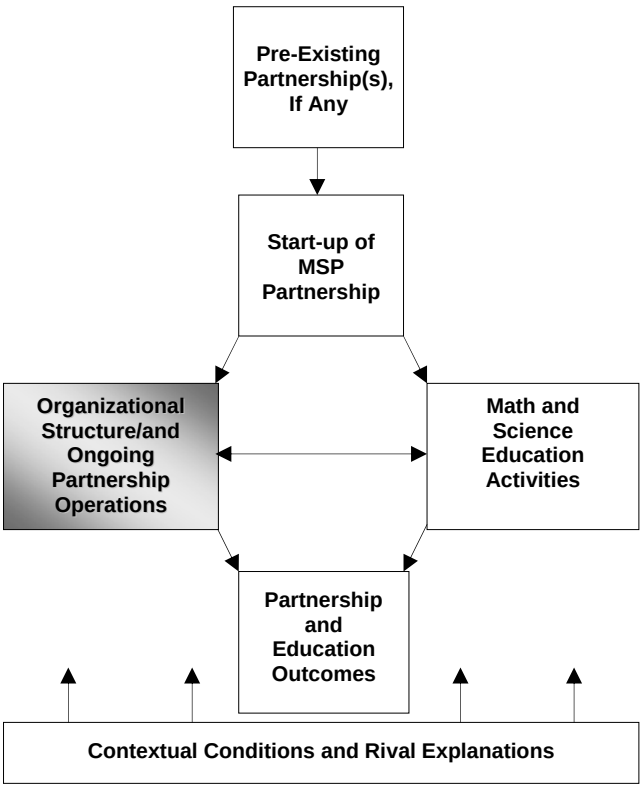
Metzler finds that "the presence of a partnership champion (and the presence of champions within the partnership organizations)," is another characteristic of an effective partnership. She defines champions as:

> "Entrepreneurial individuals who advocate on behalf of the partnership and the partnership approach within their home

organizations, within the partnership as a whole, and externally. Championing capacity not only entails communication, negotiating and organizational skills, but also perceived legitimacy among partners and stakeholders."

Wolff (2001) speaks of collaborative leadership—leaders who share power. "They focus on facilitation and process rather than decisionmaking. They are flexible rather than controlling, decentralized rather than centralized, inclusive rather than exclusive, proactive rather than reactive, and they focus on process and product rather than product only. At the core, collaborative leaders need to be risk takers."

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES

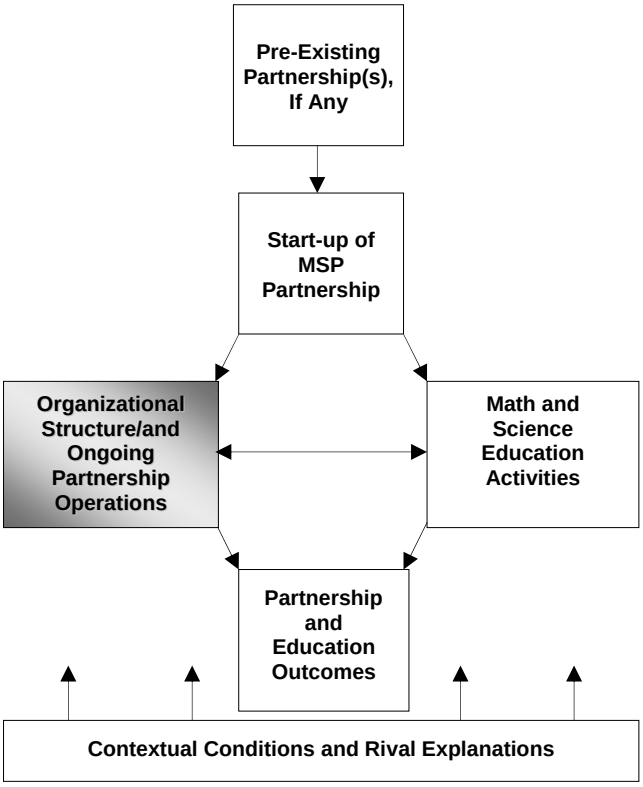


Gouvis Roman et al. (2002) use the term transformational leadership to describe the concept of effective leadership. Transformational leadership "generates awareness and acceptance of the purposes and the mission of the group as [the leaders] stir [community partners] to look beyond their own self-interest for the good of the [community]." Their research concludes that transformational leadership is "based in trust and communication; it can be expressed by the following leadership skills: developing leadership and effective followership, building interconnectedness, mobilizing and empowering the informal community, and articulating the community voice."

As discussed in Section 2.3 above, the majority of the MSP Principal Investigators (or grant *leaders*) are associated with an IHE. Twenty-three of the partnerships have the Principal Investigator and at least one co-Principal Investigator located at the same IHE. Three of the partnerships that have Principal Investigators affiliated with an institution other than an IHE also have co-Principal Investigators working with them at the same organization. The co-Principal Investigators are quite geographically dispersed in some instances.

Some of the partnerships have presented organization charts suggesting highly-structured leadership. For example, Exhibit 6 presents the organizational chart of the Partnership of Student Success in Science grant's leadership organizational chart. This organizational chart clearly illustrates the grant leadership and staffing of the critical partnering entities and their primary roles. It depicts collaboration with an advisory board and input from administrators. It further shows where the key staff members are located institutionally and the amount or percentage of time to be committed to the effort.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES

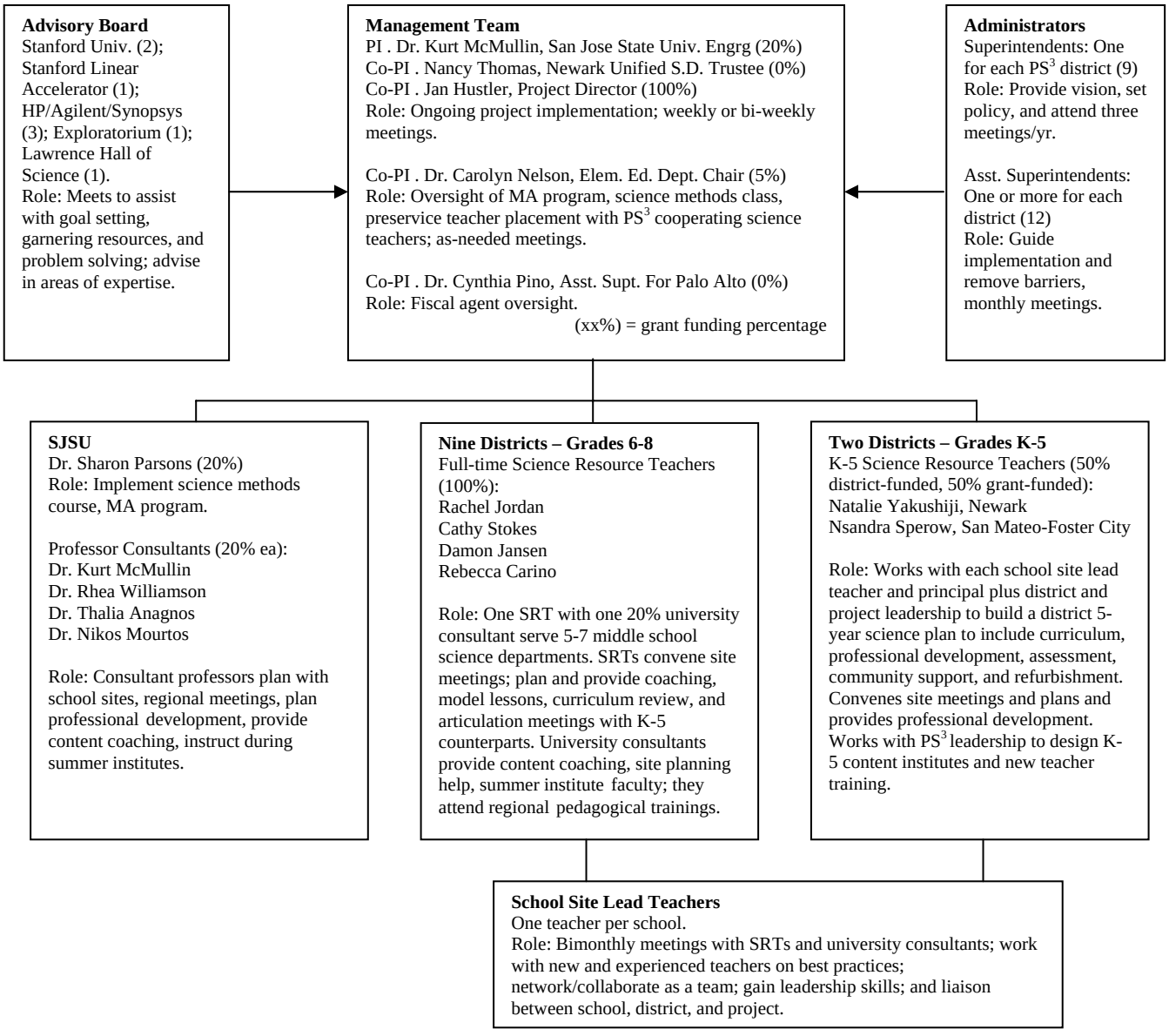


Obtaining Financial and Other Resources. The source of funding and the way funding is used are cited by a number of studies as important elements to consider. In lessons learned from successful partnerships, Kumpfer and Chavez (2000) cite the importance of a partnership having a fiscal agent, such as a university, a community-based organization, or a public agency. They state, "One key to later operational success is how the partnership, its board, and its fiscal agent interpret and divide their responsibilities for important functions such as the hiring and firing of staff or deciding on strategic directions." They also found that when partnerships with substantial new funds are formed an initial challenge that must be recognized and addressed is the partners' understandable focus about how much funding each partner will receive. Metzler et al. (2003) found that the ability of the partnerships to secure financial and other resources was critical to their development. Drug Strategies (2001) recommends having diversified funding sources since relying too heavily on one source can mean that the coalition will fall apart if the original funding source withdraws or ends support.

Exhibit 6

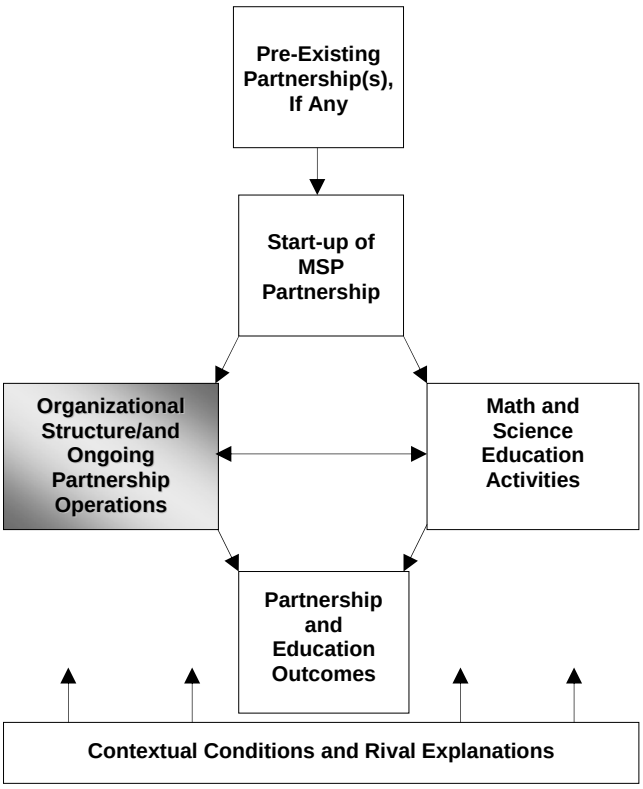
PARTNERSHIP FOR STUDENT SUCCESS IN SCIENCE ANNUAL REPORT

PS^3 LEADERSHIP ORGANIZATION CHART



Gouvis Roman et al. (2002) conclude, "To act as a capable partner, an organization must have some asset to bring to the partnership. This can be a tangible resource, such as money, supplies, or time, or an intangible resource, such as generating participation or having a strong understanding of community problems." They identify three types of resources: 1) human; 2) financial; and 3) technological, stating that to be a competent partner, an organization need not have each of these resources.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES

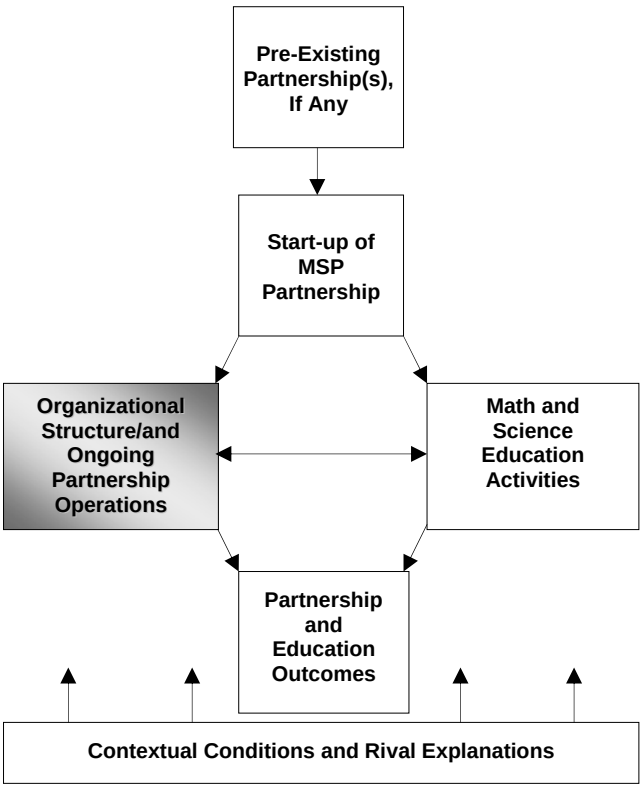


HUD's Office of University Partnerships (HUD, 2002) found the provision of human and financial resources to be an important benefit to community organizations participating in university-initiated partnerships. Human resources included individuals from one partner helping as staff or board members of the other. A review of the program reports that "Resources—especially human assistance—flow both ways. Colleges and universities gain from community development partnerships when the neighborhood comes into the university as well as when faculty, staff, and students go out into the neighborhood. Community residents and staff and board members [of community development corporations] contribute as classroom speakers, as panel participants, as student and faculty mentors, and as members of advisory committees or joint task forces."

As discussed in Section 2.2 above, many of the partnerships leveraged the existing partnership arrangement to obtain their current MSP grant in addition to awards from other sources. In the coming phases of this study, this issue and sustainability among MSP grantees will be explored through primary data collection.

Collaboration and Mechanisms of Communication. Dimensions of collaboration and communication are combined here since effective communication (listening and providing feedback) appears to be an essential component of effective collaboration.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Gajda (2004) identifies the following principles of collaboration derived from observed facts about the development of strategic alliances between organizations:

- Collaboration is an imperative: "there is an ever increasing need for individuals, educational authorities, community networks and business groups to come together to address the complex issues that confront our society today;"
- Collaboration is known by many names, including: join ventures, partnerships, networks, partnerships, coalitions, consortiums, councils, task forces, and groups;
- Collaboration is a journey not a destination;
- With collaboration, the personal is as important as the procedural; and
- Collaboration develops in stages.

Maurana et al. (2001) identify principles of good partnerships that appear in effect to be principles of collaboration, including concepts of trust, leadership, and communication. Metzler et al. (2003) present principles of collaboration that guided collaboration between academic researchers and three urban communities. These principles provided criteria by which to gauge the actual collaboration in the research effort.

Collaboration also includes ability to resolve conflicts within the collaborative framework (Birkby, 2003; Drug Strategies, 2001; Kumpfer and Chavez, 2000). Birkby describes the success of a coalition on

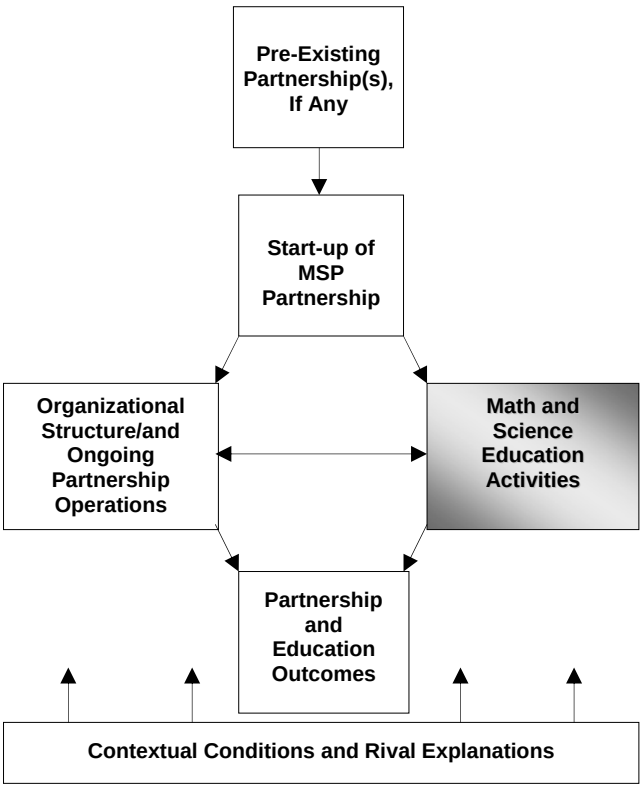
its ability to "create an environment where conflict can be surfaced and handled effectively and efficiently, rather than avoided."

As of the award period 2003-2004, the partnerships are communicating through a variety of mechanisms. These include:

- Establishment of advisory boards, steering committees, or advisory councils;
- Regular meetings, conference calls, or electronic communications;
- Development of grant coordinator type-positions;
- Creation of management and communication plans;
- Development of an organization chart; and
- Development of forms (e.g., reporting forms, logs, etc.).

The nature of the pre-existing partnerships may further contribute to lines and modes of communication being more readily established.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



2.5 ACTIVITIES

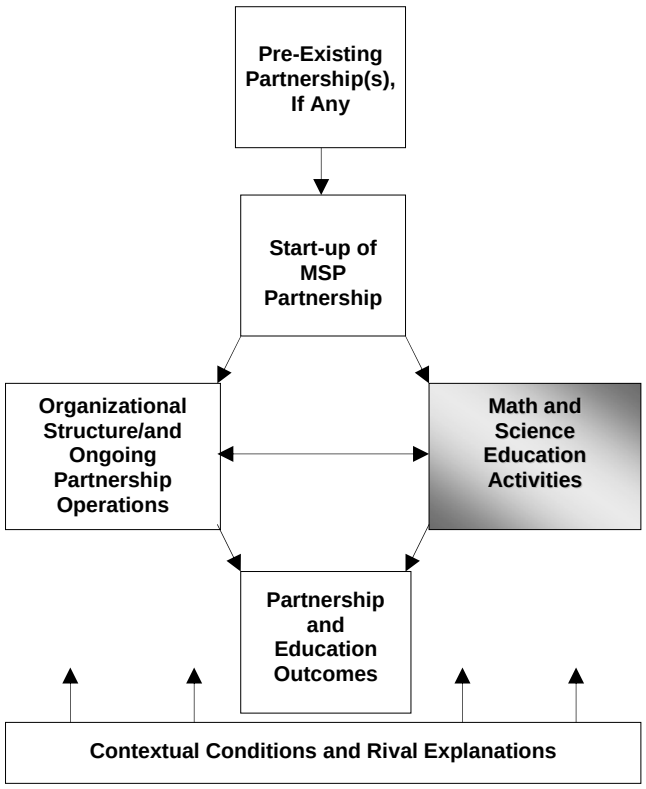
Once the partnership is established, the partners are positioned to begin undertaking activities and implementing proposed programs. These activities may be either external to the partnership or internal. An example of an external activity would be to implement a professional development module for teachers or provide training and technical assistance. An example of an internal partnership activity would be to conduct a process evaluation of the partnership and then use those data to improve the workings of the partnership or to conduct an evaluation of the

grant's proposed outcomes to monitor and track results.

As of the award period 2003-2004, the MSP partnerships have undertaken a wide range of activities that can be categorized into the following areas (see Appendix E for a list of partnerships' activities):

- Provided professional development through workshops, training, seminars, etc.;
- Developed curriculum for professional development;
- Recruited teachers, teacher leaders, professionals changing careers, or mentors (focused on diversity);
- Developed K-12 curriculum for math and science and developed (enhanced or modified) courses for pre-service teachers;
- Encouraged enrollment in challenging courses;
- Developed and implemented a new Master's degree program;
- Developed certification program;
- Aligned school curriculum or university instruction with state standards;
- Collected data to assess various components of the grant or the partnership;
- Published journal paper or wrote article for publication in other venues (e.g., newspaper, magazine, etc.); and
- Increased awareness about the grant through the development of a Web site or convening meetings.

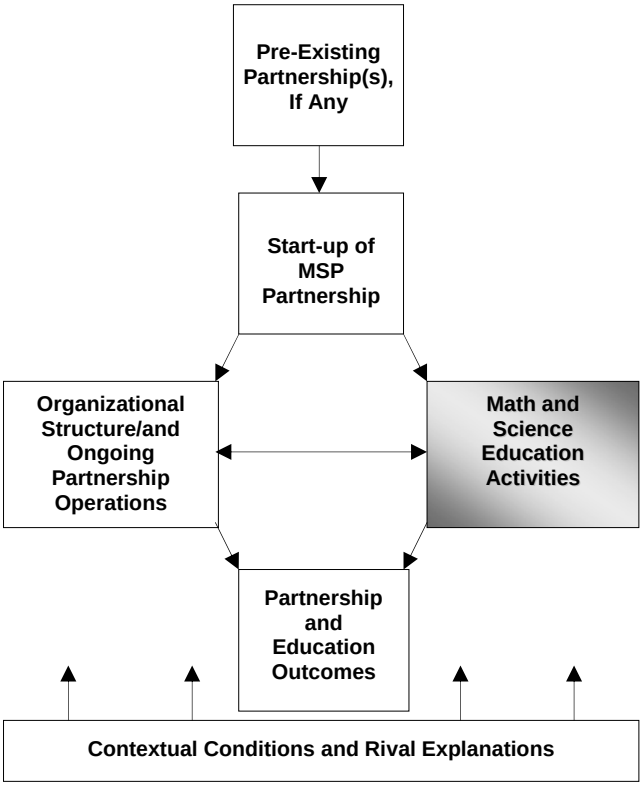
ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



Note that not listed in the above, are all of the organizational grant-specific activities the partnerships undertook such as authored a strategic plan, developed a communication system, identified the appropriate staff, or convened monthly grant team meetings.

By far the greatest number of activities occurred in the area of professional development through workshops, trainings, and seminars. The activities include identify and hiring individuals to provide the professional development; creating and designing professional development modules; coordination of professional development activities; opening a professional development center; and evaluating the sessions.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES

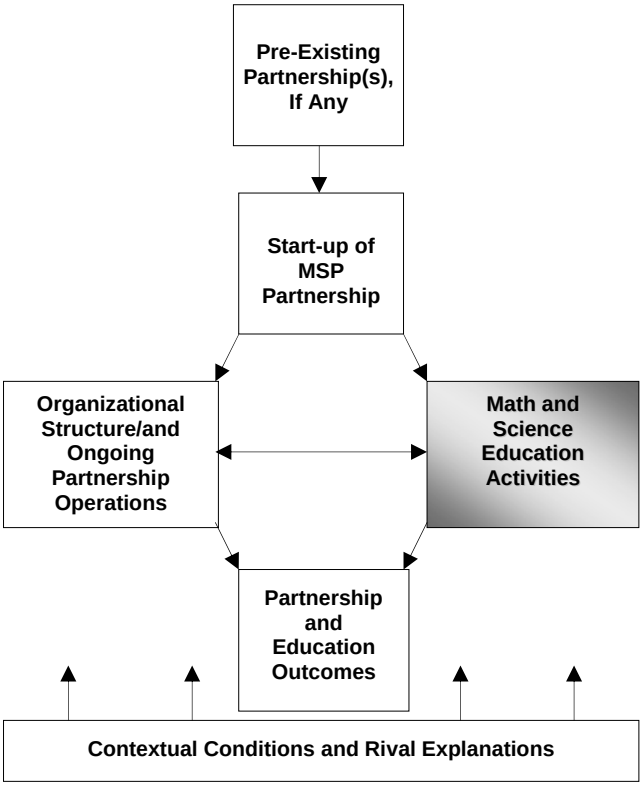


The partnerships also have engaged in a variety of recruiting activities to increase the level of diversity among teachers, to increase the numbers of qualified math and science teachers, and to fill newly created positions such as teacher leaders and mentors. These activities include recruiting potential teachers from different venues of the education continuum and community such as through high schools, colleges and universities; community-based mentoring programs; recruiting career-changing professionals; recruiting individuals with specific backgrounds such as science, math, engineering, and technology; and recruiting teachers into specific education programs.

Some of the partnerships conducted activities that involved designing, developing, restructuring, or revising curriculum or courses at either the K-12 level or the university level. Components of the professional development activities discussed above included the training of teachers to use the revised curriculum. Part of this transformation process included the adoption and implementation of standards-based curriculum that aligned with state standards, state expectations for math and science, other tests, and ensured readiness for college expectations. As of the award period 2003-2004, five partnerships either developed or are in the

process of helping enroll teachers in a Master's degree program geared toward teaching math or science. For example, available programs include Master of Arts in Teaching Mathematics, Master of Arts in Teaching Science, Master of Science in Science Education, Master's for training in-service science teachers, Master of Integrated Science Education, Master of Chemistry Education, Master's degree with a specialization in math or science for middle school teachers, and one specifically for math teaching fellows. Other partnerships have developed certification or licensure programs.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES

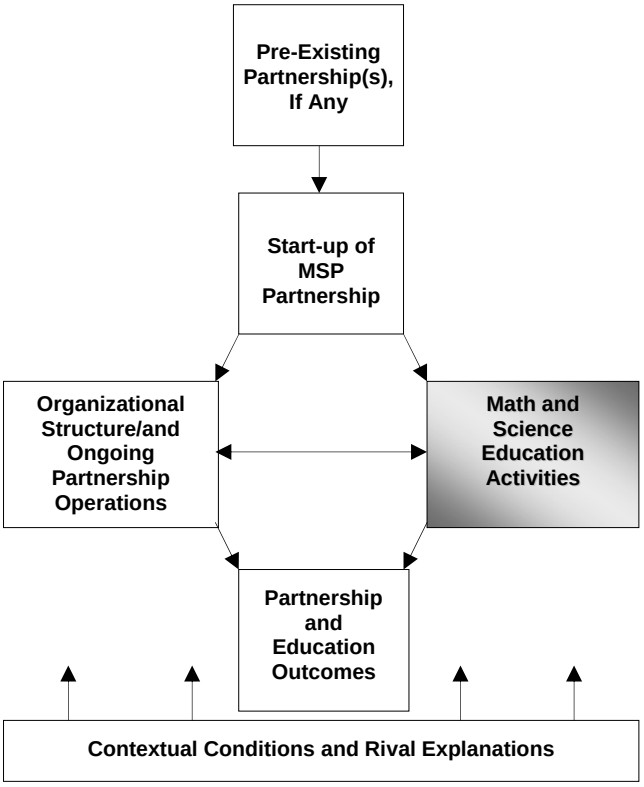


Requesting Training and Technical Assistance. Training and technical assistance are viewed as critical to the success of partnerships (Birkby, 2003; Mitchell, et al., 2002; Wolff, 2001). Emphasizing the need to develop effective technical assistance systems to support implementation activities, Mitchell et al. (2002), write that a technical assistance system can provide the intermediate support needed to develop an organizational infrastructure, design appropriate interventions, and engage the community. In 2004, Mitchell et al. reported on the outcomes of a statewide technical assistance project to 41 partnerships. The researchers found that coalitions with greater initial capacity were more likely to identify technical assistance needs and request expert assistance. However, data obtained from key informants did not indicate a relationship between levels of technical assistance and observed outcomes.

Walker et al. (1999) reviewed community partnerships for cultural participation that were sponsored by the Lila Wallace-Reader's Digest Fund. They found that technical assistance was needed by the local foundations as well as by their grantee/partners. The foundations needed assistance in areas such as evaluation, performance measurement, and related data collection. Local community organizations (the partner/grantees) often needed technical assistance in a number of areas, including how to complete the grant application process.

HUD's Office of University Partnerships (HUD, 2002b) identifies a number of approaches universities have used to provide technical assistance to partners. The technical assistance may be provided directly by faculty and students, by a specific program within the university, or by an umbrella technical assistance organization. Technical assistance provided through these approaches addressed organizational development, articulation of mission and goals, creation of an organizational structure, strategic planning, financial management, and grantwriting.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



None of the MSP partnerships reported needing or requesting formal technical assistance from NSF outside of the NSF-sponsored grantee conferences or the online Web-based forums offered through MSPnet.

Monitoring Results. Closely tied to the importance of agreeing on the desired outcomes of the partnership, is the need to have a plan to measure performance (Drug Strategies, 2001; Metzler, 2003). Metzler found that effectiveness included maintaining a continuous assessment presence whether through internal or outside evaluators, and reviewing findings.

It is essential that there be a theoretical link between the activities of the coalition and the outcomes (Connell, et al., 1995). Without such a link it will be difficult to attribute observed changes to the partnership.

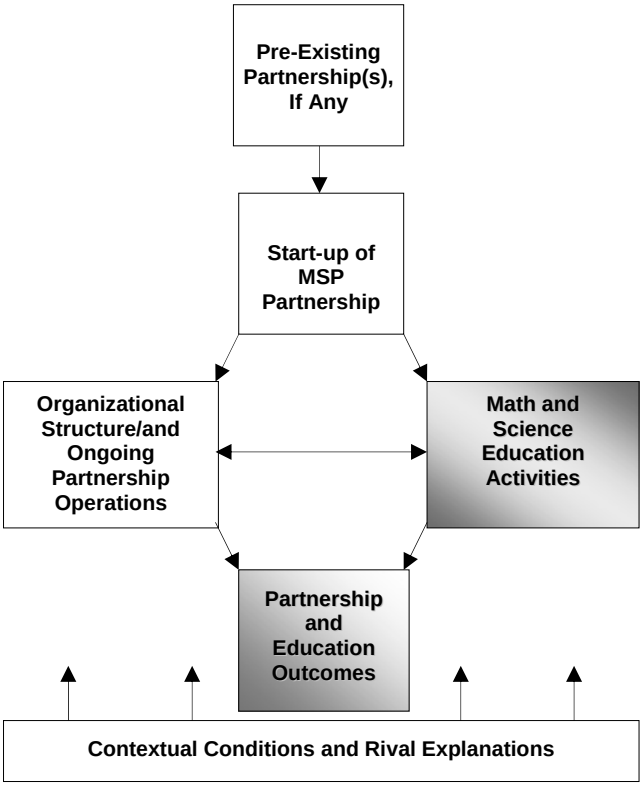
The Institute of Medicine conducted a study, jointly funded by The Robert Wood Johnson Foundation and the Office of the Assistant Secretary for Health, U.S. Department of Health and Human Services, to examine how performance monitoring can be used to improve the public's health through considering the roles played by the many stakeholders working towards improving community-wide health. Although the emphasis of the study was on developing health indicators for specific public health concerns (such as breast and

cervical cancer, violence, elder health, and depression), the study also examined the collaboration among various stakeholders. Findings show that "bringing together diverse groups that influence community health is critical to building support and acceptance of performance monitoring" (The Robert Wood Johnson Foundation, 1998).

Building coalitions takes time; achieving the desired outcomes takes even longer. The importance of patience, time, and persistence, and taking a long-range view is repeated in most studies (Brownson, et al., 2001; Metzler, 2003; Wolff, 1997). Brownson sums up the key role of time as follows:

> "The participatory research processes are complex and time consuming. In some cases, practitioners and researchers may attempt to measure an outcome before sufficient intervention exposure has occurred, making the demonstration of a significant effect virtually impossible. Processes of trust building and gaining mutual respect can be very time intensive."

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



In planning to evaluate partnerships, it also is important to explore reasons for avoiding partners or partnership relationships. Some of the primary reasons include:

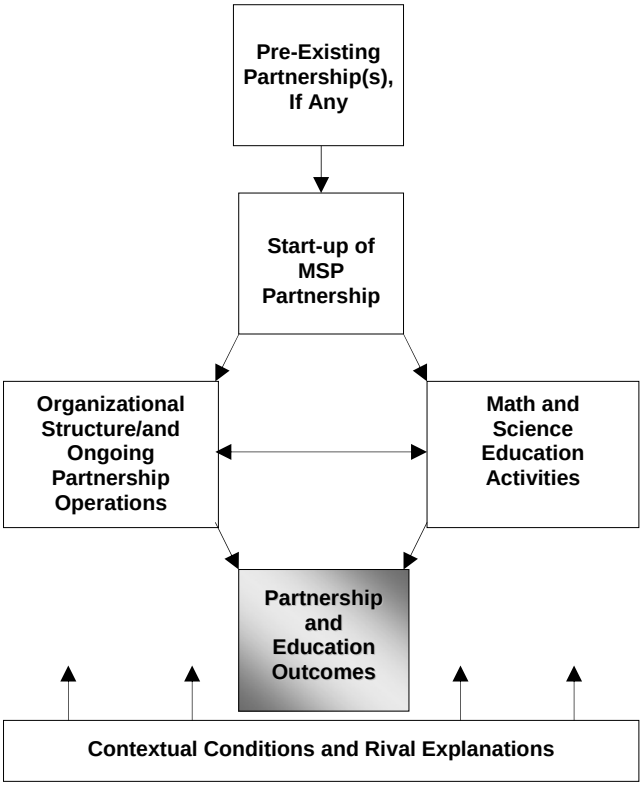
- Different purposes for pursuing similar objectives;
- Different means of operating;
- Poor history of previous interactions;
- Political subtleties;
- Lack of support from senior management;
- Lack of quick fixes; and

- Concerns about cost of getting started and of continuing maintenance (NSF/Pimmel, 2004).

2.6 MEASURING OUTCOMES AND DEVELOPING AN EVALUATION FRAMEWORK

To develop an evaluation framework for the MSP partnerships, it is important to start with the process itself—a process that is complex, challenging, dynamic, and ever-changing. Systematic examination of these processes will help to determine, within a relatively short time frame: 1) the basic characteristics of the partnerships; 2) how partners work with each other; 3) the dimensions of the partnering relationship; and 4) immediate effects of the partnership on the partners. In the long term, it will be essential to determine the effect of the partnership on the intended outcomes (such as changes in student achievement). However, it will be difficult to determine the extent to which partnerships actually work if the only outcome studied is distal in nature, and if no theoretical link has been established between the partnership and its long-term outcomes. In fact, much of the evidence about partnerships' contributions to overall performance is, with the exception of a few private sector alliances where increased efficiencies have been documented and quantified anecdotal (Shah and Singh, 2001).

ASSESSING PARTNERSHIPS: AN EXAMPLE OF SEQUENTIAL PHASES

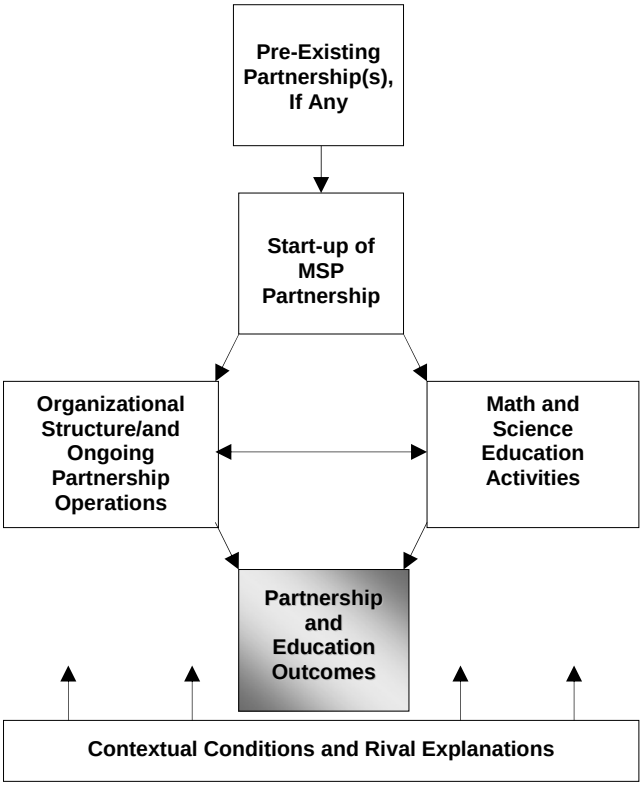


To attribute distal outcomes to the work of the partnership, it is important to have documented the partnership start-up process, identified key elements of the partnering relationship, and assessed the immediate effects of the partnership on major stakeholders: the members of the partnership, the partnership itself, and the targeted community. In the case of a university-K-12 partnership, the members are: 1) the researchers, faculty, and administrators at the university as wells as the students (who may be termed "service learners"); 2) the K-12 teachers, administrators, and students; 3) other partnering organizations (such as SEAs or

nonprofits) and community advocates; and 4) the members of the targeted community.

Measuring Partnership Processes: Assessment Methods and Instruments. In addition to looking at the overall outcomes, it is essential to assess the functioning partnership itself. Schulz et al. (2003) report "evaluators interested in evaluating partnerships find few assessment instruments available to them."

ASSESSING PARTNERSHIPS: AN EXAMPLE OF SEQUENTIAL PHASES



As of the award period 2003-2004, some MSP awards began to look at partnership evaluation at the outset, while others showed evidence of wanting to conduct an evaluation at some point in the future. In subsequent years of the partnerships as it matures, it will be important to examine the role of STEM discipline faculty engagement in the partnership and how they have contributed to achieving the goals of the partnership. Of the MSP Program comprehensive (cohorts I and II) and targeted (cohorts I, II, and III), three partnerships are planning to evaluate their partnership in terms of characteristics of an effective partnership, efficacy, and cultural changes. These include:

- Milwaukee Mathematics Partnerships: Sharing Leadership for Student Success;
- Promoting Reflective Inquiry in Mathematics Education; and
- Math and Science Partnership in New York.

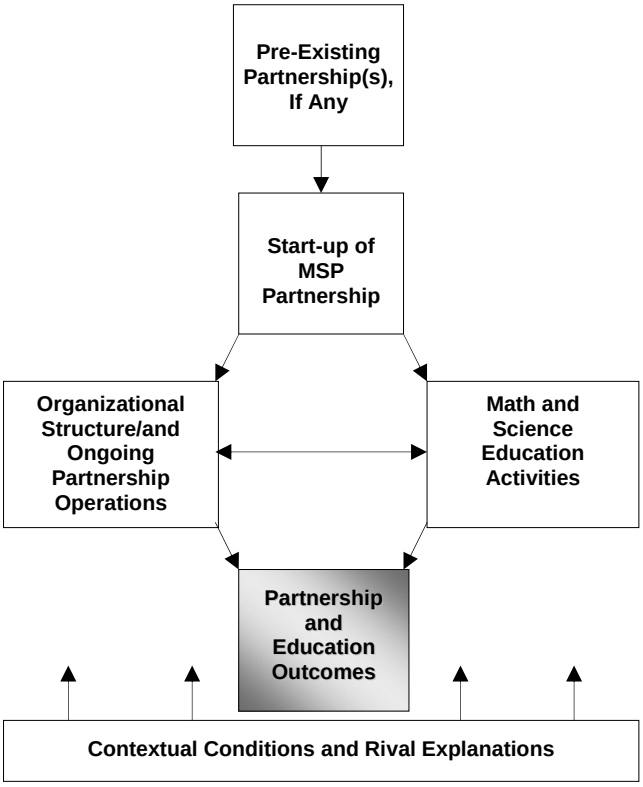
The Milwaukee Mathematics Partnerships: Sharing Leadership for Student Success grant is measuring the degree to which a true effective partnership was established and is identifying the defining attributes of such a partnership. The Promoting Reflective Inquiry in Mathematics Education grant is planning to evaluate the efficacy of the partnership. One of the primary components of the Math and Science Partnership in New York

grant's evaluation will be to evaluate cultural changes including reward systems, district priorities and policies, IHE priorities and policies, and lines and type of communication and participation.

Three additional partnerships have the instruments to do an evaluation of the partnership. These include:

- Cleveland Math and Science Partnership;
- Consortium for Achievement in Mathematics and Science; and
- Partnership for Student Success in Science.

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



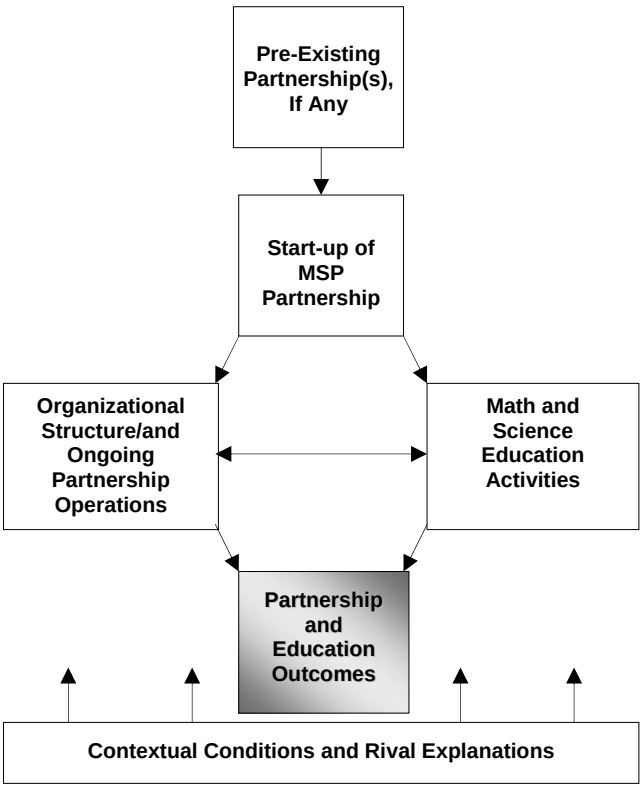
The Victorian Health Promotion Foundation developed the partnership evaluation instrument for the Cleveland Math and Science Partnership and the initial results appear in the evaluation report. The Consortium for Achievement in Mathematics and Science evaluation questions included: 1) To what extent is the Consortium using existing resources and lessons from previous initiatives to their advantage?; 2) How efficiently and effectively do partners work together?; and 3) To what extent are the resources and capacities of the Consortium partners adequate for carrying out Consortium goals with quality? The Partnership for Student Success in Science partnership evaluation will include components that evaluate building a functional and healthy relationship.

One other partnership, SUPER STEM Education, will provide lessons learned documentation of what works and information about how to construct such a partnership to a wide audience of policy makers and university and school leaders. The North Cascades and Olympic Sciences Partnership team read and discussed "Effective School-College Partnerships, A Key to Education Renewal and Instructional Improvement" (*Education*, Summer 2001:732-736) to increase their

understanding of partnerships and asses their prior interactions against the described criteria to identify strengths and areas for improvement. The Standards Mapped Graduate Education and Mentoring partnership reported that its advisory board would provide comment on the general progress and direction of the partnership.

In evaluating partnerships some effective instruments do exist and some have been adapted and modified for evaluation purposes. While Exhibit 1 in this document shows the overarching evaluation framework for this examination of partnerships, there are a significant number of instruments and frameworks that could be used to augment or supplement the proposed framework. Some of these could be used in later phases to supplement or augment the work on this topic. Methods include: in-person interviews with partners, partner surveys, and observations. Other researchers used similar methods. As shown in Exhibit 7, most of the instruments discussed below cover more than one dimension of working with partners. For example, Brinkerhoff (2002) presents a detailed list of assessment targets and methods (see Exhibit 8).

ASSESSING PARTNERSHIPS:
AN EXAMPLE OF SEQUENTIAL PHASES



To assess the working of community coalitions, the John S. and James L. Knight Foundation and The Robert Wood Johnson Foundation developed a number of survey instruments: 1) a nine-question expert advisory panel instrument; 2) an 18-question coalition mail survey; 3) an approximately 45-minute telephone survey for coalition leaders; 4) a 20-minute telephone survey of key informants (e.g., non-coalition community leaders); and 5) an in-depth site visit guide (Drug Strategies, 2001). These instruments are comprehensive in nature and vary in topical areas covered and length.

Exhibit 7
PARTNERSHIP DIMENSIONS ADDRESSED BY SPECIFIC INSTRUMENTS

		Working with Partners								Partner Relationships			Increased Capacity	
Source	**Instrument**	**Community Readiness**	**Recruiting Partners**	**Missions and Goals**	**Original Structure**	**Action Plan**	**Finances and Other Resources**	**Technical Assistance**	**Evaluation and Outcome Monitoring**	**Mutuality Trust**	**Leadership**	**Collaboration**	**Partner and Partnership Capacity**	**Community Capacity**
Drug Strategies, 2001	Interview guide for expert advisory panel	X												
	Telephone survey for community leader	X			X									
	Mail survey for coalition member				X	X	X							
	Telephone survey for key information	X												
Bright, 1998	Community-based organizational self-assessment tool		X	X	X		X		X		X	X		
Lewis, 1998	Strategic alliances assessment tool				X		X							
Hays et al., 2000	Measure of sectorial representation		X											
Butterfoss, 1996	Plan Quality Index					X	X							
Gardner, 1995	Self assessment inventory		X	X			X		X		X	X		
Harms et al., 2001	Sustainability worksheet		X				X				X			
Bell-Elkins. 2002	Campus community partnership principles		X	X					X	X		X		
Butterfoss et al., 1996	Effectiveness of community coalitions		X											
van Houten et al., 2000	Establishment and effectiveness of state minority health networks		X	X	X	X			X					
Goodman et al., 1996	Meeting effectiveness inventory				X									
Paine, 2003	Trust in organizations									X				
Glaeser et al., 2000	Trust and trustworthiness									X				

(Continued on next page)

Exhibit 7 (Continued)

		Working with Partners								Partner Relationships			Increased Capacity	
Source	**Instrument**	**Community Readiness**	**Recruiting Partners**	**Missions and Goals**	**Original Structure**	**Action Plan**	**Finances and Other Resources**	**Technical Assistance**	**Evaluation and Outcome Monitoring**	**Mutuality Trust**	**Leadership**	**Collaboration**	**Partner and Partnership Capacity**	**Community Capacity**
Gillespie, 2003	Trust in working relationships									X				
Hays et al., 2000	Leadership effectiveness										X			
Goodman et al., 1996	Key leader survey										X			
Hays et al., 2000	Collaboration											X		
Mattessich, 2001	Collaborative factors inventory	X	X									X		
Gardner, 2000	Collaborative values	X										X		
Borden and Perkins, 1999	Collaboration of assessment tool						X		X		X	X		
Bergstrom et al., 1995	A collaboration progress checklist	X		X					X		X	X	X	
Rothwell, 2004	Institutional learning												X	
Bartle, 2003	Community empowerment										X	X	X	X
Gardner, 1995	Capacity: a collaborative assessment					X	X		X		X		X	
Hudson and Chapman, 2002	Social Capital													X
Grootaert et al., 2003	Social Capital													X
Healy, 2003	Social Capital													X
Bullen and Onyx, 1998	Social Capital													X

Exhibit 8

TARGETS AND METHODS FOR A PROPOSED ASSESSMENT OF PARTNERSHIPS

Assessment Targets	Assessment Methods			
	Partner Interview	**Partner Survey**	**Process Observation and Assessment**	**Other**
I. Presence of prerequisite and success factors	X	X		
A. Prerequisites and facilitative factors	X	X		
• Perceptions of partners' tolerance for sharing power	X	X		
• Partners' willingness to adapt to meet partnerships' needs	X	X		
• Existence of partnership champions	X	X		
B. Success factors from the literature	X	X		
• Trust*	X	X		
• Confidence	X	X		
• Senior management support	X	X		
• Clear goals		X		
• Partner compatibility	X	X	X	
• Conflict	X	X		
A. II. Degree of partnership	X	X	X	Partner identification and assessment of indicators
A. Mutuality*	X	X		
• Mutuality and equality	X			
• Equality in decisionmaking		X		
• Resource exchange		X	X	
• Reciprocal accountability		X		
• Transparency		X		
• Partner representation and participation in partnership activities	X			
• Mutual respect		X		
• Even benefits		X		
B. B. Organization identity*	X	X		
• Partner organization identities	X			
• Organization identify within the partnership		X		
III. Outcomes of the partnership relationship	X	X	X	
• Value-added	X	X	X	
• Partners meet own objectives	X	X		
• Partnership identity	X	X	X	
IV. Partner performance	X	X		
A. Partners and partner roles	X	X		Review of partner

(Continued on next page)

Exhibit 8 (Continued)

Assessment Targets	Assessment Methods: Partner Interview	Partner Survey	Process Observation and Assessment	Other
enacted as prescribed or adapted for strategic reasons				proposal
B. Partner assessment and satisfaction with their partners' performance	X	X	X	
• Compliance with expected and agreed roles	X	X	X	
• Satisfaction of partners with each other's performance	X	X		
• Partner's performance beyond the call of duty	X	X		
V. Efficiency and strategy	X			
• Identification of critical factors influencing partnership's success	X			
• Extent to which these are continuously monitored	X			
• Extent to which these are Strategically managed	X			

*These relationship dimensions of partnerships are addressed in Section III of this report.

Adapted from Brinkerhoff (2002).

A community organizational assessment tool developed by the Citizens Involvement Training Program at the University of Massachusetts-Amherst, as a mechanism to facilitate organizational discussion and development, may be relevant to partnership development (Bright, 1998).

The Nonprofit Management Education Center of the University of Wisconsin Extension has developed a Strategic Alliances Assessment Tool that may be relevant to assessment of strategic planning by partnerships (Lewis, 1998). The tool is based in part on the above-referenced community organizational assessment tool (Bright, 1998) and a checklist of nonprofit indicators developed in 1998 by the United Way of Minneapolis Area.

Hays et al. (2000) studied the relationship between the structure of substance abuse prevention coalitions and community impact. Below are the measures they used to assess the

following constructs: sectorial representation and member diversity.

- ***Sectorial Representation***. The members of each of 28 Illinois coalitions were asked to identify the community sector they represented from among 17 different sectors. Sectorial representation was measured as the total number of unique community sectors represented on a given coalition.

- ***Member Diversity***. On the assumption that diversity usually means the inclusion of non-white members, member diversity was measured as the percentage of non-white members in a coalition.

Butterfoss et al. (1996) developed a Plan Quality Index. The instrument examines respondents' assessment of the components of a committee plan: goals and objectives, scope, and community resources. It also includes a pre-implementation checklist.

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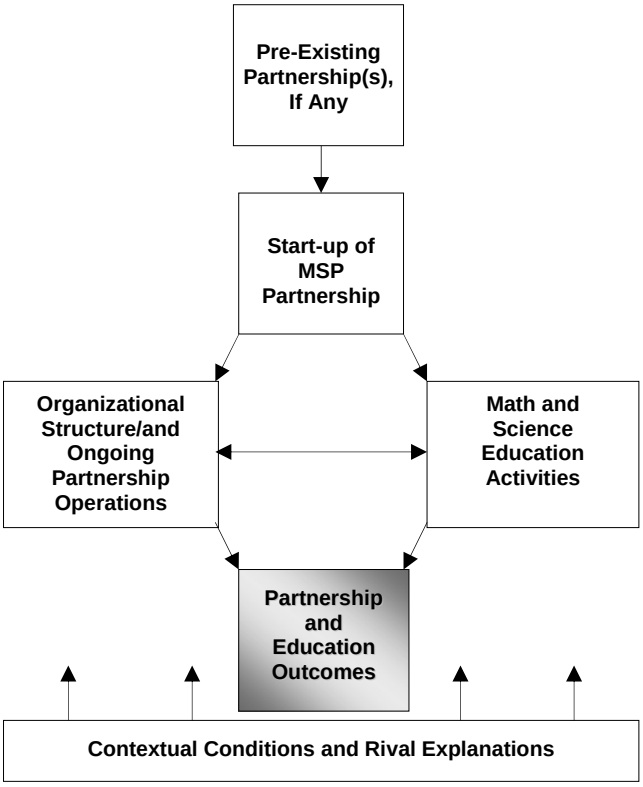

Gardner (1995) developed a 29-item Community-Based Self-Assessment Instrument that measures nine dimensions of a community organization's progress toward responding to policy changes. The nine dimensions are: 1) collaboration with other agencies; 2) internal agreement on values and mission; 3) diversity and inclusiveness; 4) organizational priorities; 5) budgets and resources; 6) staff and leadership development; 7) commitment to outcomes and accountability; 8) response to policy changes; and 9) future role of the organization.

Harms et al. (2001) developed a community readiness instrument and a sustainability assessment worksheet for Washington State's coalition for children's oral health. Bell-Elkins (2002) developed an instrument to assess principles of partnership in a community-campus partnership.

Butterfoss et al. (1996) developed a 129-item self-administered survey to measure the effectiveness of committees of community coalitions for prevention and health promotion. The instrument

was derived from existing instruments and tested for reliability (all but one had high internal consistency). Committee characteristics covered by the survey were: leadership roles, staff-committee relationships, organizational climate, decisionmaking processes, community linkages, member satisfaction, member participation patterns, and members' costs and benefits.

Van Houten et al. (2000) developed a number of instruments to assess the establishment and effectiveness of state and minority health networks. Relevant to the study are: 1) a list of key study questions and corresponding subquestions and 2) sections of an interview guide for directors of established offices of minority health and for minority health contact persons.

Goodman et al. (1996) developed a meeting effectiveness inventory asking respondents to rate the meeting's agenda, leadership, decisionmaking, and value.

Measuring Key Indicators. As mentioned earlier in this report, mutuality and trust are critical elements of a successful partnership and therefore should be part of the measurement process. Below are measures that specifically focus on mutuality and trust, leadership, and collaboration.

Mutuality and Trust. The U.S. Department of Education's Institute of Education Sciences holds that a key item in a study analyzing outcome data is that that the measures are valid; that is, they accurately measure the true outcomes that the activity was designed to affect (U.S. Department of Education, Institute of Education Sciences, 2003). Metzler et al. (2003) searched for validated instruments to measure trust between community and research partners, and were unable to find any. The following instruments measure trust from a management perspective. It may be possible to adapt them to the trust in the MSP partnerships.

Paine (2003) presents a trust measurement questionnaire intended to answer the following three questions: 1) have the organization's programs and activities changed what people know, think, or feel

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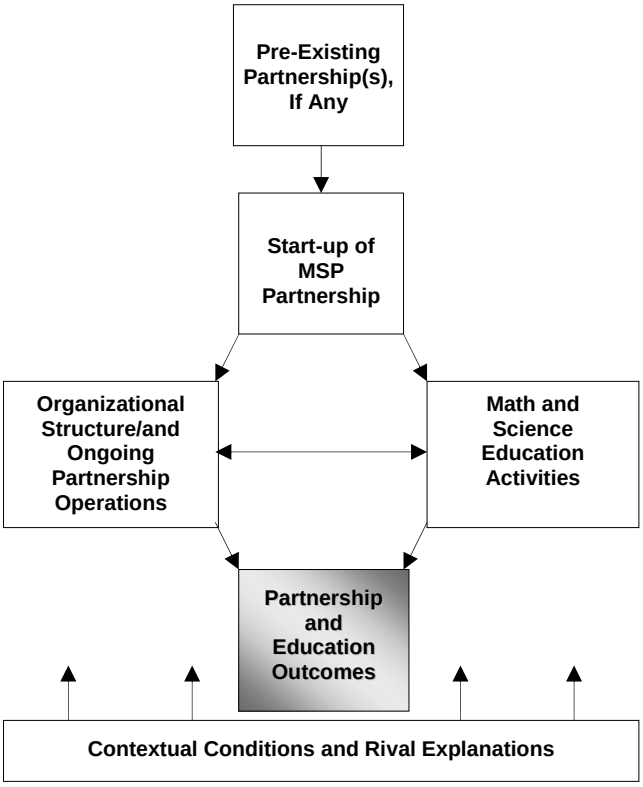

about the organization, and how they act; 2) have the actions of the organization had an impact on how constituents trust the organization; and 3) can the organization document that its communication efforts have increased this trust? The instrument covers: mutuality, commitment, satisfaction, communal relationships, and exchange relationships. Communal relationships are those in which both parties provide benefits to each other; in exchange relationships, one party gives benefits to the other, because the other party has done so in the past or is expected to do so in the future. According to Paine, "communal relationships are essential to developing and enhancing trust in an organization."

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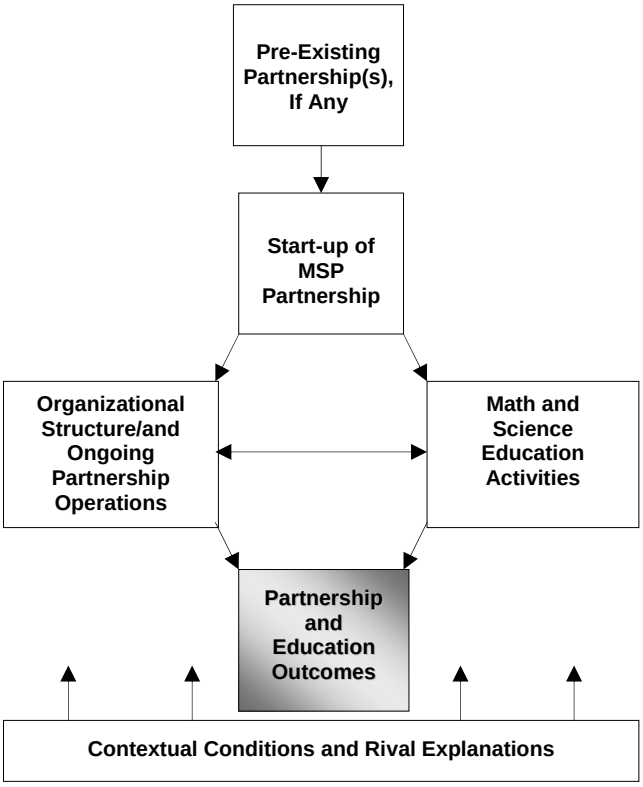

Glaeser et al. (2000) combined two experiments and a survey to measure trust and trustworthiness, which they define as two key components of social capital.

Gillespie (2003) developed a behavioral trust inventory based in part on existing measures of trustworthiness, disposition to trust, trust in the team, common values, common goals, interdependence, risk in the relationship, relationship effectiveness, overall trust, strength of the relationship, and satisfaction with performance.

Leadership. Hays et al. (2000) studied the relationship between the structure of substance abuse prevention coalitions and community impact. They measured leadership effectiveness through a six-item instrument assessing members' perceptions of the extent to which the coalition leader directs the group towards collaborative goal achievement. Each item was measured on a five-point Likert scale. Goodman et al., developed another instrument, a key leader survey (1996).

Collaboration and Communication. Gajda (2004) has developed an assessment tool, the Strategic Alliance Formative Assessment Rubric, based on the above-mentioned principles of collaboration. The tool can be used to help partnerships measure the relative strength of their partnership over time.

Hays et al. also developed a measure of collaboration. Members were asked how frequently they engaged in six increasingly complex collaborative activities with other partners. Responses were measured on a five-point Likert scale.

Researchers at the Amherst H. Wilder Foundation in St. Paul developed the Wilder Collaboration Factors Inventory that assesses collaboration's strengths and weaknesses (Mattessich, 2001).

Gardner (2000) has created instruments to examine collaborative values in California partnerships for substance abuse prevention.

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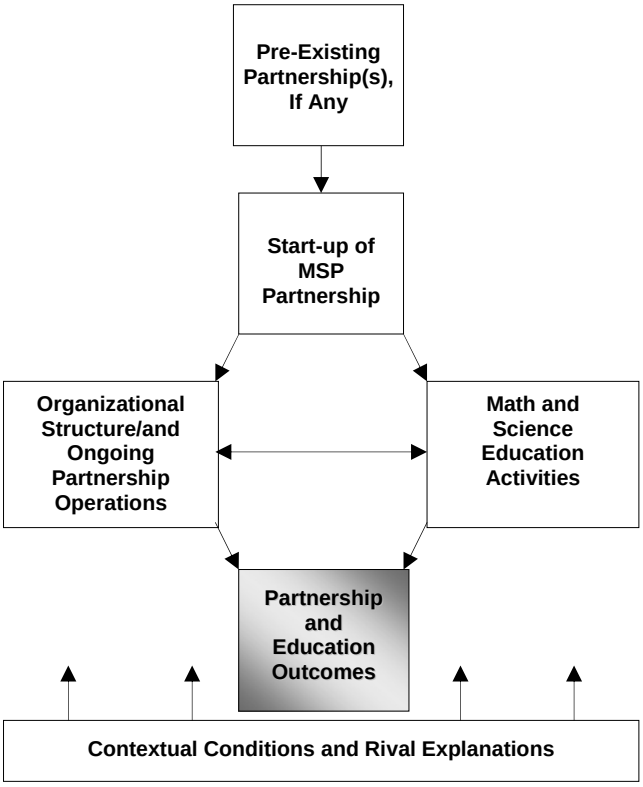

The National Network for Collaboration (Borden and Perkins, 1999) developed a collaboration progress chart. The chart allows partnership members to rate the partnership as the following factors: goals, communicating, sustainability, research and evaluation, political climate, resources, catalysts, policies and reputations, history, connectedness, leadership, community development, and understanding the community. A definition of each of these factors is part of the instrument.

The Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture has created five national networks to marshal faculty and program resources to respond to the economic, social, and human stresses faced by children, youth, and families (Bergstrom, et al., 1995). These national networks created a collaboration framework to address community capacity. The framework is designed as a planning tool to develop and sustain collaboration, as well as a diagnostic tool to evaluate ongoing development and progress.

In order to measure partnerships, Kingsley and O'Neil (2004) developed a three-staged partnership logic model. Stage one, partnership preconditions, examines the embeddedness of the partnership. Kingsley and O'Neil define embeddedness as the number and types of relationships that organizations have with one another prior to the development of

the partnership. Stage one further explores the strategic needs or the types of resources and need confronting organizations and whether there is a congruence or complementarity in these needs. Stage two, partnering activities, looks at partnership formation (including aspects such as agreements, goals, resource allocation, etc.) and partnership operations or the actual behaviors in which the partners engage. Stage three, partnership outcomes, examines both process and performance outcomes. Kingsley and O'Neil define process outcomes as "the qualitative and quantitative assessments that measure whether the partnership achieved the goals and duties of operation" and performance outcomes as "assess such improvements as in the working environments of the organizations, transfer of knowledge between organizations, or increased ability to quickly innovate" (Kingsley and O'Neil, 2004). The MSP Program realized that rich information existed about partnership in other arenas beyond education and therefore funded a RETA (see page 8) to inform this specific knowledge base.

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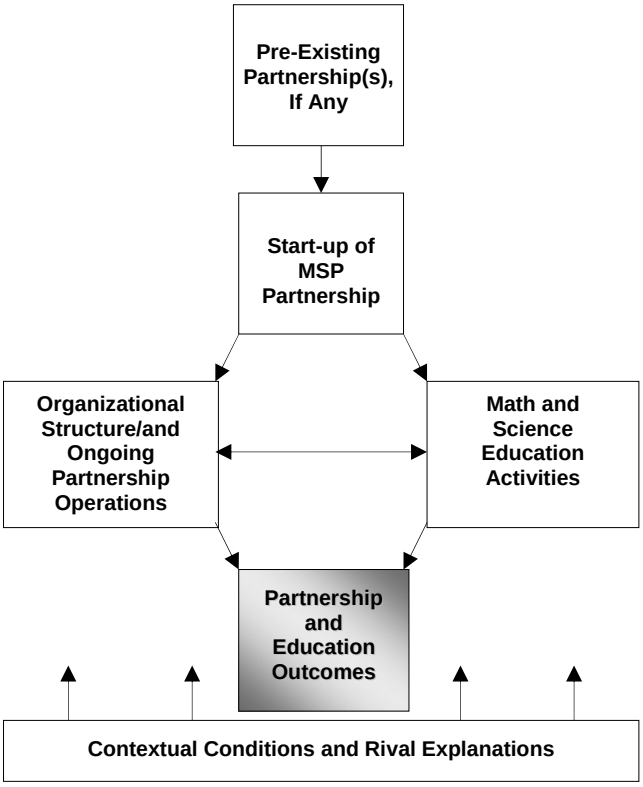

Evaluating Long-Term Outcomes. Even though this report does not focus on measuring the long-term outcomes of MSP partnerships, it is relevant to briefly discuss some of the challenges associated with such measurement and evaluation. It is precisely these challenges that make it important to document and measure the establishment and working of partnerships, and their immediate effect on the capacity of all participants to address the targeted issues. In a report to congressional committees, the U.S. General Accounting Office states that having collaborative partnerships is one of the key indicators of evaluation capacity (U.S. General Accounting Office, 2003).

Evaluations of the long-term effect of partnerships on targeted issues show a mixed record. Birkby (2003) reviewed literature on effectiveness of coalitions and identified a number of studies that were not able to conclusively demonstrate effectiveness of major initiatives. An evaluation of The Robert Wood Johnson Fighting Back program targeting drug use concluded, "Coalitions are expensive to maintain and may not lend themselves to effective or well-implemented strategies" (Halfors,

et al., 2002, as cited in Birkby). Yin et al. (1997) evaluated the CSAP Community Partnership Program and found that only eight of the 24 communities studied showed statistically significant results lower than comparison communities on at least one of six outcomes examined.

On the other hand, Birkby's review of the literature did identify a number of successful partnership collaborations. Berkowitz (2001), as reported by Birkby, finds that coalitions have achieved positive outcomes in the following areas: disability advocacy, education, health clinics, access to prenatal care, housing for the mentally ill, and physical exercise.

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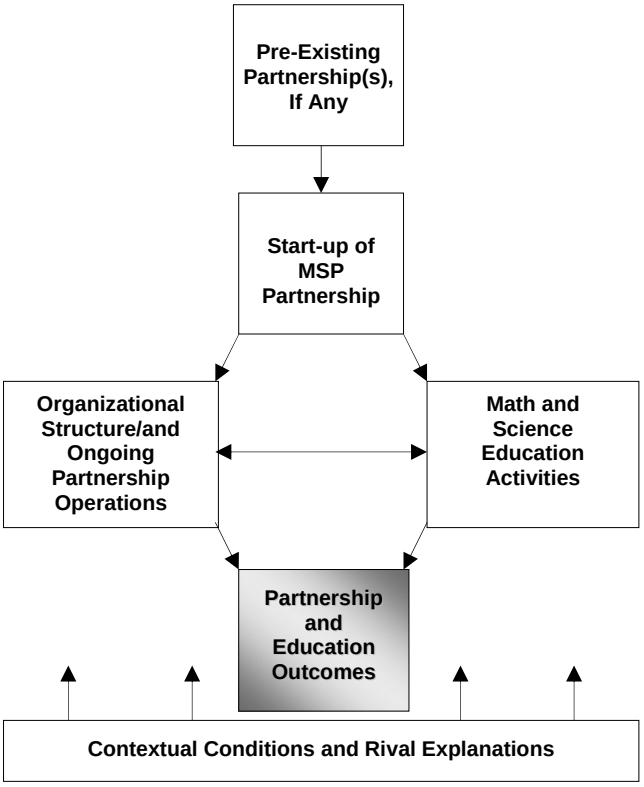

Wandersman and Florin (2003) identify successful outcomes for an arson prevention coalition in Detroit and the CINCH initiative in Norfolk, Virginia. Stevenson and Mitchell (2002)—as discussed by Wandersman and Florin—review the results of studies examining the effect of collaborative efforts targeting substance abuse and find that collaborative strategies targeting policy change appeared to be the most effective.

Birkby identifies the following reasons why it may be so difficult to evaluate the long-term effectiveness of partnerships and coalitions:

- ***Coalitions are not well defined***. Unique characteristics of each coalition make it difficult to replicate the initiative.

- ***Extraneous variables can influence outcomes***. Moreover, extraneous variables differ from community to community. They include policy changes, new government initiatives, and population changes. All of these can interact with each other as well as with the community initiative.

- ***It is difficult to match the community with the partnership initiative with a similar community without such an initiative***. Without such comparisons,

however, it is difficult to attribute changes to the partnership.

- ***It is difficult to draw conclusions across coalitions***. They often differ in intended outcomes, or worse yet do not have the same access to good baseline data.

- ***The long-term effects may not be measurable until years later***. Many coalitions either do not measure intermediate outcomes or do not have well-articulated theory to link intermediate and long-term outcomes.

- ***Coalitions may change in essential components***. Political pressure or pressure from funding sources may change the coalitions structure or functioning.

- ***Coalitions are multi-layered and complex***. The complex nature of the coalition does not lend itself well to traditional evaluations.

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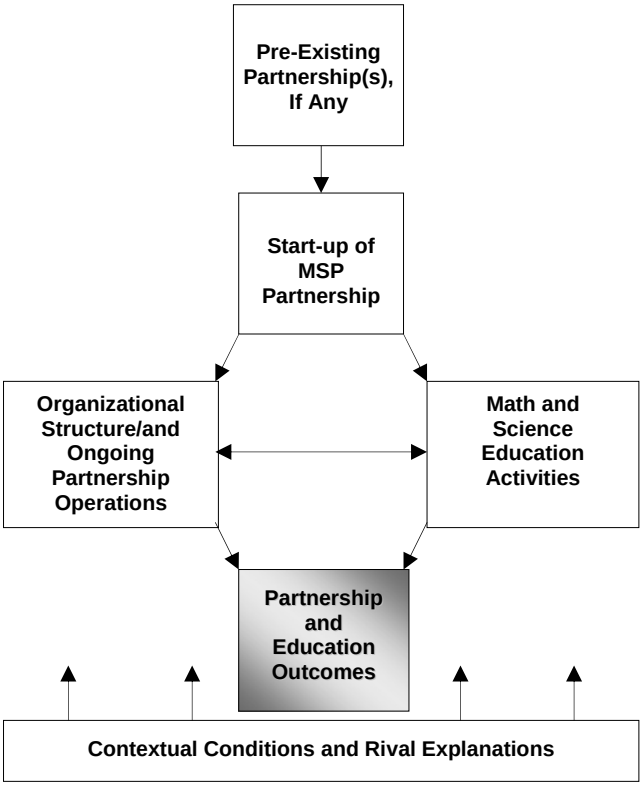

Kaftarian and Yin (1997) discuss the methodological challenges of evaluating the outcomes of community-based partnerships, specifically partnerships for substance abuse prevention. When interventions target individuals, it may be possible to randomly assign some individuals to the interventions and the others to a control group. This, however, is not feasible when the intervention targets an entire community system: its institutions, norms, behaviors, attitudes, and policies. In the latter case, the community itself is the unit of analysis, not the individuals; in these instances, individuals when studied are seen as subunits, nested within the overall unit of analysis. Furthermore, the open systems nature of the partnerships and the complex nature of communities make it very difficult to ascribe change. In a special journal edition on this topic, Kaftarian and Yin present several approaches used to overcome these challenges. Although none of these were, or could be, experimental or quasi-experimental designs, they did each explore alternate explanations

(or rival hypotheses) for the observed changes. Two of these methods included cross-community analysis in which the partnership community was matched with another community with similar demographic characteristics (Yin, et al., 1997).

Kubisch et al. (1998) describe features of comprehensive community initiatives for children and families that make them difficult to evaluate:

- "Horizontal complexity. They work across multiple sectors (social, economic, physical, political, and others) simultaneously and aim for synergy among them.

- Vertical complexity. They aim for change at the individual, family, community, organizational, and systems levels.

- Community building. They aim for strengthened community capacity, enhanced social capital, an empowered neighborhood, and similar outcomes.

- Contextual issues. They aim to incorporate external political, economic and other conditions into their framework, even though they may have little power to affect them.

- Community responsiveness and flexibility over time. They are designed to be community-specific and to evolve in response to the dynamics of the neighborhood and the lessons being learned by the initiative.

- Community saturation. They aim to reach all members of a community, and therefore individual residents cannot be randomly assigned to treatment and control groups for the purposes of assessing the [comprehensive community initiative]

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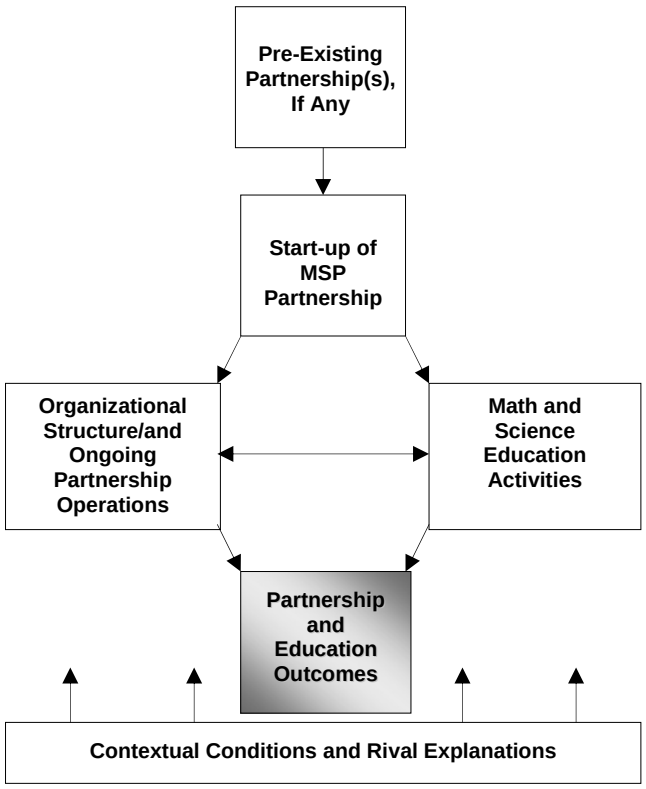

impact; finding equivalent comparison communities is also not feasible."

In a similar vein, Wandersman and Florin (2003) found fewer than expected community interventions (including but not limited to partnerships) that show the desired results. They recommend that future initiatives include "greater articulation of theory, increased sensitivity or measures, improved (or different) methods or designs, and expanded use of best practices."

Key outcomes of the partnership will be documented in subsequent phases of this substudy.

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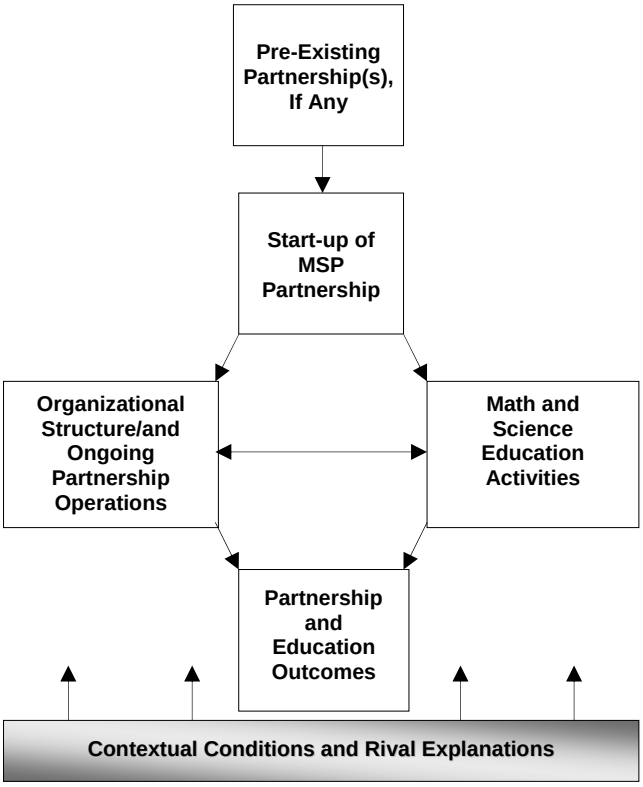

2.7 CONTEXTUAL CONDITIONS

Examining contextual conditions (including partner and community capacity) and rival explanations are a critical component of the partnership evaluation. Two key contextual conditions include partnership capacity and community capacity.

Partnership Capacity. "Constructing effective partnerships among diverse organizations is hard work" (Reich, 2000). The reason organizations are willing to engage in partnership efforts is because of the firm belief that they create value. "To assure a sustainable collaboration, the value created must be useful to society, and value must flow to all core partners" (Reich, 2002).

Brinkerhoff (2002) terms a partnership's relationship outcomes as "value-added," which she describes as follows:

> "Value-added may include qualitative or quantitative synergistic outcomes of the program itself (i.e., aspects of program performance that relate to advantages beyond what the actors could have independently produced), linkages with programs and actors, enhanced capacity and influence of individual partners, and other multiple effects such as program extensions and replication, new programs etc….Another element of the effectiveness and outcomes of the partnership

is the extent to which individual partners meet their own objectives through the partnership."

She adds that value added is challenging to measure because it is difficult to attribute the observed changes to the partnership. She suggests that evaluating these effects of the partnering relationship is usually perception- or consensus-based, and is closely related to partner satisfaction.

Successful partnerships provide positive organizational returns to all partners and change and strengthen the partnership itself, thereby increasing trust and mutual respect among partners and more sharing of resources and project ownership (HUD, 2002). This section examines the enhanced capacity of the partnership, the partners, and the targeted community.

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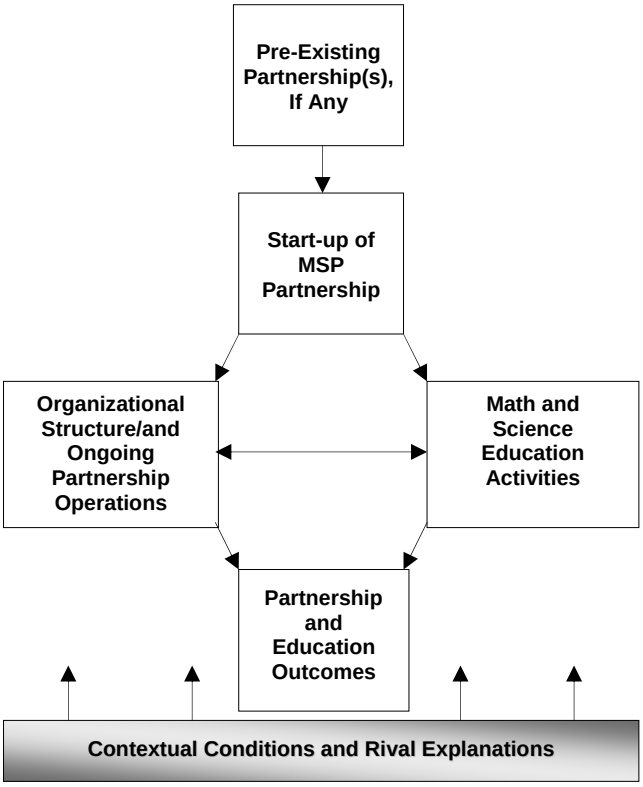

HUD's Office of University Partnerships (HUD, 2002) identifies four types of partnerships, the most effective of which is the capacity building model. The other three models are: 1) the paternalistic/theory testing model in which the university poses the questions and uses the community to test its theories; 2) the professional/expertise model in which either party can ask the questions but the university provides the answers; and 3) the resource model which is similar to the professional/expertise model but is somewhat more community-focused in that the university is available to help as needed "but does not set the agenda." The empowerment/capacity building model, on the other hand, "emphasizes the building of the power and capacity of local community organizations and residents to formulate and carry out their own planning, research, and implementation. College and university personnel work alongside, gaining as well from the collaboration (building their capacity to work with and learn from the community)."

Holland (2001) describes an effective academic institution as one that is "committed to direct interaction with external constituencies and communities through mutually beneficial exchange, exploration, and application of knowledge, expertise,

and information. These interactions enrich and expand the learning and discovery functions of the academic institution while also enhancing community capacity." An important benefit of university engagement in partnership activities is the service learning of students (Greenberg, et al., 2003).

Rothwell (2004) defines organizational learning as " how organizations gain experience, reflect upon it and even anticipate new experience as a means of gaining competitive advantage." According to Peter Senge, author *of The Fifth Discipline: The Art and Practice of the Learning Organization* (as quoted by Rothwell), "The organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at all levels of the organization." Senge's learning organization possesses five characteristics that encourage learning:

1) ***Systems thinking***—the ability to see the whole as well as the parts;

2) ***Personal mastery***—individuals become committed to their own lifelong learning;

3) ***Mental models***—images that influence how individuals understand the world and how they take action;

4) ***Building shared vision***—the ability to create a compelling vision that excites others to action and builds enthusiasm for the organization's goals and strategic objectives; and

5) ***Team learning***—the ability of individuals to work and learn effectively together in groups.

Gouvis Roman et al. (2002) conducted an extensive literature review and conducted focus groups with community justice partnerships to determine those characteristics of community organizations that are important to the development of capacity to partner for community justice initiatives. They identified three key organizational

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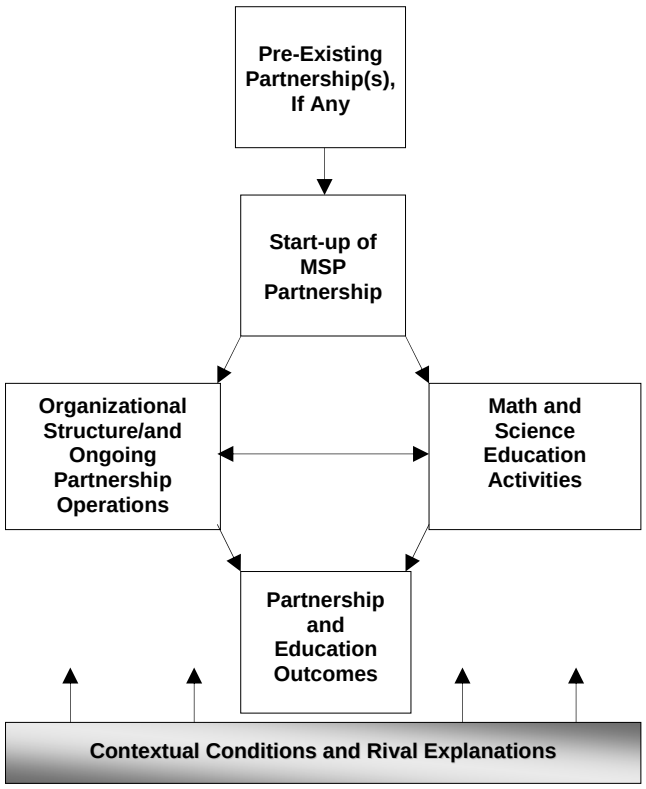

characteristics: 1) leadership; 2) resources; and 3) orientation.

Community Capacity. Chaskin (2001), having reviewed the many definitions of community capacity, finds that each of these various definitions "places a different relative emphasis on various dimensions of community capacity. Some focus largely on organizations, others on affective connections and shared values, and still others on processes of participation and engagement." He concludes that taken together, the various definitions agree on the following aspects of community capacity. Community capacity includes: 1) the existence of resources (ranging from the skills of individuals to the strength of organizations to financial capital); 2) networks of relationships; 3) leadership; and 4) some type of mechanism for community members to engage in collective action and problem solving.

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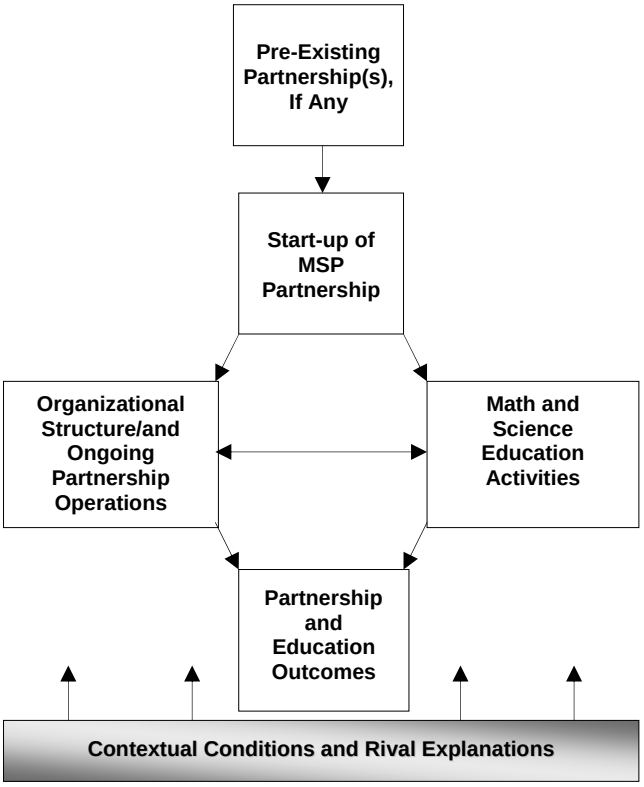

When discussing networks of relationships, Chaskin refers to social capital. The term "social capital" appears throughout the literature on community capacity, drawing on the seminal work on social capital by Bourdieu (1983), Coleman (1988), and Putnam (1993). Putnam (1996) defines social capital as the "Networks, norms, and trust that enable participants to act together more effectively to pursue shared objectives."

Boris (1999) in an examination of the role of nonprofit organizations reports on "the central role that formal and informal nonprofit organizations play in creating the glue that holds communities together and the avenues they provide for civic participation." He writes, "Nonprofit organizations, regardless of origin, create networks and relationships that connect people to each other and to institutions quite apart from the organization's primary purposes. Those relationships build social capital, the cooperative networks that permit individuals to work together for mutual goals."

A distinction can be made between horizontal social capital that essentially links community members with their peers, and vertical social capital that links community members with those with

political, economic, and other power (Grootaert, 2003).

2.8 MEASURING PARTNER AND COMMUNITY CAPACITY

Partner Capacity. Many of the measures listed earlier in this document, if administered at different points in time, can be used to measure increased capacity of the partnership and its partner organizations. Rothwell (2004) has developed a set of self-assessment questions to measure institutional learning.

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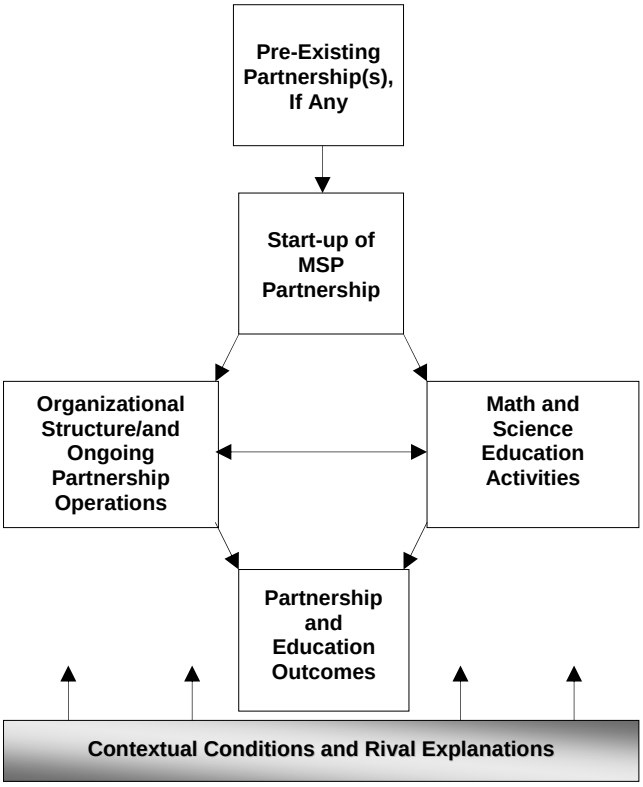

Community Capacity. Bartle (2003) proposes analyzing the strength, power, or capacity of a community by measuring change in the following features of the community: altruism, common values, communal services, communications, confidence, political and administrative context, information, intervention, leadership, networking, organization, political powers, skills, and wealth. He recommends that community members (not just those in power) assess whether there has been an increase in any of these dimensions. However, to prevent bias, he recommends the collection of complementary data (such as the number and type of communal services). This includes facilitator handouts designed for participatory measurement of the strength of each of the above dimensions. The first measure provides an estimate of strength. Both measures examine the current status and ask participants for a retrospective assessment of change over the past 12 months and the previous five years.

Gardner (1995) developed a collaborative assessment of capacity. The instrument is designed as a guide for county-level youth and family collaboratives. It covers 10 elements of collaborative capacity: governance and accountability, outcomes, financing, non-financial resources, community and parent ownership, staff and leadership development, program strategies, policy agenda development, organizational coherence, and addressing the equity issue.

Putnam (Hudson and Chapman, 2002) proposed a social capital questionnaire as a supplement to the

2002 Census Bureau's Current Population Survey (CPS).

Grootaert et al. (2003) have developed an instrument to measure social capital of communities in underdeveloped countries. Nevertheless, with some revision, some of the questions may be applicable to the MSPs. As Grootaert points out, the content and phrasing of questions will be not appropriate in all countries, and locally important questions may need to be added. The Social Capital Questionnaire collects data on six dimensions: 1) groups and networks; 2) trust and solidarity; 3) collective action and cooperation; 4) information and communication; 5) social cohesion and inclusion; and 6) empowerment and political action.

Healy (2003) reviewed the international literature to identify measures of social capital (quite a few instruments exist to examine social capital in developing countries). He concludes that "a single measure approach to social capital based on, for example, numbers of associations, membership rates or generalized trust offers a very limited means for measuring the extent of social capital." He includes examples and selections of questions on social capital from a number of international surveys. He recommends that the measurement of social capital be approached at a number of levels:

- Standardized questions on trust, civic engagement, social support networks, etc., in large-scale household surveys;
- Surveys of observed or reported human behavior;
- Specific and contextual questions on relationships, attitudes, and behavior in community or organizational-specific surveys neighborhood, enterprise or school;
- Case-study, qualitative, or action-based research, which seeks to explore the meaning and interpretation of social interaction in a particular situation or context; and

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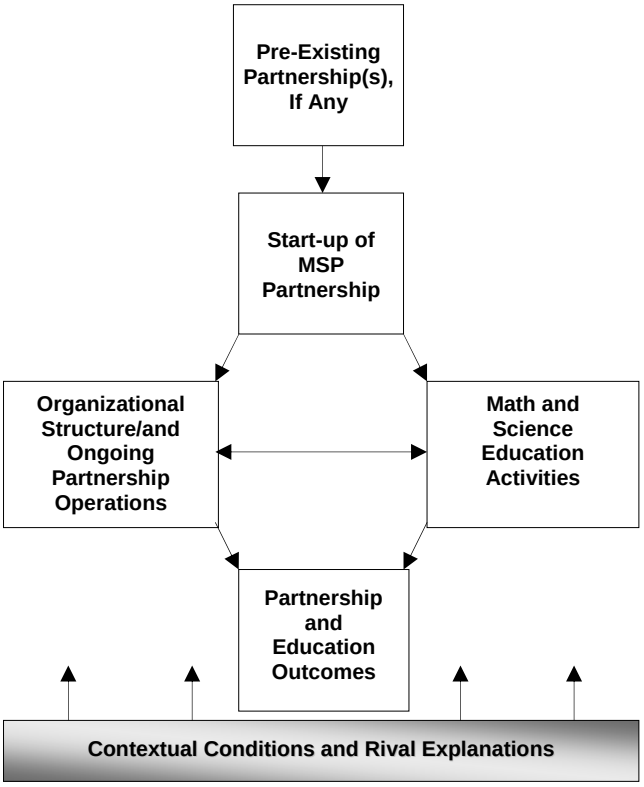

- Randomized social experiments that seek to combine measurement with active policy intervention and "laboratory-simulated" conditions.

Bjornslov and Tinggaard Svendson (2003) examined existing measurement systems, and identified four dominant operational features of social capital measures: 1) the trust radius of a population as measured by the percentage of a population believing that people can be trusted; 2) the density of voluntary organizations in a given area, as measured by the number of organizations in which an average resident participates; 3) community members' perceptions of honesty and corruption; and 4) measures of economic freedom. They conclude that one may need to divide social capital into two dimensions: one dimension in which social capital refers to honesty and trust in both individuals and institutions and another dimension that refers to civic participation.

Gouvis Roman and Moore (2004) used the following data sources to measure social capital in several District of Columbia neighborhoods: secondary data on organizations in the community—including the National Center for Charitable Statistics database (http://nccs.urban.org), and interviews with representatives of community organizations.

Bullen and Onyx (1998) present a social capital instrument and practitioners guide used to measure social capital in five communities in New South Wales, Australia.

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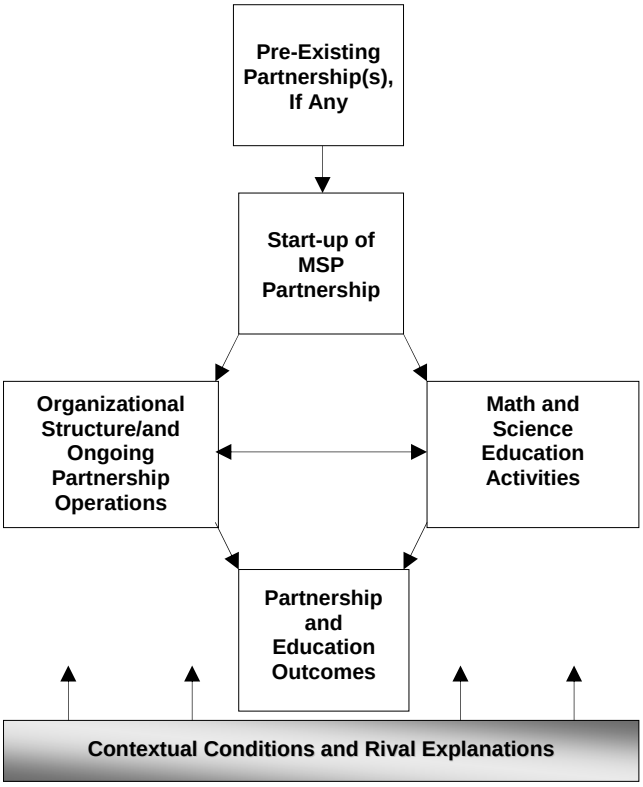

2.9 RIVAL EXPLANATIONS

During the primary data collection phase of this substudy, rival explanations will be examined in relation to the partnership. One of the initial areas that will be explored will be the impact of pre-existing partnerships on the current one. For example, did the partnership have parallel requirements and support a similar partnering effort? Did the pre-existing partnership contribute to

accelerating or impeding the progress of implementation of the current grant?

2.10 LOOKING AHEAD

In looking ahead, the question of *Why partnerships?* becomes increasingly important. Overall, it will be critical to understand whether and how partnerships with STEM discipline faculty engagement helped to define and accomplish the MSP Program's math and science education goals and objectives. Have the partnerships created something greater than the sum of what the individual partners could have done?

The partnership as a whole brings more skills, resources, and diversity. A single organization also may be more vulnerable to unanticipated circumstances such as turnover or internal crises. In this situation, the partnership composed of multiple partners will have more resources to sustain itself through unexpected challenges. In principle, K-16 (vertical integration) ensures continuity of math and science at any given level and cross-district (horizontal) promotes collaboration that spans these areas.

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APPENDIX A

Partnership Questions in the Math and Science Partnership Program Management Information System (MSP-MIS)

APPENDIX A

PARTNERSHIP QUESTIONS IN THE MATH AND SCIENCE PARTNERSHIP PROGRAM MANAGEMENT INFORMATION SYSTEM (MSP-MIS)[1]

Annual IHE Participant Survey, 2003-2004

Question	Response Options
Using the table below, identify the Management and other MSP-related Activities that you participated in during the 2003-04 school year. a) Serve as a member of the partnership management structure (e.g. help develop a strategic plan, participate in monthly MSP management meetings) b) Help develop joint databases or facilitate data sharing between K-12 and IHE partners c) Help create formal links between all MSP core partners (e.g., establish connections between high school STEM departments and corresponding disciplinary fields at your IHE) d) Help align teacher certification program requirements among partner IHEs (e.g., adopt a common course numbering or sequencing system)	1. Yes 2. No

Annual Project Survey, 2003-2004

Question	Response Options
Partnership organization name:_____	N/A
Is this organization a core or supporting partner?	1. Core partner (i.e., a partner that shares responsibility and accountability for the MSP project. All core partner organizations are required to provide evidence of their commitment to undergo the coordinated institutional change necessary to sustain the partnership effort beyond the funding period.) 2. Supporting partner (i.e., a partner that is not required to commit to the institutional change necessary to sustain project activities beyond the funding period, but is an important stakeholder/stakeholder organization in K-12 mathematics and science education.)

(Continued on next page)

[1]No questionnaire items pertaining to partnerships were located in the Annual Institution of Higher Education (IHE) Survey, 2003-2004. Questions highlighted on page two are most relevant to the partnership study.

Partnership Questions (Continued)

Question	Response Options
Provide the following information for the primary MSP contact at this partnership organization.	1. Name 2. Title 3. Street Address 4. City 5. State 6. Zip code 7. Phone number 8. Fax number 9. E-mail 10. Web address
To what extent did each of the following hinder your efforts to engage or organize your partners during the [INSERT SCHOOL YEAR] school year? a. Lack of time or other resources among *IHE* partners b. Lack of time or other resources among *K-12* partners c. Lack of time or other resources among *other* partners d. Low levels of commitment or interest among *IHE* partners e. Low levels of commitment or interest among *K-12* partners f. Low levels of commitment or interest among *other* partners g. Lack of flexibility among *IHE* partners h. Lack of flexibility among *K-12* partners i. Lack of flexibility among *other* partners j. Conflicting goals or missions among all MSP partners k. Unbalanced levels or authority and decision making ability among core MSP partners l. Poor communication among all MSP partners	1. To a large extent 2. To a moderate extent 3. To a small extent 4. Not at all
What lessons have you learned regarding efforts to engage partners that would be of use to other MSP projects?	N/A
Describe any new practices or policies that your IHE partners implemented during the [INSERT SCHOOL YEAR] school year to reward IHE STEM faculty for (a) strengthening their own teaching practices or (b) participating in K-20 teacher preparation and professional development programs.	N/A
Describe any new practices or policies that your IHE partners implemented during the [INSERT SCHOOL YEAR] school year to encourage the IHE STEM faculty to take responsibility and accountability for MSP project goals *(e.g., tie bonuses or tenure to achievement of MSP goals).*	N/A
Describe any new practices or polices that your K-12 partners implemented during the [INSERT SCHOOL YEAR] school year to bring about institutional change (e.g., through the redirection of resources).	N/A
Describe any steps taken during the [INSERT SCHOOL YEAR] school year to encourage the long-term involvement and commitment of non-IHE mathematics, scientists, and/or engineers to participate in the improvement of K-20 educational practices.	N/A
To what extent did each of the following hinder your efforts to make use of data to assess the implementation and impact of your MSP during the [INSERT SCHOOL YEAR] school year? g. Lack of available funding at the project *or* partner level h. Lack of available expertise at the project *or* partner level	1. To a large extent 2. To a moderate extent 3. To a small extent 4. Not at all 5. Not applicable
(For projects currently working with one or more RETAs) To what extent did each of following hinder your ability to get involved with RETAs during the previous year? c. Convincing MSP partners that working with RETAs can benefit our project	1. To a large extent 2. To a moderate extent 3. To a small extent 4. Not at all
12. (For projects not working with any RETAs) Did any of the following hinder your ability to get involved with RETAs during the previous year? (Check all that apply)	1. Not knowing how to approach the RETAs (check *one* response)

(Continued on next page)

Partnership Questions (Continued)

Question	Response Options
	2. Not knowing who to contact at the RETAs (check *one* response) 3. Convincing certain MSP **partners** that working with RETAs can benefit our project 4. Not being able to find a good match between our activities and those of certain RETAs 5. Other:_____ 6. None of the above

Annual K-12 District Survey, 2003-2004

Question	Response Options
Indicate the number of K-12 participants in your district who were involved in the development and/or delivery of MSP activities during the [INSERT SCHOOL YEAR] school year: *NOTE – Count only those K-12 participants who were involved in the development and/or delivery of MSP activities, such as:* • Co-teaching a pre-service course at a **partner** IHE • Revising challenging course curricula to align with state standards • Presenting at a summer institute *Do **NOT** count K-12 participants who were <u>recipients</u> of an MSP activity, such as:* • Guidance counselors who received professional development • New K-12 teachers who took part in an induction program • K-12 administrators who attended a weekend seminar	1. Number of teachers 2. Number of principals, vice principals, and assistant principals 3. Number of instructional coordinators and supervisors (e.g., curriculum specialists) 4. Number of guidance counselors 5. Number of district-level administrators/staff 6. Other (specify)

APPENDIX B

Proposed NSF-MSP Partner versus Partner Reported after First Year of Award

APPENDIX B

PROPOSED NSF-MSP PARTNER VERSUS PARTNER REPORTED AFTER FIRST YEAR OF AWARD

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS		IHE PARTNERS/ CLASSIFICATION CODE*		OTHER PARTNERS	
COMPREHENSIVE: Cohort I						
2. New Jersey Math Science Partnership Rutgers University	**Proposed:** 1. Union City 2. Roselle 3. Phillipsburg 4. Asbury Park 5. Bound Brook, 6. New Brunswick, 7. Plainfield 8. South Bound Brook 9. Toms River 10. Bridgeton 11. Millville 12. Vineland **Total No. Districts:** (12)	**Enacted:** 1. Union City 2. Roselle 3. Phillipsburg 4. Asbury Park 5. Bound Brook, 6. New Brunswick, 7. Plainfield 8. South Bound Brook 9. Toms River 10. Bridgeton 11. Millville 12. Vineland **Total No. Districts:** (12)	**Proposed:** 1. Rutgers University, New Brunswick (*William Firestone, PI, Professor, Graduate School of Education*) **8** 2. Rowan University (*Janet Caldwell, Co-PI, Professor of Mathematics*) **11** 3. Kean University (*Sharon Brendzel, Co-PI, Professor of Science Education*) **11** **Total IHEs:** (3)	**Enacted:** 1. Rutgers University, New Brunswick (*William Firestone, PI, Professor, Graduate School of Education*) **8** 2. Rowan University (*Janet Caldwell, Co-PI, Professor of Mathematics*) **11** 3. Kean University (*Sharon Brendzel, Co-PI, Professor of Science Education*) **11** **Total IHEs:** (3)	**Proposed:** None listed	**Enacted:** None listed
4. El Paso Math and Science Partnership University of Texas El Paso	**Proposed:** 1. Anthony Independent 2. Canutillo Independent 3. Clint Independent 4. Dell City Independent 5. El Paso Independent 6. Fabens Independent 7. Ft. Hancock Independent 8. San Elizario Independent 9. Sierra Blanca Independent 10. Socorro Independent 11. Tornillo Independent 12. Ysleta Independent **Total No. Districts:** (12-all core)	**Enacted:** 1. Anthony Independent 2. Canutillo Independent 3. Clint Independent 4. Dell City Independent 5. El Paso Independent 6. Fabens Independent 7. Ft. Hancock Independent 8. San Elizario Independent 9. Sierra Blanca Independent 10. Socorro Independent 11. Tornillo Independent 12. Ysleta Independent **Total No. Districts:** (12-all core)	**Proposed:** 1. El Paso Community College (core) **6** 2. University of Texas at El Paso (*Susana Navarro, PI, Executive Director, The El Paso Collaborative for Academic Excellence*) ; (*Stephen Riter, Co-PI, Provost, Vice President for Academic Affairs, Professor of Electrical Engineering*) **9** **Total IHEs:** (2)	**Enacted:** 1. El Paso Community College (core) **6** 2. University of Texas at El Paso (*Susana Navarro, PI, Executive Director, The El Paso Collaborative for Academic Excellence*) ; (*Stephen Riter, Co-PI, Provost, Vice President for Academic Affairs, Professor of Electrical Engineering*) **9** **Total IHEs:** (2)	**Proposed:** 1. Region 19 Education Service Center (core), (*James Vasquez, Co-PI, Executive Director*) 2. Greater El Paso Chamber of Commerce (supporting) 3. Hispanic Chamber of Commerce (supporting) 4. Black Chamber of Commerce (supporting) 5. Texas Business & Education Coalition (supporting) 6. El Paso Interreligious Sponsoring Organization (supporting) 7. Mayor of El Paso (supporting) 8. El Paso County Judge (supporting) **Total Other:** (8)	**Enacted:** 1. Region 19 Education Service Center (core), (*James Vasquez, Co-PI, Executive Director*) 2. Greater El Paso Chamber of Commerce (supporting) 3. Hispanic Chamber of Commerce (supporting) 4. Black Chamber of Commerce (supporting) 5. Texas Business & Education Coalition (supporting) 6. El Paso Interreligious Sponsoring Organization (supporting) 7. Mayor of El Paso (supporting) 8. El Paso County Judge (supporting) **Total Other:** (8)

* Classification code refers to The Carnegie Classification of Institutions of Higher Education, May 30, 2006 Edition. For legend, see last page of table.

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS		IHE PARTNERS/ CLASSIFICATION CODE*		OTHER PARTNERS	
TARGETED: Cohort I						
16. Vermont Mathematics Partnership Vermont Institute for Science and Math	**Proposed:** 1. Barre City 2. Hartford 3. Milton Id 4. South Burlington **Total No. Districts:** (4)	**Enacted:** 1. Barre City 2. Hartford 3. Milton Id 4. South Burlington **Total No. Districts:** (4)	**Proposed:** 1. Castleton State College **13** 2. Norwich University **12** 3. University of Vermont (*Kenneth Gross, PI, Director of Vermont Mathematics Initiative, Professor of Mathematics and Education*) **9** **Total IHEs:** (3)	**Enacted:** 1. Castleton State College **13** 2. Norwich University **12** 3. University of Vermont (*Kenneth Gross, PI, Director of Vermont Mathematics Initiative, Professor of Mathematics and Education*) **9** **Total IHEs:** (3)	**Proposed:** State: 1. Vermont Department of Education Other: 1. Vermont Mathematics Initiative 2. Vermont Institute for Science and Math (*Douglas Harris, Co-PI, Executive Director, VT Institute for Science and Math Technology*) **Total Other:** (3)	**Enacted:** State: 1. Vermont Department of Education Other: 1. Vermont Mathematics Initiative 2. Vermont Institute for Science and Math (*Douglas Harris, Co-PI, Executive Director, VT Institute for Science and Math Technology*) **Total Other:** (3)

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AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS		IHE PARTNERS/ CLASSIFICATION CODE*		OTHER PARTNERS	
TARGETED: Cohort II						
32. The Mathematics and Science Partnership of Greater Philadelphia (MSPGP) LaSalle University	**Proposed:** 1. Allentown 2. Bangor Area 3. Bensalem (*Victoria Gehrt, Co-PI, Superintendent*) 4. Bethlehem 5. Bristol Township 6. Centennial 7. Cheltenham 8. Colonial 9. Easton 10. Hatboro-Horsham 11. Haverford Township 12. Interboro 13. Lancaster 14. Nazareth Area 15. New Hope-Solebury 16. Norristown 17. North Hampton Area 18. North Penn 19. Octorara 20. Palisades 21. Penn Delco	**Enacted:** 1. Allentown 2. Bangor Area 3. Bensalem (*Victoria Gehrt, Co-PI, Superintendent*) 4. Bethlehem 5. Bristol Township 6. Centennial 7. Cheltenham 8. Colonial 9. Easton 10. Hatboro-Horsham 11. Haverford Township 12. Interboro 13. Lancaster 14. Nazareth Area 15. New Hope-Solebury 16. Norristown 17. North Hampton Area 18. North Penn 19. Octorara 20. Palisades 21. Penn Delco	**Proposed:** 1. LaSalle University (core), (*F. Joseph Merlino, PI, MSPGP*) **10** 2. Arcadia University (core), (*Deborah Pomeroy, Co-PI, Assoc. Professor and Coordinator of the Science Education Program*) **11** 3. Bryn Mawr College (core), (*Victor Donnay, Co-PI, Professor - Mathematics*) **14** 4. Cedar Crest College (core) **14** 5. Haverford College (core) **14** 6. Lehigh Carbon County Community College (core) **5** 7. Lincoln University (core) **12** 8. Moravian College (core) **14** 9. Muhlenberg College (core) **14**	**Enacted:** 1. LaSalle University (core), (*F. Joseph Merlino, PI, MSPGP*) **10** 2. Arcadia University (core), (*Deborah Pomeroy, Co-PI, Assoc. Professor and Coordinator of the Science Education Program*) **11** 3. Bryn Mawr College (core), (*Victor Donnay, Co-PI, Professor - Mathematics*) **14** 4. Cedar Crest College (core) **14** 5. Haverford College (core) **14** 6. Lehigh Carbon County Community College (core) **5** 7. Lincoln University (core) **12** 8. Moravian College (core) **14** 9. Muhlenberg College (core) **14**	**Proposed:** None listed	**Enacted:** 1. Da Vinci Discovery Center (supporting) 2. Math Forum at Drexel University (supporting) 3. Research for Better Schools (supporting) 4. MAGPI Power Networking 5. WHYY, Inc. **Total Other:** (5)

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AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS		IHE PARTNERS/ CLASSIFICATION CODE*		OTHER PARTNERS	
	22. Pennridge **23. Phillipsburg-Osceola Area**[1] 24. Quakertown Community 25. Radnor 26. Ridley 27. Rose Tree Media 28. Saucon Valley 29. Southeast Delco 30. Springfield Township 31. Wallingford/ Swarthmore 32. William Penn 33. Berlin Borough 34. Camden County Vocation 35. Cherry Hill Public 36. Collingswood Public 37. Eatern Camden County 38. Gloucester City 39. Gloucester Technical School 40. Haddon Township 41. Haddon Heights Public 42. Lindenwold 43. Northern Burlington Regional 44. Riverton Public 45. Phillipsburg 46. Winslow Township **Total No. Districts:** (46)	22. Pennridge 23. Quakertown Community 24. Radnor 25. Ridley 26. Rose Tree Media 27. Saucon Valley 28. Southeast Delco 29. Springfield Township 30. Wallingford/ Swarthmore 31. William Penn 32. Berlin Borough 33. Camden County Vocation 34. Cherry Hill Public 35. Collingswood Public 36. Eatern Camden County 37. Gloucester City 38. Gloucester Technical School 39. Haddon Township 40. Haddon Heights Public 41. Lindenwold 42. Northern Burlington Regional 43. Riverton Public 44. Phillipsburg **45. Pennsauken**[2] 46. Winslow Township **Total No. Districts:** (46)	10. Northhampton Community College (core) **6** 11. Villanova University (core) **11** 12 West Chester University (core) **11** 13. Widener University (core) **10** **Total IHEs:** (13)	10. Northhampton Community College (core) **6** 11. Villanova University (core) **11** 12 West Chester University (core) **11** 13. Widener University (core) **10** **Total IHEs:** (13)		

[1]Proposed but not enacted.

[2]Enacted but not proposed.

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AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS		IHE PARTNERS/ CLASSIFICATION CODE*		OTHER PARTNERS	
TARGETED: Cohort III						
37. Boston Science Partnership University of Mass. - Boston	**Proposed:** 1. Boston Public (Core) (*Marilyn Decker, Co-PI, Senior Program Director, Science*) **Total No. Districts:** (1)	**Enacted:** 1. Boston Public (Core) (*Marilyn Decker, Co-PI, Senior Program Director, Science*) **Total No. Districts:** (1)	**Proposed:** 1. University of Massachusetts Boston (Core), (*Dr. Hannah Sevian, PI; Asst. Professor of Curriculum & Instruction, Graduate College of Education; Dept. of Chemistry, College of Science and Mathematics*; *Robert Chen, Co-PI, Professor, Organic Geochemistry, Marine Organic Chemistry*; *Arthur Eisenkraft, Co-PI, Distinguished Professor of Science Education*) **10** 2. Northeastern University (core); (*Christos Zahopoulos, Co-PI, Research Professor*) **9** 3. Harvard Medical School (supporting) **8** **Total IHEs:** (3)	**Enacted:** 1. University of Massachusetts Boston (Core), (*Dr. Hannah Sevian, PI; Asst. Professor of Curriculum & Instruction, Graduate College of Education; Dept. of Chemistry, College of Science and Mathematics*; *Robert Chen, Co-PI, Professor, Organic Geochemistry, Marine Organic Chemistry*; *Arthur Eisenkraft, Co-PI, Distinguished Professor of Science Education*) **10** 2. Northeastern University (core); (*Christos Zahopoulos, Co-PI, Research Professor*) **9** 3. Harvard Medical School (supporting) **8** **Total IHEs:** (3)	**Proposed:** 1. College Board (supporting) **Total Other:** (1)	**Enacted:** 1. College Board (supporting) **Total Other:** (1)
41. A Greater Birmingham Partnership: Building Communities of Learners and Leaders in Middle School Mathematics Birmingham-Southern College	**Proposed:** 1. Bessemer City (core) 2. Fairfield City (core) 3. Homewood City (core) 4. Hoover City (core) 5. Jefferson County (core) 6. Mountain Brook City (core) 7. Shelby County (core) 8. Vestavia City School System (core) **Total No. Districts:** (8)	**Enacted:** 1. Bessemer City (core) 2. Fairfield City (core) 3. Homewood City (core) 4. Hoover City (core) 5. Jefferson County (core) 6. Mountain Brook City (core) 7. Shelby County (core) 8. Vestavia City School System (core) **Total No. Districts:** (8)	**Proposed:** 1. Birmingham-Southern College (core); (*Bernadette Mullins, PI, Assoc. Professor of Mathematics*) **14** 2. University of Alabama at Birmingham (core) **8** **Total IHEs:** (2)	**Enacted:** 1. Birmingham-Southern College (core); (*Bernadette Mullins, PI, Assoc. Professor of Mathematics*) **14** 2. University of Alabama at Birmingham (core) **8** **Total IHEs:** (2)	**Proposed:** 1. Math Education Collaborative **Total Other:** (1)	**Enacted:** 1. Math Education Collaborative **Total Other:** (1)

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Carnegie Classification Code Legend:

1 = Assoc/Pub-R-L: Associate's--Public Rural-serving Large

2 = Assoc/Pub-R-M: Associate's--Public Rural-serving Medium

3 = Assoc/Pub-R-S: Associate's--Public Rural-serving Small

4 = Assoc/Pub-S-MC: Associate's--Public Suburban-serving Multicampus

5 = Assoc/Pub-S-SC: Associate's--Public Suburban-serving Single Campus

6 = Assoc/Pub-U-MC: Associate's--Public Urban-serving Multicampus

7 = Assoc/Pub-U-SC: Associate's--Public Urban-serving Single Campus

8 = RU/VH: Research Universities (very high research activity)

9 = RU/H: Research Universities (high research activity)

10 = DRU: Doctoral/Research Universities

11 = Master's L: Master's Colleges and Universities (larger programs)

12 = Master's M: Master's Colleges and Universities (medium programs)

13 = Master's S: Master's Colleges and Universities (smaller programs)

14 = Bac/A&S: Baccalaureate Colleges--Arts & Sciences

15 = Bac/Diverse: Baccalaureate Colleges--Diverse Fields

16 = Tribal: Tribal Colleges

17 = Unkown

Source: Carnegie Foundation for the Advancement of Teaching, *Carnegie Classifications Data File*, May 30, 2006 edition.

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APPENDIX C

Overview of NSF-MSP Partnerships

APPENDIX C

OVERVIEW OF NSF-MSP PARTNERSHIPS

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS	IHE PARTNERS/ CLASSIFICATION CODE*	OTHER PARTNERS	PRIMARY GEOGRAPHIC LOCATION	FORMAL AGREEMENT	PRELIMINARY PATRNERSHIP SELF-ASSESSMENT OR EVALUATION ACTIVITIES**	NOTES
COMPREHENSIVE: Cohort I							
1. North Carolina Partnership for Improving Mathematics and Science (NC-PIMS) University of North Carolina	1. Beaufort County 2. Bladen County 3. Brunswick County 4. Columbus County 5. Craven County 6. Cumberland County - (*Dr. William C. Harrison, Co-PI*) 7. Duplin County 8. Edgecombe County 9. Greene County 10. Hoke County 11. Jones County 12. Martin County 13. Onslow County 14. Pitt County 15. Sampson County 16. Wayne County 17. Wilson County **Total No. Districts:** (17) **Grade Level:** K-12 **Total No. of schools in partner districts:** 368 **Total No. of schools participating in MSP activities:** 368 **District Description:** The school districts have a student population in excess of 204,000 (40% classified as minority) and share common characteristics of being rural and poor relative to state averages.	1. East Carolina University; (*Dr. Sidney L. Rachlin, Co-PI; Professor - Math Education)* **10** 2. Fayetteville State University **13** 3. North Carolina State University; *(Dr. David Haase, Co-PI, Professor of Physics, Director of The Science House)* **8** 4. UNC Chapel Hill (*Dr. Verna L. Holoman, PI, Executive Director, NC Math & Science Education Network*) **8** 5. UNC at Greensboro **9** 6. UNC at Pembroke; *(Dr. Jose' J. D'Arruda, Co-PI; Chair – Department of Chemistry & Physics*) **12** 7. UNC Wilmington **11** **Total IHEs:** (7)	State: 1. North Carolina Department of Public Instruction; *(William J. Tucci, Co-PI*) **Total Other:** (1)	Eastern North Carolina	Articles of Collaboration	None listed	**Total No. of partners**: **(25)**

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** Activities include only those undertaken by the partners, not the local evaluator.

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS	IHE PARTNERS/ CLASSIFICATION CODE*	OTHER PARTNERS	PRIMARY GEOGRAPHIC LOCATION	FORMAL AGREEMENT	PRELIMINARY PATRNERSHIP SELF-ASSESSMENT OR EVALUATION ACTIVITIES**	NOTES
2. New Jersey Math Science Partnership Rutgers University	1. Union City 2. Roselle 3. Phillipsburg 4. Asbury Park 5. Bound Brook, 6. New Brunswick, 7. Plainfield 8. South Bound Brook 9. Toms River 10. Bridgeton 11. Millville 12. Vineland **Total No. Districts:** (12) **Grade Level:** preK-12 **Total No. of schools in partner districts:** 110 **Total No. of schools participating in MSP activities:** 110 **District Description:** The 12 districts are characterized as small and medium-sized urban districts with poor, high minority, and low-achieving student populations. The schools enroll over 75,000 students of whom 27% are African American and 31% are Hispanic.	1. Rutgers University, New Brunswick (*William Firestone, PI, Professor, Graduate School of Education*) **8** 2. Rowan University (*Janet Caldwell, Co-PI, Professor of Mathematics*) **11** 3. Kean University (*Sharon Brendzel, Co-PI, Professor of Science Education*) **11** **Total IHEs:** (3)	None listed	State of New Jersey	None listed	None listed	**Total No. of partners (15)** 8 of the 12 school districts were among the 30 plantiffs in NJ's 20-year long Abbott vs. Burke litigation, and have recently benefitted from remedies ordered by the State Supreme Court.

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AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS	IHE PARTNERS/ CLASSIFICATION CODE*	OTHER PARTNERS	PRIMARY GEOGRAPHIC LOCATION	FORMAL AGREEMENT	PRELIMINARY PATRNERSHIP SELF-ASSESSMENT OR EVALUATION ACTIVITIES**	NOTES
3. Appalachian Mathematics and Science Partnership University of Kentucky	1. Bath County 2. Breathitt County 3. Carter County 4. Casey County 5. Clark County 6. Clay County 7. Clinton County 8. Corbin Independent 9. Estill County 10. Floyd County 11. Frankfort Independent 12. Garrard County 13. Harlan County 14. Jackson Independent 15. Jessamine County 16. Johnson County 17. Knott County 18. Lee County 19. Letcher County 20. Lewis County 21. Lincoln County 22. Madison County 23. Martin County 24.McCreary County 25. Montgomery County 26. Morgan County 27. Owsley County 28. Paris Independent 29. Pike County 30. Pikeville Independent 31. Powell County 32. Pulaski County 33. Rockcastle County 34. Rowan County 35. Washington County 36. Wayne County 37. Whitley County 38. Woodford County 39. Alvin C. York Agricultural Institute 40. Anderson County 41. Campbell County	1. Eastern Kentucky University **11** 2. Kentucky State University **15** 3. Morehead State University **11** 4. Pikeville College **14** 5. Union College **12** 6. University of Virginia College at Wise **14** 7. University of Tennessee, Knoxville **8** 8. Prestonsburg Community College **2** 9. Somerset Community College **1** 10. University of Kentucky (*Paul Eakin, PI, Professor of Mathematics*); (*Ronald Atwood, Co-PI, Professor of Science Education*); (*Carl Lee, Co-PI, Professor of Mathematics*) **8** **Total IHEs:** (10)	1. Kentucky Science and Technology Corporation (Appalachian Rural Systemic Initiative) (*Stephen Henderson, Co-PI, Director*) **Total Other:** (1)	Central and Eastern Kentucky; Eastern Tennessee; Western Virginia	None listed	None listed	**Total No. of partners (63)** Donald Long is also a Co-PI, although his institution and title are not named.

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** Activities include only those undertaken by the partners, not the local evaluator.

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS	IHE PARTNERS/ CLASSIFICATION CODE*	OTHER PARTNERS	PRIMARY GEOGRAPHIC LOCATION	FORMAL AGREEMENT	PRELIMINARY PATRNERSHIP SELF-ASSESSMENT OR EVALUATION ACTIVITIES**	NOTES
	42. Cumberland County 43. Grainger County 44. Harriman City 45. Johnson County 46. Oneida Special School 47. Scott County 48. Dickenson County 49. Russel County 50. Scott County 51. Tazewell County 52. Wise County **Total No. Districts:** (52) **Grade Level:** preK-12 **Total No. of schools in partner districts:** 478 **Total No. of schools participating in MSP activities:** 478 **District Description:** The Appalachian regions of the three states are characterized by low socio-economic status (income rates are 62-81% of national average) with over one-third of children living in poverty. The student achievement for the almost 170,000 students is significantly lower than state averages.						

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AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	DISTRICT PARTNERS	IHE PARTNERS/ CLASSIFICATION CODE*	OTHER PARTNERS	PRIMARY GEOGRAPHIC LOCATION	FORMAL AGREEMENT	PRELIMINARY PATRNERSHIP SELF-ASSESSMENT OR EVALUATION ACTIVITIES**	NOTES
4. El Paso Math and Science Partnership University of Texas El Paso	1. Anthony Independent 2. Canutillo Independent 3. Clint Independent 4. Dell City Independent 5. El Paso Independent 6. Fabens Independent 7. Ft. Hancock Independent 8. San Elizario Independent 9. Sierra Blanca Independent 10. Socorro Independent 11. Tornillo Independent 12. Ysleta Independent **Total No. Districts:** (12-all core) **Grade Level:** K-12 **Total No. of schools in partner districts:** 39 **Total No. of schools participating in MSP activities:** 39 **District Description:** Three urban school districts that encompass El Paso and nine rural districts in El Paso and Hudspeth Counties.	1. El Paso Community College (core) **6** 2. University of Texas at El Paso (*Susana Navarro, PI, Executive Director, The El Paso Collaborative for Academic Excellence*); (*Stephen Riter, Co-PI, Provost, Vice President for Academic Affairs, Professor of Electrical Engineering*) **9** **Total IHEs:** (2)	1. Region 19 Education Service Center (core), (*James Vasquez, Co-PI, Executive Director*) 2. Greater El Paso Chamber of Commerce (supporting) 3. Hispanic Chamber of Commerce (supporting) 4. Black Chamber of Commerce (supporting) 5. Texas Business & Education Coalition (supporting) 6. El Paso Interreligious Sponsoring Organization (supporting) 7. Mayor of El Paso (supporting) 8. El Paso County Judge (supporting) **Total Other:** (8)	El Paso, Texas and surrounding rural areas	None listed	None listed	**Total No. of partners (22)**

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5. Mathematics and Science Partnership: FOCUS Faculty Outreach Collaborations Uniting Scientists, Students and Schools University of California-Irvine	1. Compton Unified 2. Santa Ana Unified 3. Newport-Mesa Unified **Total No. Districts:** (3) **Grade Level:** preK-12 **Total No. of schools in partner districts:** 125 **Total No. of schools participating in MSP activities:** 125 **District Description:** The three districts serve 106,695 students of whom 82% are Hispanic and 11% are African American.	1. University of California-Irvine (*Ronald Stern, PI, Dean, School of Physical Sciences, Prof. of Math; Susan Bryant, Co-PI, Prof., Developmental & Cell Biology, School of Biological Science; Manuel Gomez, Co-PI, Vice Chancellor, Student Affairs, Interim VP; Juan Francisco Lara, Co-PI, Asst. Vice Chancellor, Enrollment Services, Director, Center for Educational Partnerships*) **8** **Total IHEs:** (1)	None listed	Los Angeles, California and surrounding areas	None listed	None listed	**Total No. of partners (4)**

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6. SUPER STEM Education Baltimore County Public Schools (BCPS)	1. Baltimore County Public Schools (*Christine Johns, Co-PI, Deputy Superintendent for Curriculum and Instruction*, *Hays Lantz, Jr., Co-PI, title not given*) **Total No. Districts:** (1) **Grade Level:** K-12 **Total No. of schools in partner districts:** 170 **Total No. of schools participating in MSP activities**: 8 **District Description:** Located in the suburban region around Baltimore, BCPS enrolled 107,322 students during the 2001-2002 academic year. The county is rapidly shifting in ethno-racial characteristics such that in the most recent census indicates that the white students have decreased from 84.9 % in 1990 to 74.4% in 2000. Within BCPS, 33.7% of the students are African American, 59.7% are white, 4.0% are Asian American, and 2.0% are Hispanic.	1. University of Maryland, Baltimore County (UMBC); (*Anne Spence, PI, Assistant Professor*, *Mary Rivkin, Co-PI, title not given, Susan Blunck, Co-PI, title not given*) **9** **Total IHEs:** (1)	None listed	Suburban areas around Baltimore, Maryland.	MOU between Council of Administrative and Supervisory Employees (CASE) and the BOE of BCPS, MOU is an addendum to the BCPS-CASE Negotiated Agreement	The partnership is providing documentation of what works and information about how to construct such a partnership to a wide audience of policy makers and university and school leaders.	**Total No. of partners (2)**

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COMPREHENSIVE: Cohort II							
7. System-Wide Change for All Learners and Educators (SCALE) University of Wisconsin Madison	1. Denver Public (*Sally Mentor Hay, Co-PI, title not given*; *Rosanne Fulton, Co-PI, Executive Director*) 2. Los Angeles Unified (*Ronnie Ephraim, Co-PI, title not given*) 3. Madison Metropolitan (*Mary Ramberg, Co-PI, title not given*) 4. Providence Public (*Thomas Ramirez, Co-PI, title not given*) **Total No. Districts:** (4) **Grade Level:** K-12 **Total No. of schools in partner districts:** 927 **Total No. of schools participating in MSP activities**:927 **District Description:** Districts range from mid-size to large central cities. * Los Angeles and Providence are the largest districts in their respective states, Denver and Madison are the second-largest districts in their states.	1. University of Wisconsin Madison, Wisconsin Center for Education Research (*Terrence Miller, PI, Project Director, Assoc. Dean for the Physical Sciences Graduate School*) **8** 2. University of Pittsburgh, Pittsburgh Campus, Learning Research and Development Center (*Lauren Resnick, Co-PI, Director and Senior Scientist; Christian Schunn, Co-PI, Asst. Professor, Instruction and Learning School*) **8** 3. California State University-Dominguez Hills **11** **Total IHEs:** (3)	None listed	Madison, Wisconsin; Denver, Colorado; Los Angeles, California; and Providence, Rhode Island	None listed	None listed	**Total No. of partners (7)** Andrew Porter is also a Co-PI and is the Director of the Learning Sciences Institute. (not a SCALE partner)

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8. Puerto Rico Math and Science Partnership University of Puerto Rico-Rio Piedras	1. Puerto Rico Department of Education **Total No. Districts:** (1) **Grade Level:** K-12 **Total No. of schools in partner districts:** 1532 **Total No. of schools participating in MSP activities**: 1532 **District Description:** PR MSP will impact directly more than 305,000 K-12 students, and all the other students in the Island's public system through sustained efforts by core partners.	1. University of Puerto Rico, Rio Piedras (*Josefina Arce, PI, Professor of Chemistry*), Mayaguez (*Moises Orengo, Co-PI, Physics*), Cayey and Humacao campuses **9** 2. Inter American University of Puerto Rico System **17** **Total IHEs:** (2)	1. Arecibo Observatory 2. informal science education centers and industry partners (Texas Instruments, Inc., and Ford Motor Companies) **Total Other:** (2)	Throughout Puerto Rico	None listed	None listed	**Total No. of partners (5)** The Puerto Rico Department of Education is the only district in Puerto Rico, with a student enrollment of 596,502. Edwin Vazquez is also a Co-PI, although his organization is not named.

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9. Promoting Rigorous Outcomes in Mathematics/Science Education (PROM/SE) Michigan State University	1. East China 2. Algonac 3. Capac 4. Memphis 5. Marysville 6. Yale 7. Port Huron 8. Cincinnati (Terry Joyner, Co-PI, Asst. Superintendent) 9. Deer Park Community City 10. Fairfield City 11. Finneytown Local 12. Forest Hills Local 13. Kings Local 14. Lakota Local 15. Loveland City 16. Madeira City 17. Mason City 18. Princeton City 19. Reading Community City **Total No. Districts:** (19*) **Grade Level:** K-12 **Total No. of schools in partner districts:** 229 **Total No. of schools participating in MSP activities:** 229 **District Description:** Represent broad range of social, economic, and cultural characteristics found in the US as a whole since they are situated in large urban cities (Cleveland and Cincinnati), and in their suburbs, in medium-sized cities with large minority populations such as Lansing, and in very rural areas such as St. Clair and Calhoun	1. Michigan State University (*Dr. Joan Ferrini-Mundy, PI, Prof. of teacher Ed. and Math, Assoc. Dean for science and Math Ed in the College of Natural Science, outreach and Director of the Div. of Science & Math Ed.;Peter Bates, Co-PI, Prof., Dept. of Math*; *George Leroi, Co-PI, Dean, College of Natural Science; William Schmidt, Co-PI, University Distinguished Prof.*) **8** **Total IHEs:** (1)	1. Manpower Research Corporation (external evaluation partner) 2. Ohio Aerospace Institute 3. National Science Foundation **Total Other:** (3)	Cleveland and Cincinnati, Ohio; Lansing, Michigan	Subcontractors	None listed	**Total No. of partners (23)**

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	Counties. *In addition to the 19 partner districts, the grantee includes 2 school consortiums in Michigan and 1 consortium in Ohio. School district names and the number of schools in the consortium were not provided in the grantee report. The report did state that of the 69 districts that originally signed up to participate, 63 are still engaged.						
10. Milwaukee Mathematics Partnerships: Sharing Leadership for Student Success University of Wisconsin-Milwaukee	1. Milwaukee Public Schools (*Henry Kranedonk, Co-PI, Computer Science Teacher, Rufus King High School, Part-time Instructor at Alverno College*) **Total No. Districts:** (1) **Grade Level:** PreK-16 **Total No. of schools in partner districts:** 218 **Total No. of schools participating in MSP activities:** 218 **District Description:** 100,000 K-12 Milwaukee Public Schools students	1. University of Wisconsin-Milwaukee (core), (*DeAnn Huinker, PI, Director, Center for Math and Science Ed. Research, Kevin McLeod, Co-PI, Assoc. Prof.*) **9** 2. Milwaukee Area Technical College (*Kimberly Farley, Co-PI, Assoc. Dean*) **6** **Total IHEs:** (2)	None listed	Milwaukee, Wisconsin	None listed	Plan to measure the degree to which a true effective partnership was established and identify the defining attributes of such a partnership.	**Total No. of partners (3)**

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11. Math and Science Partnership of Southwest Pennsylvania Allegheny Intermediate Unit	1. Albert Gallatin 2. Central Greene 3. Fort Cherry 4. Frazier 5. Avonworth 6. Baldwin-Whitehall 7. Chartiers Valley 8. Deer Lakes 9. Duquesne City 10. East Allegheny 11. Fox Chapel 12. Gateway 13. Hampton Township 14. Highlands 15. Northgate 16. Penn Hills 17. Quaker Valley 18. Riverview 19. South Allegheny 20. South Fayette Township 21. Steel Valley 22. Sto-Rox 23. Wilkinsburg Borough 24. Woodland Hills 25. Farrell Area 26. Mohawk Area 27. Seneca Valley 28. Sharon City 29. Derry Area 30. Franklin Regional 31. Greensburg Salem 32. Monessen City 33. Beaver Area 34. Big Beaver Falls Area 35. Freedom Area 36. Hopewell Area 37. Riverside Beaver 38. Rochester Area 39. South Side Area 40. Indiana Area **Total No. Districts:** (40) **Grade Level:** K-16	1. Carlow University (*Roberta Schomburg, Co-PI, Prof. of Ed.*) **12** 2. Chatham College (*Mary Kostalos, Co-PI, Biology Professor)* **12** 3. Robert Morris University (*Allen Lias, Co-PI, Asst. Dean, Engineering, Math & Science Professor)* **11** 4. Saint Vincent College **14** **Total IHEs:** (4)	1. Allegheny Intermediate Unit (*Nancy Bunt, PI, Program Director–Math & Science Collaborative, Carnegie Science Center; Sam Shaneyfelt, Co-PI, K-12 Project Director*) 2. Biological Sciences Curriculum Study, a critical participant for sharing of their National Academy of Curriculum Leadership; 3. The Education Development Center (provided off-site training to share their Developing Mathematical Ideas professional development curricula) 4. West Ed, which shared its VideoCases for Mathematics Professional Development; 5. Rand Corporation, serving as an outside evaluator of the Partnership's	Southwest Pennsylvania	None listed	None listed	**Total No. of partners (50)** AIU is a publicly-funded service agency intermediary between local school districts and the State Dept. of Education In Years 4 and 5, project will broaden by adding 12 school districts and replicate the intervention efforts in two more Intermediate Units; in these latter two years a yet unselected college in the vicinity of these new K-12 additions will also be included. **Total No. of partners (50)**

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	Total No. of schools in partner districts: 185 **Total No. of schools participating in MSP activities**: 185 **District Description:** The 40 districts are also known as Intermediate Units: 1). Intermediate Unit 1 2). Allegheny Intermediate Unit 3 3). West Moreland Intermediate Unit 7 4). Beaver Valley Intermediate Unit 27 The project will involve 134,000 students in the districts and 8,500 students in higher education.		activities 6. Carnegie Science Center **Total Other:** (6)				

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12. Partnership for Reform in Science and Mathematics (PRISM) Board of Regents of the University System of Georgia	1. Atlanta Public Schools 2. Clarke 3. Jackson 4. Oconee 5. Bulloch 6. Evans 7. Screven 8. Effingham 9. Chatham 10. Byran 11. Camden 12. Candler County 13. Glynn County 14. Toombs County 15. Vidalia City **Total No. Districts:** (15)***** **Grade Level:** PreK-12 **Total No. of schools in partner districts:** 291 **Total No. of schools participating in MSP activities**: 291 **District Description:** The PRISM partner districts enroll 170,000 plus students, within the districts, 39% of the students are African American, 54% are White, * In April 2004, Liberty County District withdrew and was replaced by Candler, Toombs, and Vidalia Districts.	1. Georgia State University (core), *(Nydia Hanna, Co-PI, Asst. Professor of Science Education; Ronald Henry, Co-PI, Vice President of Academic Affairs, Provost*) **9** 2. Center for Education Integrating Science, Mathematics, and Computing (Georgia Institute of Technology outreach center) **8** 3. University of Georgia (core), (*Michael Padilla, Co-PI, Director, Office of Educator Partnerships*) **8** 4. Georgia Perimeter College **4** 5. Georgia Southern University (core), (*Frederick Rich, Co-PI, Professor of Geology*) **10** 6. Armstrong Atlantic State University (core), (*Sabrina Hessinger, Co-PI, Assoc. Professor of Math & Regional Co-PI, Southeast Georgia Region*) **11** 7. Coastal Georgia Community College **2** **Total IHEs:** (7)	State: 1. Board of Regents of the University System of Georgia (*Jan Kettlewell, PI, Assoc. Vice Chancellor, P-16 initiatives*) 2. Georgia Department of Education **Total Other:** (2)	State of Georgia	None listed	None listed	**Total No. of partners (24)**

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TARGETED: Cohort I							
13. Mathematical ACTS University of California - Riverside	1. Jurupa Unified **Total No. Districts:** (1) **Grade Level:** 4-8 **Total No. of schools in partner districts:** 24 **Total No. of schools participating in MSP activities**: 5 **District Description:** The partner district has a student population of over 19,000 students of whom 57% are Hispanic and 5% are African American. Further, the district has sizeable English Learner (24%) and Free/Reduced Price Meals (52%) student populations.	1. University of California-Riverside (*Richard Cardullo, PI, Professor and Chair, Dept. of Biology; Pamela Clure, Co-PI, Executive Director for the Alpha Center, Lecturer in Mathematics Education*) **8** 2. Utah State University **9** 3. University of Michigan - Ann Arbor **8** 4. University of Wisconsin - Madision **8** 5. California State University–Fullerton **11** 6. University of California—Irvine **8** **Total IHEs:** (6)	None listed	Riverside, California	None listed	None listed	**Total No. of partners (7)**

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14. Stark County Math and Science Partnership Stark County Educational Service Center	1. Alliance City 2. Canton City 3. Canton Local 4. Fairless Local 5. Jackson Local 6. Lake Local 7. Louisville City 8. Marlington Local 9. Massillon City 10. Minerva Local 11. North Canton 12. Northwest Local 13. Osnaburg Local 14. Perry Local 15. Plain Local 16. Sandy Valley Local 17. Tuslaw Local **Total No. Districts:** (17) **Grade Level:** 5-12 **Total No. of schools in partner districts:** 125 **Total No. of schools participating in MSP activities**: 125 **District Description:** The program will impact over 40,000 students in the districts.	1. Kent State University, Stark Campus **15** 2. Malone College (*Christine Krol, Co-PI; Dean–School of Education*) **13** 3. Mount Union College **14** 4. Walsh University **13** 5. Stark State College of Tech **1** **Total IHEs:** (5)	Business/ Industry: 1. Stark Education Partnership (a business and community organization) Other: 1. Stark County Educational Service Center (*Robert Bayer, PI, Mathematics Consultant; Richard Dinko, Co-PI, K-12 Administrator*) **Total Other:** (2)	State of Ohio	None listed	None listed	**Total No. of partners (24)**

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15. Teachers and Scientists Collaborating Duke University	1. Orange County Schools 2. Harnett County Schools 3. Iredell/Statesville Schools 4. Alamance/Burlington Schools 5. Nash Rocky Mount Schools 6. Chatham County Schools 7. Public Schools of Robeson County 8. Roanoke Rapids Graded 9. Lee County **Total No. Districts:** (9)* **Grade Level:** K-8 **Total No. of schools in partner districts:** 203 **Total No. of schools participating in MSP activities**: 169 **District Description:** The project will serve 352,800 students in the districts. * Roanoke Rapids Graded District and Lee County Schools became partners in July 2004.	1. Duke University, Pratt School of Engineering; *(Gary Ybarra, PI; Director of the Duke University Engineering K-Ph.D. Program, Associate Professor of the Practice and Director of Undergraduate Studies Duke University, Department of Electrical and Computer Engineering*) **8** **Total IHEs:** (1)	Business/Industry: 1. Progress Energy 2. Glaxo SmithKline (not in original proposal) State: 1. North Carolina Department of Public Instruction 2. North Carolina Science, Mathematics, and Technology Education Center Other: 1. (Teacher Internships) **Total Other:** (5)	North Carolina	None listed	None listed	**Total No. of partners (15)** To become a partner, school system must commit for at least 1 year and pay fees for at least 45 teachers per year and provide access to student performance data. Faced challenge in linking teachers and scientists for collaboration. (Year 2 Annual Rpt) GSK is shipping curriculum units at no charge, up to $30,000 in value for up to the lifetime of the project. GSK is also providing 3500 sq. feet of warehouse space, with forklift, 3 training rooms, office space and phone service for 4 staff.

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16. Vermont Mathematics Partnership Vermont Institute for Science and Math	1. Barre City 2. Hartford 3. Milton Id 4. South Burlington **Total No. Districts:** (4) **Grade Level:** preK-12 **Total No. of schools in partner districts:** 15 **Total No. of schools participating in MSP activities**: 5 **District Description:** TBD	1. Castleton State College **13** 2. Norwich University **12** 3. University of Vermont (*Kenneth Gross, PI, Director of Vermont Mathematics Initiative, Professor of Mathematics and Education*) **9** **Total IHEs:** (3)	State: 1. Vermont Department of Education Other: 1. Vermont Mathematics Initiative 2. Vermont Institute for Science and Math 3. IBM Corporation (*Douglas Harris, Co-PI, Executive Director, VT Institute for Science and Math Technology*) **Total Other:** (4)	Vermont	None listed	None listed	**Total No. of partners (10)**

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17. Cleveland Math and Science Partnership Cleveland Municipal School District	1. Cleveland Municipal School District (*William Badders, PI, Project Director*) **Total No. Districts:** (1) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 129 **Total No. of schools participating in MSP activities**: 129 **District Description:** The Cleveland Municipal District is the largest school system in Ohio, enrolling over 74,000 preK to 12th grade students of whom 71% are African American and 8% are Hispanic. Majority of the teachers are not properly qualified and do not have the certification to effectively teach math and science.	1. John Carroll University (*Linda Gojak, Co-PI, title; Norman Schmidt, Co-PI, title*) **11** 2. Cleveland State University (*Joanne Goodell, Co-PI, title*) **10** 3. Case Western Reserve University (*James Bader, Co-PI; Director-Center for Science and Mathematics Education College of Arts & Sciences*) **8** **Total IHEs:** (3)	1. Education Development Center (*Marian Pasquale, Co-PI*) **Total Other:** (1)	Cleveland, Ohio	None listed	Partnership survey was developed by Victorian Health Promotion Foundation and was sent to PI, Co-PI's, and involved faculty. Survey results are contained in evaluation report.	**Total No. of partners (5)** CMSD has allocated funds for one mathematics teacher specialist and one science teacher specialist who will assist the Principal Investigator as program coordinators and be a link between the university coursework and the classroom. The Martha Holden Jennings Foundation is a Cleveland foundation that supports educational activities. They have committed monies to support a limited number of mentor teachers and are awarding an additional $50,000 in Year 3 of the grant.

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18. Alliance for Improvement of Mathematics Skills PreK-16 Del Mar College	1. Agua Dulce Independent 2. Calallen Independent 3. Flour Bluff Independent 4. Gregory-Portland Independent 5. Kingsville Independent (*Evanita Ramos, Co-PI, Director of Instruction*) 6. Robstown Independent 7. Sinton Independent 8. Taft Independent 9. Tuloso-Midway Independent **Total No. Districts:** (9) **Grade Level:** preK-16 **Total No. of schools in partner districts:** 67 **Total No. of schools participating in MSP activities**: 67 **District Description:** The partner districts serve roughly 30,000 students of whom, roughly 61% are minority and 50% are economically disadvantaged students.	1. Del Mar College (*Dr. Lee Sloan, PI; Dean of Occupational Ed & Tech*) **1** 2. Texas A & M University-Kingsville (TAMUK) (*Freddie Litton, Co-PI, title not given*) **10** **Total IHEs:** (2)	1. Texas Engineering Experiment Station (*Walter Clore, Co-PI, title not given; Melana Silva, Co-PI, Elementary Curriculum Specialist*) **Total Other:** (1)	Texas	None listed	None listed	**Total No. of partners (12)** Math Action Team (MAT) drives the partnership. MAT meets monthly to ensure implementation, provide direction, and assure participation from all partners.

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19. St. Louis Inner Ring Cooperative: Intervention Case Studies in K-12 Math and Science Washington University	1. Ferguson-Florissant 2. Maplewood-Richmond Heights 3. University City 4. Riverview Gardens 5. Webster Groves **Total No. Districts:** (5) **Grade Level:** K-12 **Total No. of schools in partner districts:** 63 **Total No. of schools participating in MSP activities**: 63 **District Description:** Five near-urban districts in St. Louis, responsible for the education of approximately 28,000 students.	1. Washington University, St. Louis (*Edward Macias, PI, Exec. Vice Chancellor, Dean of Arts & Sciences*; *Victoria May, Co-PI, Outreach Director on Biology*) **8** **Total IHEs:** (1)	1. St. Louis Zoo 2. St. Louis Science Center (*Carol Valentia, Co-PI, Vice President of Education, exhibits, & Programs*) 3. Informal science center (unnamed) 4. informal science center (unnamed) **Total Other:** (4)	Near urban St. Louis, Missouri	None listed	None listed	**Total No. of partners (10)**

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20. Texas Middle and Secondary Mathematics Project Stephen F. Austin State University	1. Corrigan/Camden Independent 2. Henderson Independent 3. Jacksonville Independent 4. Longview Independent 5. Lufkin Independent 6. Martinsville Independent 7. Nacogdoches Independent 8. Palestine Independent 9. Silsbee Independent 10. Timpson Independent 11. Troup Independent 12. Tyler Independent **Total No. Districts:** (12) **Grade Level:** 4-12 **Total No. of schools in partner districts:** 117 **Total No. of schools participating in MSP activities**: 117 **District Description:** The partner districts serve over 40,000 students, with variable percentages of minority students (non-white students range from 9% to 64% of student population in the different districts) and high percentages of economically disadvantaged students (28% to 67% of student population). *13 partnerships established but 1 district withdrew in Year 2. ** In addition to the partner schools identified, 15 non-partner districts were referred to as "collaborating districts with potential for future partnerships."	1. Stephen F. Austin State University (*Dr. Jasper Adams, PI, Chair-Dept. of Math and Statistics; Kimberly Childs, Co-PI, Project Director, Assoc. Prof. of Math; Deborah Pace, Co-PI, Assoc. Prof., Dept. of Math and Statistics*) **11** **Total IHEs:** (1)	None listed	East Texas	None listed	None listed	**Total No. of partners (13)** Teacher staffing does not match diversity in student population and many new teachers are not certified in the discipline and have not majored in math.

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21. E-Mentoring for Student Success National Science Teachers Association	1. East Side Union High 2. Gilroy Unified 3. North Monterey County Unified 4. Pajaro Valley Unified 5. Hayward Unified 6. Mount Diablo Unified **Total No. Districts:** (6*) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 165 **Total No. of schools participating in MSP activities**: 165 **District Description:** The 6 districts in California are urban, the Montana districts and consortiums are rural. * In addition to the partner districts in California, the grantee includes small rural districts and 5 district consortiums in Montana. District names and the number of schools in the consortium were not provided in the grantee report, but are estimated at around a hundred total for Montana.	1. New Teacher Center at University of California Santa Cruz (*Ellen Moir, Co-PI, title not given*) **8** 2. Montana State University - Bozeman (*Elizabeth Swanson, Co-PI, Assoc. Professor, Dept. of Education*) **8** **Total IHEs:** (2)	1. National Science Teachers Association (*Gerald Wheeler, PI, Executive Director*) 2. Montana Science Teachers Association 3. Horizon Research, Inc. (*Iris Weiss, Co-PI, President*) **Total Other:** (3)	Urban California and rural Montana	None listed	None listed	**Total No. of partners (11)** Project Director position created to implement the vision of the three partners; creation of the eMSS Advisory Board

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22. Learning to Teach, Teaching to Learn [1] Oakland Unified School District	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
23. Indiana University–Indiana Mathematics Initiative Partnership Indiana University, Bloomington	1. Anderson Community Schools 2. Bartholomew Consolidated Corp. 3. Elkhart Community Schools 4. Fort Wayne Community Schools 5. Metropolitan SD of Decatur Township 6. Metropolitan SD of Pike Township 7. School City of East Chicago 8. School City of Hammond 9. Vigo County School Corporation **Total No. Districts:** (9) **Grade Level:** K-12 **Total No. of schools in partner districts:** 196 **Total No. of schools participating in MSP activities**: 196 **District Description:** Nine urban districts serving over 115,000 students.	1. Indiana University, Bloomington (*Daniel Maki, PI, Chair of Mathematics Dept.; Frank Lester, Co-PI, Martha Lea & Bill Armstrong Chair in Teacher Education, Professor of Mathematics Education & of Cognitive Science*) **8** **Total IHEs:** (1)	None listed	urban Indiana	None listed	Interviews with District Coordinators focused mainly on how well district policies have been aligned to support goals of project.	**Total No. of partners (10)** District Coordinator meetings. Executive Advisory Committee Rio Grande Elementary (Vigo County) was named a No Child Left Behind Blue Ribbon School for 2004-2005.

[1] This award ended early by mutual agreement.

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24. Vertically Integrated Partnerships K-16 (VIP K-16) University System of Maryland†	1. Montgomery County Public Schools (*Michael Szesze, Co-PI, Science Supervisor, K-12*) **Total No. Districts:** (1) **Grade Level:** K-16 **Total No. of schools in partner districts:** 194 **Total No. of schools participating in MSP activities**:194 **District Description:** TBD	1. University of Maryland College Park (core) **8** 2. Univ. of MD, Baltimore County (core) **9** 3. Towson University (core) **11** 4. Montgomery College (core) **4** 5. Univ. of MD, Biotechnology Institute (service provider) **17** 6. Univ. of MD Shady Grove (service provider) **17** 7. Univ. of MD Center for Environmental Science (service provider) **17** 8. Univ. System of MD† (service provider); (*Nancy Shapiro, PI, Associate Vice Chancellor for Academic Affairs; Donald Langenberg, Co-PI, Chancellor Emeritus, Professor of Electrical Engineering*) **17** **Total IHEs:** (8)	None listed	Maryland	None listed	None listed	**Total No. of partners (9)**

† Encompasses multiple universities, research institutions, and a system office in Maryland.

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25. PRIME: Promoting Reflective Inquiry in Mathematics Education Black Hills Special Services Cooperative	1. Rapid City Area Schools (*Patricia Peel, Co-PI, Director of Student Achievement and Professional Development*) **Total No. Districts:** (1) **Grade Level:** PreK-12 **Total No. of schools in partner districts:** 25 **Total No. of schools participating in MSP activities**: 25 **District Description:** Rapid City Area Schools is in a mid-sized central city, with a large Native American population.	1. Black Hills State University (*Ben Sayler, Co-PI, Director and Associate Professor*) **15** **Total IHEs:** (1)	1. Black Hills Special Services Cooperative (*James Parry, PI, Director of Techonology and Innovations in Education*) 2. Inverness Research Associates **Total Other:** (2)	Rapid City, South Dakota	None listed	Plans to evaluate the efficacy of the partnership.	**Total No. of partners (4)**

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26. Deepening Everyone's Mathematics Content Knowledge: Mathematicians, Teachers, Parents, Students, and Community University of Rochester	1. Penfield Central 2. Rush-Henrietta Central 3. Batavia City 4. Byron-Bergen Central 5. Dansville Central 6. Geneseo Central 7. Keshequa (Dalton-nunda CSD) 8. Letchworth Central 9. Livonia Central 10. Mt. Morris Central 11. Pavilion Central 12. Warsaw Central **Total No. Districts:** (12) **Grade Level:** K-12 **Total No. of schools in partner districts:** 56 **Total No. of schools participating in MSP activities**: 56 **District Description:** Penfield and Rush-Henrietta districts are suburban, while the other districts are considered rural.	1. University of Rochester (*Judith Fonzi, PI, Asst. Professor, Teaching and Curriculum, Director of the Warner Center for Professional Development and Education Reform*) **8** **Total IHEs:** (1)	None listed	Western New York	None listed	None listed	**Total No. of partners (13)** In December 2003, Greece Central Schools (largest K-12 partner) withdrew from the partnership to keep their primary focus on curriculum implementation rather than foregrounding the deepening of all constituencies' mathematics content knowledge.

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TARGETED: Cohort II							
27. SUNY-Brockport College and Rochester City (SCOLLARCITY) Math and Science Partnership: Integrative Technology Tools for Preservice and Inservice Teacher Education SUNY Brockport	1. Rochester City (core) 2. Brighton Central (core); (*Henry Peris, Co-PI, Superintendent*) **Total No. Districts:** (2*) **Grade Level:** 7-12 **Total No. of schools in partner districts:** 188 **Total No. of schools participating in MSP activities**: 17 **District Description:** Rochester City District is the third largest in New York state with the lowest achievement scores, and Brighton Central District is one of the best ranked nationally. * In addition to the partner schools identified by the grantee, 19 non-partner districts and 21 non-partner schools participated in MSP activities.	1. SUNY College of Brockport (core), (*Osman Yasar, PI, Professor and Chair, Dept. of Computational Science*) **11** **Total IHEs:** (1)	Business: 1. XEROX Corporation (supporting) 2. Texas Instruments (supporting) Other: 1. Shodor Education Foundation (supporting); (*Robert Panoff; Co-PI, Founder and Executive Director*) 2. The Krell Institute (supporting), (*Barbara Helland, Co PI, Associate Director for Programs*) 3. Monroe County School Boards Association (supporting) 4. Research Foundation of SUNY (supporting) **Total Other:** (6)	Rochester, New York	MOA	None listed	**Total No. of partners (9)** Paul Helberg is also listed as a Co-PI but his title and organization are not given.

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28. Revitalizing Algebra San Francisco State University	1. San Francisco Unified 2. San Lorenzo 3. South San Francisco Unified 4. Berkeley Unified 5. Jefferson Elementary **Total No. Districts:** (5) **Grade Level:** 8-10 **Total No. of schools in partner districts:** 177 **Total No. of schools participating in MSP activities**: 8 **District Description:** TBD	**IHE Partners:** 1. San Francisco State University (*Diane Resek, PI, Professor of Mathematics*; *Erik Hsu, Co-PI, Asst. Professor, Math Dept.*; *Judith Kysh, Co-PI, Asst. Professor, Secondary Education Dept.*) **11** **Total IHEs:** (1)	None listed	San Francisco, California	None listed	None listed	**Total No. of partners (6)** At insistence of new district coordinator and teachers, middle school teachers collaborate as equals. (Proposal called for top-down approach)
29. Teachers Assisting Students to Excel in Learning Mathematics (TASEL-M) California State University - Fullerton	1. Buena Park 2. Fullerton Joint Union High 3. Orange Unified 4. Garden Grove Unified **Total No. Districts:** (4) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 124 **Total No. of schools participating in MSP activities**: 14 **District Description:** 14,000 students (approximately 70% of these students are from under represented minority groups) at 4 low-performing high schools and 7 feeder middle schools.	1. California State University–Fullerton Foundation (*Dr. David Pagni, PI, Professor–Math*; *Patricia Howard, Co-PI, K-12 Administrator*) **11** **Total IHEs:** (1)	1. Orange County Department of Education (*Dianne DeMille, Co-PI, Coordinator, Mathematics*) **Total Other:** (1)	Orange County, California	None listed	None listed	**Total No. of partners (6)**

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30. Focus on Mathematics Boston University	1. Arlington (*Kathleen Bodie, Co-PI, K-12 Administrator*) 2. Chelsea 3. Lawrence 4. Waltham 5. Watertown **Total No. Districts:** (5) **Grade Level:** 5-12 **Total No. of schools in partner districts:** 56 **Total No. of schools participating in MSP activities**:56 **District Description:** The five districts are all fairly small and located in the greater Boston area.	1. Boston University (core) (*Dr. Glenn Stevens, PI; Professor-Dept. of Math & Statistics*) **8** 2. Department of Mathematical Sciences at the University of Mass–Lowell (supporting) **10** 3. Center for Industrial Mathematics and Statistics at Worchester Polytechnic Institute (supporting) **11** 4. Program Evaluation & Research Group at Lesley University (supporting) **11** **Total IHEs:** (4)	1. Education Development Center (non-profit R & D organization), (*Wayne Harvey, Co-PI, Project Director, Vice President*) **Total Other:** (1)	Greater Boston, Massachusetts area	None listed	None listed	**Total No. of partners (10)** Submitted draft, incomplete report. Project expects to impact over 19,000 students across the 5 school districts.
31. Consortium for Achievement in Mathematics and Science Merck Institute for Science Education	1. Elizabeth City 2. Hillside Township 3. Linden City 4. Rahway City **Total No. Districts:** (4) **Grade Level:** 6-8 **Total No. of schools in partner districts:** 49 **Total No. of schools participating in MSP activities**: 14 **District Description:** Urban districts in New Jersey	1. Kean University (core) **11** **Total IHEs:** (1)	1. Merck Institute for Science Education (*Carlo Parravano, PI, Executive Director; Susan Brady, Co-PI, Director, Education Programs*) 2. Educational Testing Service **Total Other:** (2)	Urban New Jersey	None listed	Evaluation questions in this area include: 1) To what extent is the Consortium using existing resources and lessons from previous initiatives to their advantage? 2) How efficiently and effectively do the partners work together? Do they capitalize on each other's strengths in dividing the tasks? 3) To what extent are the resources and capacities of the Consortium partners adequate for carrying out Consortium goals with quality?	**Total No. of partners (7)** Multi-tiered organizational system has been established to allow for partner collaboration and communication. This includes a Consortium Management and Oversight Committe (C-MOC) and Consortium Planning and Implementation Team (C-PIT).

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32. The Mathematics and Science Partnership of Greater Philadelphia (MSPGP) LaSalle University	1. Allentown 2. Bangor Area 3. Bensalem (*Victoria Gehrt, Co-PI, Superintendent*) 4. Bethlehem 5. Bristol Township 6. Centennial 7. Cheltenham 8. Colonial 9. Easton 10. Hatboro-Horsham 11. Haverford Township 12. Interboro 13. Lancaster 14. Nazareth Area 15. New Hope-Solebury 16. Norristown 17. North Hampton Area 18. North Penn 19. Octorara 20. Palisades 21. Penn Delco 22. Pennridge 23. Quakertown Community 24. Radnor 25. Ridley 26. Rose Tree Media 27. Saucon Valley 28. Southeast Delco 29. Springfield Township 30. Wallingford/ Swarthmore 31. William Penn 32. Berlin Borough 33. Camden County Vocation 34. Cherry Hill Public 35. Collingswood Public 36. Eatern Camden County	1. LaSalle University (core), (*F. Joseph Merlino, PI, MSPGP*) **10** 2. Arcadia University (core), (*Deborah Pomeroy, Co-PI, Assoc. Professor and Coordinator of the Science Education Program*) **11** 3. Bryn Mawr College (core), (*Victor Donnay, Co-PI, Professor - Mathematics*) **14** 4. Cedar Crest College (core) **14** 5. Haverford College (core) **14** 6. Lehigh Carbon County Community College (core) **5** 7. Lincoln University (core) **12** 8. Moravian College (core) **14** 9. Muhlenberg College (core) **14** 10. Northhampton Community College (core) **6** 11. Villanova University (core) **11** 12 West Chester University (core) **11** 13. Widener University (core) **10** **Total IHEs:** (13)	1. Da Vinci Discovery Center (supporting) 2. Math Forum at Drexel University (supporting) 3. Research for Better Schools (supporting) 4. MAGPI Power Networking 5. WHYY, Inc. **Total Other:** (5)	Pennsylvania and New Jersey counties in the region outside of Philadelphia	None listed	None listed	**Total No. of partners (64)**

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	37. Gloucester City 38. Gloucester Technical School 39. Haddon Township 40. Haddon Heights Public 41. Lindenwold 42. Northern Burlington Regional 43. Riverton Public 44. Phillipsburg 45. Pennsauken 46. Winslow Township **Total No. Districts:** (46) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 354 **Total No. of schools participating in MSP activities**: 354 **District Description:** TBD						

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33. The MSTP Project: Mathematics and Science Hofstra University	1. Amityville Union Free (core) 2. Brentwood Union Free (core) 3. Freeport Central (core) 4. Glen Cove City (core) 5. Hempstead Union Free (core) 6. Longwood Central (core); (*Candee Swenson, Co-PI, Superintendent*) 7. Riverhead Central (core) 8. Uniondale Union Free (core) 9. William Floyd Central (core) 10. Wyandanch Union Free (core) **Total No. Districts:** (10) **Grade Level:** 6-8 **Total No. of schools in partner districts:** 84 **Total No. of schools participating in MSP activities**: 14 **District Description:** All ten districts are in Long Island, with large percentages of minorities.	1. Hofstra University (core) (*David Burghardt, PI, Prof. of Mechanical Engineering and Dept. Chair, Engineering; Sharon Whitton, Co-PI, Assoc. Professor of Mathematics Education*) **10** 2. State University of New York at Stony Brook (core) (*Thomas Liao, Co-PI, Professor of Science and Technology*) **8** **Total IHEs:** (2)	1. New York State Education Department (core) (*James Butterworth, Co-PI, Asst. Commissioner*) 2. Long Island Regional School Support Center (supporting) 3. Boards of Cooperative Educational Services (supporting) 4. professional teacher associations in science, mathematics, and technology (supporting) 5. Brookhaven National Laboratory (supporting) 6. Eisenhower Regional Alliance for Mathematics and Science Education (supporting) **Total Other:** (6)	Long Island, New York	None listed	None listed	**Total No. of partners (18)**

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34. The East Alabama Partnership for the Improvement of Mathematics Education (TEAM-Math) Auburn University	1. Chambers County 2. Lee County (*John Painter, Co-PI Superintendent*) 3. Macon County 4. Russell County 5. Tallapoosa County 6. Alexander City 7. Auburn City 8. Lanett 9. Opelika 10. Phenix City 11. Tallahasee 12. Elmore **Total No. Districts:** (12) **Grade Level:**K-12 **Total No. of schools in partner districts:** 104 **Total No. of schools participating in MSP activities**: 104 **District Description:** The districts pool their resources and are able to operate, in some respects, as one large district. The districts serve 56,000 students who are growing up in an environment that is rural, very poor, and heavily African-American (48% of the student population).	1. Auburn University (core); (*W. Gary Martin, PI, Professor, Mathematics Education*; *Christopher Rodger, Co-PI, Professor, Discrete and Statistical Science; Marilyn Strutchens, Co-PI, Associate Prof., Mathematics Education; Stephen Stuckwisch, Co-PI Asst. Professor, Dept. of Math and Statistics*) **9** 2. Tuskegee University (core) **15** **Total IHEs:** (2)	1. Appalachian Center for Collaborative Learning, Assessment, and Instruction in Mathematics 2. Blue Cross/Blue Shield of Alabama 3. East Alabama Regional Inservice Center **Total Other:** (3)	East Alabama	Letters of support	None listed	**Total No. of partners (17)** Two levels of leadership to be built within participating school districts: Instructional Support Specialist (ISS) and a School-based Teacher Leader (STL).

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35. Partnership for Student Success in Science (PS3) Palo Alto Unified School District	1. Cupertino 2. Los Altos 3. Menlo Park 4. Mountain View-Whisman 5. Palo Alto (Cynthia Pino, Co-PI, Assoc. Superintendent of Educational Services & Student Services) 6. Redwood City 7. Santa Clara 8. Newark Unified 9. San Mateo- Foster City **Total No. Districts:** (9) **Grade Level:** K-8 **Total No. of schools in partner districts:** 139 **Total No. of schools participating in MSP activities:** 47 **District Description:** TBD	1. San Jose State University, Colleges of Engineering and Education (*Kurt McMullin, PI, Assoc. Professor of Civil Engineering & Applied Mechanics; Carolyn Nelson, Co-PI, Elementary Education Dept. Chair*) **11** **Total IHEs:** (1)	Business/ Industry: 1. Agilent Technologies 2. Synopsis **Total Other:** (2)	Central California School districts are all within Silicone Valley	None listed	Evaluation Components which will evaluate goal of building a functional and healthy relationship: 1) Interview key leaders within each partner organization. 2) Attend a sample of SRT planning and cluster meetings. 3) Conduct an annual partnership review of progress, issues, etc. Set Milestone of having 600 hours of face-to-face contact between university consultants and 6-8 instructors.	**Total No. of partners (12)** Jan Hustler and Nancy Thomas are additional Co-PIs but their organization is not named. Will allow the formation of formal links between K-8 instructors and national content institutions. Once established, links should be sustainable due to support from content institutions. Project logistics were agreed upon and communicated such as the use of logs and sign-in reporting forms. Management plan, org chart, and communication plan were developed.

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36. North Cascades and Olympic Science Partnership Western Washington University	1. Anacortes (core) 2. Bainbridge Island (core) 3. Bellingham #501 (core) 4. Blaine (core) 5. Bremerton (core) 6. Brinnon (core) 7. Burlington-Edison (core) 8. Chimacum (core) 9. Concrete (core) 10. Conway (core) 11. Cape Flattery (core) 12. Crescent (core) 13. Ferndale (core) 14. LA CONNER (core) 15. Lummi Tribal (core) 16. Lynden (core) 17. Meridan (core) 18. Mount Baker (core) 19. Mount Vernon (core) 20. Nooksack (core) 21. North Mason (core) 22. Port Angeles (core) 23. Port Townsend (core) 24. Queets-Clearwater (core) 25. Quilcene (core) 26. Quillayute (core) 27. Seedro-Wolley (core) 28. Sequim (core) **Total No. Districts:** (28) **Grade Level:** K-12 **Total No. of schools in partner districts:** 187 **Total No. of schools participating in MSP activities**: 187 **District Description:** The districts serve over	1. Everett Community College (core) **7** 2. Whatcom Community College (core) **2** 3. Skagit Valley College (core) **1** 4. Northwest Indian College (core) **16** 5. Western Washington University (*George Nelson, PI, Director of Science, Mathematics, and Technology Education programs;* *Scott Linneman, Co-PI, Asst. Professor of Geology & Science Education;* *Chris Ohana, Co-PI, Asst. Professor of Elementary Education*) (core) **11** **Total IHEs:** (5)	State: 1. 2 Washington State Educational Service Districts (supporting) 2. Washington State MESA (Mathematics, Engineering, and Science Achievement) 3. Washington State LASER (Leadership and Assistance for Science Education Reform) (supporting) Other: 1. Naval Undersea Museum Foundation (supporting) **Total Other:** (5)	Northwest Washington State	Leadership team developed set of guiding principles to govern all elements of the partnership. These principles have been infused into all of the working groups and featured prominently in initial awareness events. Common purpose is necessary but not sufficient for true partnership. Members must commit to principles and hold one another accountable when actions are not consistent with those principles.	Team read and discussed "Effective School-College Partnerships, A Key to Education Renewal and Instructional Improvement" (Education, Summer 2001, p732-736 to deepen understanding of partnerships and assess our prior interactions against the described criteria to identify strengths and areas for improvement.	**Total No. of partners (38)** Communication between partners has been a large issue although a functional communication infrastructure early on has laid the groundwork. Leadership is responsive and continues to address this challenge. Dennis Schatz (VP of Education & Exhibits, Pacific Science Center) is also listed as a Co-PI although his organization is not a partner.

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	72,000 students. The districts are primarily located in rural communities, many with low socioeconomic status. *2 new districts added (Cape Flattery, Conway)						

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TARGETED: Cohort III							
37. Boston Science Partnership University of Mass. - Boston	1. Boston Public (Core) (*Marilyn Decker, Co-PI, Senior Program Director, Science*) **Total No. Districts:** (1) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 135 **Total No. of schools participating in MSP activities**: 42 **District Description:** The Boston Public School system serves a diverse, urban population; 86% of the students are non-white.	1. University of Massachusetts Boston (Core), (*Dr. Hannah Sevian, PI; Asst. Professor of Curriculum & Instruction, Graduate College of Education; Dept. of Chemistry, College of Science and Mathematics*; *Robert Chen, Co-PI, Professor, Organic Geochemistry, Marine Organic Chemistry*; *Arthur Eisenkraft, Co-PI, Distinguished Professor of Science Education*) **10** 2. Northeastern University (core); (*Christos Zahopoulos, Co-PI, Research Professor*) **9** 3. Harvard Medical School (supporting) **8** **Total IHEs:** (3)	1. College Board (supporting) **Total Other:** (1)	Massachusetts	None listed	None listed	**Total No. of partners (5)**
38. Math and Science Partnership in New York City (MSPinNYC) City University of New York (CUNY), Hunter College	1. NYC Public Schools **Total No. Districts:** (1) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 1429 **Total No. of schools participating in MSP activities**: 136 **District Description:** 68% of public school students qualify for free/reduced lunch. The grant is focusing on secondary schools in 2 of 10 regions in New York City, Region 3 (Queens), and Region 9 (Manhattan and South Bronx).	1. CUNY, Hunter College (*Pamela Mills, PI, Professor of Chemistry*) **11** 2. Lehman College (core) **11** 3. Queens College (core) **11** 4. Hostos Community College (core) **6** 5. Queensborough Community College (core) **6** 6. Bronx Community College (core) **6** **Total IHEs:** (6)	None listed	New York City, New York	None listed	One of the key components to evaluate will be partnerships and culture changes including items such as: reward systems, district priorities and policies, IHE priorities and policies, lines and type of communication and participation.	**Total No. of partners (7)** Policy Committee

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39. Project Pathways: A Math and Science Partnership Program for Arizona Targeted Project Track Arizona State University	1. Chandler (core); (*Melinda Romero, Co-PI, Executive Director of Staff Development and Instructional Services*) 2. Mesa (core) 3. Tempe (core) 4. Tolleson (core) **Total No. Districts:** (4) **Grade Level:** 9-12 **Total No. of schools in partner districts:** 129 **Total No. of schools participating in MSP activities**: 37 **District Description:** Demographics of partner districts mirror those of Arizona, where 45% of students are persons of color, and the Hispanic population is expanding rapidly. *The proposal states that 4 additional Arizona districts (Paradise Valley, Gilbert, Phoenix Union, and Casa Grande) will be participating in Professional Development in Years 4 and 5.	1. Center for Research on Education in Science, Mathematics, Engineering and Technology (CRESMET) at Arizona State University (core), (*Marilyn Carlson, PI, Associate Professor of Math*) **12** 2. Maricopa Community College faculty (supporting) **17** **Total IHEs:** (2)	1. Intel Corporation (supporting); (*Eugenia Echols, Co-PI, Education Manager*) **Total Other:** (1)	Arizona	None listed	None listed	**Total No. of partners (7)**

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40. Rocky Mountain Middle School Math Science Partnership: 15 Months to Highly Qualified University of Colorado at Denver	1. Jefferson County (core) 2. Brighton Public (core) 3. Mapleton Public (core) 4.Adams County (supporting) 5. Englewood (supporting) 6. Elizabeth (supporting) 7. Gilpin County (supporting) **Total No. Districts:** (7) **Grade Level:** 6-8 **Total No. of schools in partner districts:** 227 **Total No. of schools participating in MSP activities**: 33 **District Description:** TBD	1. University of Colorado at Denver (core); (*Doris Kimbrough, PI, Associate Professor, Chemistry*) **8** 2. University of Denver (supporting) **9** 3. Metropolitan State College of Denver (supporting) **14** 4. Colorado State University w/ affiliations to Ft. Lewis College (supporting) **8** **Total IHEs:** (4)	1. Front Range Board of Cooperative Educational Services (supporting) **Total Other:** (1)	Denver, Colorado	Letters of institutional support	None listed	**Total No. of partners (12)**

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41. A Greater Birmingham Partnership: Building Communities of Learners and Leaders in Middle School Mathematics Birmingham-Southern College	1. Bessemer City (core) 2. Fairfield City (core) 3. Homewood City (core) 4. Hoover City (core) 5. Jefferson County (core) 6. Mountain Brook City (core) 7. Shelby County (core) 8. Vestavia City School System (core) **Total No. Districts:** (8) **Grade Level**: 6-8 **Total No. of schools in partner districts:** 145 **Total No. of schools participating in MSP activities**: 22 **District Description:** The eight districts are all within a 30-mile radius of Birmingham.	1. Birmingham-Southern College (core); (*Bernadette Mullins, PI, Assoc. Professor of Mathematics*) **14** 2. University of Alabama at Birmingham (core) **8** **Total IHEs:** (2)	1. Math Education Collaborative **Total Other:** (1)	greater Birmingham, Alabama	None listed	None listed	**Total No. of partners (11)**
INSTITUTE: Cohort II							
42. Institute for Advanced Study (IAS)/Park City Mathematics Institute (PCMI) Institute for Advanced Study	1. McAllen Independent 2. Cincinnati Public (2 of the high schools) 3. Seattle Public (3 of the high schools) **Total No. Districts:** (3) **Grade Level:** 6-12 **Total No. of schools in partner districts:** 251 **Total No. of schools participating in MSP activities**: 17 **District Description:** TBD	1. Michigan State University (core) **8** 2. University of Washington (core), (Ilana (Lani) Seidel Horn, Co-PI, Asst. Professor of Mathematics Education) **8** 3. Southwest Texas State University **11** 4. University of Texas-Pan American (core) **11** 5. University of Cincinnati Main Campus **8** 6. Boston University (core) **8** **Total IHEs:** (6)	Other: 1. Education Development Center 2. Institute for Advanced Study (*Phillip Griffiths, PI, title not given*) **Total Other:** (2)	Cincinnati, Ohio; McAllen, Texas; and Seattle, Washington (location of school districts)	Letters of institutional support	No mention	**Total No. of partners (11)**

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INSTITUTE: Cohort III							
43. The Rice University Mathematics Leadership Institute William Marsh Rice University	1. Aldine Independent (core) 2. Houston Independent (core) **Total No. Districts:** (2) **Grade Level:** 9-12 **Total No. of schools in partner districts:** 372 **Total No. of schools participating in MSP activities**: 36 **District Description:** Diverse, ever-changing student population: 57% are Hispanic and 31% are African-American, Over 25% have limited in English proficiency	1. William Marsh Rice University, (core); (*Anne Papkonstantinou, PI; Director of Rice University Mathematics Project, Clinical Assistant Professor of Mathematics, Wiess School of Natural Science*); (*Richard Tapia, Co-PI; Professor–Math*); (*John Polking, Co-PI; Professor–Math, Site Director IAS/Park City Math Institute*) **8** **Total IHEs:** (1)	None listed	Texas	None listed	None listed	**Total No. of partners (3)**
44. NSF Institute: Preparing Virginia's Mathematics Specialist Virginia Commonwealth University	1. Arlington County Public School (core) 2. Fairfax County Public School (core) 3. Hanover County Public School (core) 4. Stafford County Public School (core) 5. Norfolk County Public School (core) 6. Alexandria City Public School (supporting) 7. Richmond City Public School (supporting) 8. Roanoke County Public School (supporting) **Total No. Districts:** (8) **Grade Level:** K-5 **Total No. of schools in partner districts:** 441 **Total No. of schools participating in MSP activities**: 0*	1. Virginia Commonwealth University (core); (*William Haver, PI, Professor, Math*) **9** 2. Norfolk State University (core) **11** 3. University of Virginia (core) **8** 4. James Madison University **11** 5. Virginia Tech **8** **Total IHEs:** (5)	1. Virginia Math and Science Coalition **Total Other:** (1)	state of Virginia	None listed	None listed	**Total No. of partners (14)** Partnership management team, Partnership Institute Advisory Committee

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	District Description: TBD *Proposal states that the MSP will target students from a sample of schools from the 8 districts, yet to be selected.						

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45. Standards Mapped Graduate Education and Mentoring Florida Atlantic University	1. Broward County **Total No. Districts:** (1) **Grade Level:** 5-8 **Total No. of schools in partner districts:** 259 **Total No. of schools participating in MSP activities**: 41 **District Description:** nation's fifth largest and largest fully-accredited district. Represents an extremely large and diverse population. Of the nearly 61,000 middle schools students, 40.8% are on free/reduced lunch, 5.2% are gifted, 8.4% LEP, and 10.4 with disabilities (ESE). Projected growth rate to be an average of 8% per year over the next 5 years.	1. Florida Atlantic University (*Heinz-Otto Peitgen, PI, Professor of Mathematics and Biomedical Science*; *Richard Voss, Co-PI, Professor of Complex Systems and Brian Science, Prof. of Physics, Prof. of Mathematical Sciences*) **9** **Total IHEs:** (1)	None listed	Boca Raton, Florida	None listed	Advisory Board will comment on the general progress and direction of the partnership.	**Total No. of partners (2)**

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46. University of Pennsylvania Science Teachers Institute: Preparation and Retention of Highly Qualified Science Teachers Through Content Intensive Programs University of Pennsylvania (Penn)	1. Philadelphia 2. Camden County Technical Schools 3. Cheltenham Township 4. Christina 5. Clearview Regional 6. Eugenio Maria de Hostos Comm. Bilingual Charter 7. Franklin Towne Charter School 8. Garnet Valley 9. Haddonfield Public Schools 10. Haverford 11. Lower Merion 12. Maritime Academy Charter 13. Marple Newtown 14. Moorestown Township Public Schools 15. Springfield 16. West Chester Area 17. William Penn 18. World Communication Charter 19. Young Scholars Charter **Total No. Districts:** (19) **Grade Level:** 5-12 **Total No. of schools in partner districts:** 375 **Total No. of schools participating in MSP activities**: 375 **District Description:** Philadelphia is one of the largest and most troubled urban school districts in the country. The overwhelming majority of students are from low-income (~72% qualifying for free/reduced lunch)	1. University of Pennsylvania (*Hai-Lung Dai, PI, Professor of Chemistry)* ***8*** **Total IHEs:** (1)	None listed	Philadelphia, Pennsylvania and districts in the Mid-Atlantic region	None listed	None listed	**Total No. of partners (20)** Steering Committee will be formed to oversee the implementation and continuing operations.

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	and historically under-served racial minority (~79% African-American or Latino) backgrounds. Approximately 23,000 have been diagnosed with a disability severe enough to require special education services, and more than 12,000 have limited English proficiency.						
47. The Fulcrum Institute for Education in Science Tufts University	1. Malden Public Schools 2. Boston Public Schools **Total No. Districts:** (2) **Grade Level:** K-8 **Total No. of schools in partner districts:** 141 **Total No. of schools participating in MSP activities**: 6 **District Description:** TBD	1. Tufts University (*Judah Schwartz, PI, Visiting Professor of Education, Research Professor of Physics and Astronomy*) **8** **Total IHEs:** (1)	1. TERC (*Sue Doubler, Co-PI*) **Total Other:** (1)	Boston, Massachusetts and Malden, Massachusetts	None listed	None listed	**Total No. of partners (4)**

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48. Math in the Middle Institute Partnership University of Nebraska - Lincoln	1. Lincoln Public Schools (core), (*Barb Jacobson, Co-PI, Director of Curriculum*) 2. Alliance Public Schools (core) 3. Boone Central (core) 4. Central City Public Schools (core) 5. Chadron Public Schools (core) 6. Columbus Public Schools (core) 7. David City Public Schools (core) 8. Fisher's Public School (core) 9. Gering Public Schools (core) 10. Humphrey Public Schools (core) 11. Malcolm Public Schools (core) 12. Morrill Public Schools (core) 13. Norris School District 160 (core) 14. Schuyler Grade Schools (core) 15. Waverly School District 145 (core) 16. York Public Schools (core) **Total No. Districts:** (16) **Grade Level:** K-12 **Total No. of schools in partner school districts:** 121 **Total No. of schools participating in MSP activities**: 121 **District Description:** Nebraska has 515 public school districts.	1. University of Nebraska - Lincoln (core); (*Jim Lewis, PI, Professor, Dept of Mathematics;* *Ruth Heaton, Co-PI, Associate Prof., Center for Curriculum and Instruction;* *Tom McGowan, Co-PI, Chair and Professor, Dept. of Teaching, Learning and Teacher Education*) **8** **Total IHEs:** (1)	None listed	rural Nebraska	Letters of institutional commitment.	None listed	**Total No. of partners (17)** Management Team which will oversee the grant and ensure leadership and coordination among all partners.

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	Nebraska Legislature established 18 Educational Service Units (ESUs) to provide innovative leadership and quality services for districts in their service area. For all but the largest district, (e.g. LPS), the ESUs are an essential partner in providing professional development for Nebraska teachers.						

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49. Oregon Mathematics Leadership Institute Partnership Oregon State University	1. Beaverton (core) 2. Bend (core) 3. Crook County (core) 4. Molalla River (core) 5. North Clackamas (core) 6. Redmond (core) 7. Reynolds (core) 8. Roseburg (core) 9. South Lane (core) 10. Woodburn (core) **Total No. Districts:** (10) **Grade Level:** K-12 **Total No. of schools in partner districts:** 166 **Total No. of schools participating in MSP activities**: 0* **District Description:** Diverse group representing a cross section of Oregon's student population. Beaverton, N. Clackamas, and Reynolds have faced recent rapid growth. *The proposal states that the MSP will target students from a sample of schools from the 10 districts, which has yet to be selected.	1. Oregon State University (core); (*Thomas Dick, PI, Coordinator of Collegiate Mathematics Education*) **8** 2. Portland State University (core) **10** 3. George Fox University (supporting) **10** 4. Central Oregon Community College (supporting) **2** 5. Chemeketa Community College (supporting) **1** 6. Clackamas Community College (supporting) **4** 7. Mt. Hood Community College (supporting) **5** 8. Umpqua Community College (supporting) **3** **Total IHEs:** (8)	1. Teachers Development Group (core) 2. Oregon Council of Teachers of Mathematics 3. Teachers of Teachers of Mathematics 4. Oregon Collaborative for Excellence in the Preparation of Teachers **Total Other:** (4)	State of Oregon	None listed	None listed	**Total No. of partners (22)**

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RESEARCH, EVALUATION, AND TECHNICAL ASSISTANCE: Cohort I							
50. Bridging Research and Practice in the MSPs: Technical Assistance for Use of Research and Data-Based Decision Making Education Development Center	None listed	None listed	None listed	Newton, Massachusetts	N.A.	N.A.	N.A.
51. Building Evaluation Capacity of STEM Projects Utah State University	None listed	None listed	None listed	Logan, Utah	N.A.	N.A.	N.A.
52. STEM-HELP (Higher Education Liaison Project) Northeastern University	None listed	1. Northeastern University **9** **Total IHEs:** (1)	Other: 1. Eisenhower Regional Alliance at TERC **Total Other:** (1)	Boston, Massachusetts	None listed	None listed	**Total No. of partners (2)**
53. Adding Value to the Mathematics and Science Partnerships Evaluations University of Wisconsin Madison	None listed	None listed	None listed	Madison, Wisconsin	N.A.	N.A.	N.A.

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54. Incorporating High Quality Interventions into a Broader Strategy for Sustained Mathematics/Science Education Reform Horizon Research Inc.	None listed	None listed	Business/Industry: 1. Horizon Research, Inc. Other: 1. Center for Professional Communities in Education at Education Development Center, Inc. **Total Other:** (2)	Chapel Hill, North Carolina	None listed	None listed	**Total No. of partners (2)**
55. MSP-Network: A Technical Assistance Design Project TERC Inc.	None listed	None listed	None listed	Cambridge, Massachusetts	N.A.	N.A.	N.A.
56. Longitudinal Design to Measure Effects of MSP Professional Development in Improving Quality of Instruction in Mathematics and Science Education Council of Chief State School Officers	None listed	None listed	Business/Industry: 1. American Institutes for Research Other: 1. Council of Chief State School Officers (*Rolf Blank, PI, Director of Education Indicators*) 2. Wisconsin Center for Education Research **Total Other:** (3)	Washington, D.C.	None listed	None listed	**Total No. of partners (3)**

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57. MSP Assessments SRI International	None listed	None listed	None listed	Menlo Park, California	N.A.	N.A.	N.A.
58. Facilitating Mathematics/Science Partnerships (See Grant No. 59) National Academy of Sciences	None listed	None listed	None listed	Washington, D.C.	N.A.	N.A.	N.A.
59. Building from the Research: Envisioning Quality Science Assessments (See Grant No. 58) National Academy of Sciences	None listed	None listed	None listed	Washington, D.C.	N.A.	N.A.	N.A.
RESEARCH, EVALUATION, AND TECHNICAL ASSISTANCE: Cohort II 60. Alternative Approaches to Evaluating STEM Education Partnerships: A Review of Evaluation Methods and Application of an Inter-organizational Model Georgia Institute of Technology	None listed	None listed	None listed	Atlanta, Georgia	N.A.	N.A.	N.A.
61. Redesign of the AP Biology Course, Examination, and Teacher Professional Development Experience College Board	None listed	None listed	None listed	New York City, New York	N.A.	N.A.	N.A.

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62. Assessing Teacher Learning About Science Teaching Horizon Research, Inc.	None listed	None listed	None listed	Chapel Hill, North Carolina	N.A.	N.A.	N.A.
63. TERC MSPnet: An Electronic Community of Practice Facilitating Communication and Collaboration TERC, Inc.	None listed	None listed	None listed	Cambridge, Massachusetts	N.A.	N.A.	N.A.
64. Online Technologies to Enhance MSP Teacher Quality Programs (See Grant No. 66) Education Development Center	None listed	None listed	None listed	Newton, Massachusetts	N.A.	N.A.	N.A.
65. MSP Motivation Assessment Program (See Grant No. 67) University of Michigan - Ann Arbor	None listed	None listed	None listed	Ann Arbor, Michigan	N.A.	N.A.	N.A.
66. Leadership Content Knowledge and Mathematics Instructional Quality in the MSPs: A Study of Elementary and Middle School Principals (See Grant No. 64) Education Development Center	None listed	None listed	None listed	Newton, Massachusetts	N.A.	N.A.	N.A.

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67. Design, Validation, and Dissemination of Measures of Content Knowledge for Teaching Mathematics (See Grant No. 65) University of Michigan - Ann Arbor	None listed	None listed	None listed	Ann Arbor, Michigan	N.A.	N.A.	N.A.
68. Developing Distributed Leadership: Understanding the Role Boundary Tools in Developing and Sustaining Leadership for Learning Networks Northwestern University	1. Chicago Public 2. Minneapolis Public **Total No. Districts:** (2) **Grade Level:** TBD **Total No. of schools in partner school districts:** TBD **Total No. of schools participating in MSP activities**: TBD **District Description:** Urban school districts	1. Northwestern University (*James Spillane, PI, Assoc. Professor*) **8** **Total IHEs:** (1)	None listed	Minneapolis, Minnesota; and Chicago, Illinois	None listed	None listed	**Total No. of partners (3)**
69. Research on MSP Teacher Recruitment, Induction, Retention WestEd	None listed	None listed	None listed	San Francisco, California	N.A.	N.A.	N.A.
70. Causal Inference in Instructional Workforce Research Michigan State University	None listed	None listed	None listed	East Lansing, Michigan	N.A.	N.A.	N.A.

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RESEARCH, EVALUATION, AND TECHNICAL ASSISTANCE: Cohort III							
71. The Effect of STEM Faculty Engagement in MSP: A Longitudinal Perspective Westat Inc.	None listed	None listed	None listed	Rockville, Maryland	N.A.		N.A.
72. Mathematician Study Group of State Standards in Mathematics Institute for Advanced Study	None listed	None listed	None listed	New Jersey	N.A.		N.A.
73. MOSART: Misconception Oriented Standards-based Assessment Resource for Teachers Harvard University	None listed	1. Harvard University (*Philip Sadler, PI, Senior Lecturer, Astronomy Dept.*) **8** 2. MIT **8** 3. Framingham State College **11** 4. Lesley University **11** 5. University of Massachusetts **8** **Total IHEs:** (5*) * With the exception of Harvard, all IHEs are proposed partners only.	None listed	Massachusetts			N.A.
74. RETA: Distributed Leadership for Middle School Mathematics Education: Content Area Leadership Expertise in Practice Northwestern University	None listed	None listed	Will work with MSPs and Institute Partnerships	Chicago, Illinois	N.A.	N.A.	N.A.

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75. Knowledge Management for the MSPs Horizon Research Inc.	None listed	None listed	1. Center for Leadership and Learning 2. Center for Science Education at Education Development Center, Inc. 3. Horizon Research, Inc. (*Iris Weiss, PI*) **Total Other:** (3*) * The project will collaborate with current and future MSP RETAs to avoid duplication of effort.	Chapel Hill, North Carolina	None listed	None listed	N.A.
76. Florida Science and Mathematics Education Summit University of South Florida	None listed	1. University of South Florida (*Gerry Meisels, PI, Professor of Chemistry, Director, Coalition for Science Literacy*) **8** **Total IHEs:** (1)	State: 1. Florida Department of Education Business/ Industry: 1. Radiation Technologies, Inc. **Total Other:** (2)	Tampa, Florida	None listed	None listed	**Total No. of partners (3)**
77. Mathematics and Science Partnership Program Evaluation COSMOS Corporation	None listed	1. Vanderbilt University **8** 2. George Mason University **9** **Total IHEs:** (2)	1. COSMOS Corporation (*Robert Yin, PI, President*); (*Jennifer Scherer, Co-PI, Vice President*)	Bethesda, Maryland	Subcontracts	None listed	N.A.

* Classification code refers to The Carnegie Classification of Institutions of Higher Education, May 30, 2006 Edition. For legend, see last page of table.
** Activities include only those undertaken by the partners, not the local evaluator.

Carnegie Classification Code Legend:

1 = Assoc/Pub-R-L: Associate's--Public Rural-serving Large

2 = Assoc/Pub-R-M: Associate's--Public Rural-serving Medium

3 = Assoc/Pub-R-S: Associate's--Public Rural-serving Small

4 = Assoc/Pub-S-MC: Associate's--Public Suburban-serving Multicampus

5 = Assoc/Pub-S-SC: Associate's--Public Suburban-serving Single Campus

6 = Assoc/Pub-U-MC: Associate's--Public Urban-serving Multicampus

7 = Assoc/Pub-U-SC: Associate's--Public Urban-serving Single Campus

8 = RU/VH: Research Universities (very high research activity)

9 = RU/H: Research Universities (high research activity)

10 = DRU: Doctoral/Research Universities

11 = Master's L: Master's Colleges and Universities (larger programs)

12 = Master's M: Master's Colleges and Universities (medium programs)

13 = Master's S: Master's Colleges and Universities (smaller programs)

14 = Bac/A&S: Baccalaureate Colleges--Arts & Sciences

15 = Bac/Diverse: Baccalaureate Colleges--Diverse Fields

16 = Tribal: Tribal Colleges

17 = Unknown

Source: Carnegie Foundation for the Advancement of Teaching, *Carnegie Classifications Data File*, May 30, 2006 edition.

* Classification code refers to The Carnegie Classification of Institutions of Higher Education, May 30, 2006 Edition. For legend, see last page of table.
** Activities include only those undertaken by the partners, not the local evaluator.

APPENDIX D

Description of MSPs' Targeted Subjects and Grades, and Project Goals and Objectives as Stated in Grantee Documents

APPENDIX D

DESCRIPTION OF MSPs' TARGETED SUBJECTS AND GRADES, AND PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS[1]

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
COMPREHENSIVE: Cohort I		
1. North Carolina Partnership for Improving Mathematics and Science (NC-PIMS) http://www.ncpims.org	mathematics and science (K-12)	1. Develop leadership and policies to support instruction in science and mathematics; 2. Create and deliver high quality professional development to teachers; and 3. Design and implement activities that encourage students to remain engaged in science and mathematics learning
2. New Jersey Math Science Partnership http://njmsp.rutgers.edu	mathematics and science (PreK-12)	1. Increase achievement and reduce achievement gaps in mathematics and science between children from families that differ in wealth and ethnicity; 2. Increase and sustain the number, quality, and diversity of Pre-K-12 teachers of mathematics and science; and 3. Evaluate the work done and document outcomes in order to support the partnership in a formative manner.
3. Appalachian Mathematics and Science Partnership http://www.appalmsp.org	mathematics and science (PreK-12)	1. Eliminate the "achievement gap" in mathematics, science, and technology (MST) for regional preK-12 students; and 2. Build an integrated preK-12 and higher education system in this underserved area to insure the selection, development, and career-long support of a diverse and high quality mathematics and science teacher workforce.
4. El Paso Math and Science Partnership http://epcae.org/msp	mathematics and science (PreK-12)	1. Increase and sustain the quantity and quality of preK-12 mathematics and science teachers; 2. Build school and district capacity to provide the highest quality curriculum, instruction and assessment, and ensure the highest-level achievement in mathematics and science; 3. Align curriculum, instruction, and assessment of mathematics and science education; 4. Increase college-going rates and majors in math, science and engineering; and 5. Implement a research agenda that advances knowledge and understanding about the systemic improvement of mathematics and science education.
5. Mathematics and Science Partnership: FOCUS Faculty Outreach Collaborations Uniting Scientists, Students and Schools No External Website	mathematics and science (PreK-12)	1. Construct a "future teacher highway" to increase the number, quality and diversity of preK-12 teachers of mathematics and science; 2. Involve math and science professionals in "Discipline Dialogues" that cross segmental boundaries; and 3. Create systemic reform in the professional development of preK-12 teachers of mathematics and science.
6. SUPER STEM Education No External Website	mathematics and science (PreK-12)	1. Enhance the capacity of Baltimore County Public Schools to provide all students with challenging math and science curricula to increase system wide student STEM achievement and reduce the race and poverty achievement gaps; 2. Increase the number, quality, and diversity of preK-12 math and science teachers, especially in low-performing underserved schools through professional development and alternative performance-based certification; and 3. Conduct ongoing assessments of the Project's outcomes and contribute to the development of national capacity to introduce and sustain successful math and science education reform including hosting and presenting at conferences.

[1] Information based on review of grantees' annual reports, evaluation reports, or proposals. The goals for grants number 16, 30, and 36 are stated in terms of results.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
COMPREHENSIVE: Cohort II		
7. System-Wide Change for All Learners and Educators (SCALE) http://scalemsp.wceruw.org	mathematics and science (K-12)	1. Implement strategies to transform core STEM teaching system-wide in each of the four partner school districts so that every student experiences deep, conceptually based instruction on core mathematics and science concepts on a continuing basis; 2. Develop and implement immersion STEM learning experiences to ensure that every student in our partner districts experiences the process of engagement in an extended (e.g., four-week) scientific investigation at least once a year; 3. Design a new environment for and implement new teacher preparation and development programs that give teachers a deeper grasp of STEM content and effective pedagogical strategies for engaging students in learning; 4. Increase the participation of minority and female students in high school mathematics and science courses and send more of them to college as students in these fields, thus building a more diverse pool of potential STEM teachers; and 5. Ensure that a culture of evidence permeates all lines of work in the partnership through a program of research and evaluation.
8. Puerto Rico Math and Science Partnership No External Website	mathematics and science (K-12)	1. Enhance student achievement through challenging curricula and teacher empowerment; 2. Increase and sustain K-12 math and science teachers through a professional education continuum; 3. Improve knowledge base on math & science teaching and learning by means of assessment, evaluation, and research; and 4. Create sustainable K-20 partnerships that leverage maximum support for K-12 math and science education.
9. Promoting Rigorous Outcomes in Mathematics/Science Education (PROM/SE) http://www.promse.msu.edu	mathematics and science (K-16)	1. Establish a base of empirical evidence to direct the reform efforts and build capacity in all partner sites to use data in revising content standards; 2. Improve mathematics and science educational opportunities for all students across the K-12 partner sites by developing more coherent, focused, and challenging content standards; aligning K-12 standards with instructional materials; and eliminating tracking in grades K-8; 3. Improve mathematics and science teaching so it is aligned with K-12 standards through professional development, focused on disciplinary content and subject knowledge for teaching; and 4. Reform the preparation of future teachers so that content and context are central, and teachers at all levels are ready to teach challenging mathematics and science to diverse student populations.
10. Milwaukee Mathematics Partnerships: Sharing Leadership for Student Success No External Website	mathematics (PreK-16)	1. Implement and utilize the Comprehensive Mathematics Framework to lead a collective vision of deep learning and quality teaching of challenging mathematics across the Milwaukee Partnership; 2. Institute a distributed mathematics leadership model that engages all partners and is centered on school-based professional learning communities; 3. Build and sustain the capacity of teachers, from initial preparation through induction and professional growth, to understand mathematics deeply and use that knowledge to improve student learning; and 4. Ensure that all students, PK-16, have access to, are prepared and supported for, and succeed in challenging mathematics.
11. Math and Science Partnership of Southwest Pennsylvania http://www.aiu3.net/msc	mathematics and science (K-16)	1. Increase the K-12 students' knowledge of mathematics and science through an increase in the breadth and depth of their participation in challenging courses within coherent curricula; 2. Increase the quality of K-16 educator workforce through leadership-guided, data-based decision-making, and the effective implementation of challenging courses within coherent curricula; and 3. Create sustainable coordination of partnerships in IUs that build intentional feedback loops between K-12 and IHE to tap the discipline-based expertise of IHE and to improve the mathematics and science learning experience for all undergraduates.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
12. Partnership for Reform in Science and Mathematics (PRISM) http://www.usg.edu/p16/prism	mathematics and science (PreK-12)	1. Raise expectations and achievement in science and mathematics in preK-12 schools while closing the achievement gap among demographic groups (*by providing challenging science and mathematics curricula and materials for all students; raising the awareness of students, parents, and the community of the need for all preK-12 students to complete challenging courses and curricula in science and mathematics);* 2. Raise student achievement in science and mathematics in preK-12 schools through increasing and sustaining the number, quality, and diversity of preK-12 teachers teaching science and mathematics *(by providing high quality professional development to current preK-12 teachers who teach science and mathematics; strengthening the content and pedagogy in science and mathematics for future preservice teachers; ensuring a sufficient pipeline of highly qualified and diverse teachers to meet demand; and providing incentives for teacher assignment and retention to ensure access to highly qualified and experienced science and mathematics teachers by students who need them most);* and 3. Raise student achievement in preK-12 schools through increasing the responsiveness of higher education to the needs of preK-12 schools *(by increasing the participation of science and mathematics faculty in teacher preparation and professional development; and providing incentives for science and mathematics faculty members to engage in research with preK-12 schools on effective practices in science and mathematics).*
TARGETED: Cohort I		
13. Mathematical ACTS http://mathacts.ucr.edu	mathematics (4-9)	1. Increase academic achievement of middle school students in mathematics in participating schools. *Objectives:* *a. Decrease the existing mathematics achievement gaps between poverty and non-poverty students by raising achievement among poverty students by 25%;* *b. Increase the number of all students receiving a B- or better in 8th grade Algebra by 25%;* *c. Increase the number of students seeking extended learning opportunities in mathematics; and* *d. Increase the number of students enrolling in Geometry and higher-level mathematics courses.* 2. Increase the number of teachers with mathematics credentials and instructional competencies. *Objectives:* *a. Triple enrollment in mathematics credential programs from preservice candidates;* *b. Increase by half the percentage of inservice teachers with mathematics credentials or specialization;* *c. Increase the mathematical proficiency of inservice teachers to Algebra II-Trigonometry competence; and* *d. Increase commitment of teachers to community of learners' career approach.*
14. Stark County Math and Science Partnership http://www.sparcc.org/msp	mathematics and science (5-12)	Increase student achievement and reduce the achievement gap for all students in secondary mathematics and science. 1. Develop urban centers in collaboration with area colleges to increase student achievement and reduce the achievement gap; 2. Increase inquiry teaching and real world problem solving skills of secondary math and science teachers; and 3. Improve communication and collaboration between public schools (secondary mathematics and science teachers and administrators) and area college/university educational/content professors to promote a seamless transition between preservice preparation, induction year, and inservice training.
15. Teachers and Scientists Collaborating http://tasc.pratt.duke.edu	science (K-8)	1. Improve students' skills in science process and content, and exercise their skills in computation and written communication; 2. Improve student readiness for high schools science; and 3. Raise math and language arts end-of-grade test performance through inquiry-based science.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
16. Vermont Mathematics Partnership http://www.vermontmathematics.org/index.htm	mathematics (PreK-12)	1. Teachers and teachers in training deeply understand mathematics and can translate their knowledge into high levels of student learning; 2. School support systems are rich with learning opportunities for students and teachers; 3. Partner schools and districts use valid and reliable ongoing assessments and feedback systems to continuously improve mathematics learning for all students; 4. Mathematicians and educators collaborate to develop high-quality professional development materials and protocols for teachers and teachers in training to build understanding of mathematics content, instructional practices, equity strategies and educational leadership; and 5. Mathematicians and mathematics education faculty support collaborative research efforts among preK-12 educators, contributing to the state and national research base in the teaching and learning of mathematics.
17. Cleveland Math and Science Partnership http://www.cwru.edu/artsci/csm/CMSP.html	mathematics and science (9-12)	1. Increase and sustain the number, quality and diversity of middle grades (6-8) mathematics and science teachers within the Cleveland Municipal School District through the creation of a continuing education initiative linked to restructured graduate programs at local universities, and a mentoring program within the district; 2. Increase the quality of high school (9-12) math and science teachers within the Cleveland Municipal School District through the creation of a continuing education initiative linked to new graduate-level courses at Case Western Reserve University (CWRU); 3. Expand the mathematics and/or science content knowledge and use of inquiry-based methods of middle and high school teachers in the Cleveland Municipal School District. (NCTM standards, NRC Science Standards, ODE Academic Content Standards, Cleveland Municipal School District Mathematics and Science Standards; 4. Increase collaboration within each university in order to align continuing education and professional development to the applied needs of CMSD teachers of math and science in grades 6-12; and 5. Positively impact student outcomes in math and science in grades 6-12 in the Cleveland Municipal School District.
18. Alliance for Improvement of Mathematics Skills PreK-16 http://www.delmar.edu/aims	mathematics (PreK-16)	Prepare all students for success in college level math courses by the time they graduate from high school. 1. Enhance professional learning for preK-16, administrators, teachers (preK-12), faculty (higher education), and counselors; 2. Provide a challenging curriculum for all students; 3. Enhance the application of technology for instruction and collaboration; and 4. Conduct research on effectiveness of interventions.
19. St. Louis Inner Ring Cooperative: Intervention Case Studies in K-12 Math and Science No External Website	mathematics and science (K-12, mainly 4-8)	1. Enhance capacity to provide a challenging math and science curriculum for every student, particularly targeted at grades 4-8; 2. Develop an exemplary program to support teachers from preservice education through the induction years of teaching; 3. Develop a progression of professional development for teachers of grades 4-8 that impacts student achievement; and 4. Narrow gaps between achieving and underachieving students in math and science.
20. Texas Middle and Secondary Mathematics Project http://www.faculty.sfasu.edu/kchilds/nsf2.html	mathematics (4-12)	1. Improve the capacity of teachers in 4-12 grade-level mathematics classrooms to impact student performance in mathematics; and 2. Improve the awareness and involvement of mathematics higher education faculty regarding preparation and professional development of teachers.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
21. E-Mentoring for Student Success http://www.newteachercenter.org/emss	science (6-12)	Develop a national on-line, content-rich, mentoring system to improve the skills of, and provide support for, novice middle and high school science teachers. 1. Improve middle and high school student achievement in science by developing e-mentoring networks of new teachers, mentors, and current and future faculty; 2. Prepare a cadre of administrators to support beginning teachers and their mentors for improving student learning; 3. Meet a national need by developing standards for the mentoring and induction of beginning science teachers; and 4. Develop a national e-mentoring network to disseminate the model developed by eMSS as it supports teachers of science nationwide.
22. Learning to Teach, Teaching to Learn Website Unavailable * (Project Ended Early)	mathematics and science (K-12)	Align a seamless teacher recruitment, preparation and development continuum in mathematics and science across grades K-12 during the years 2002-2007. 1. Recruit undergraduate mathematics and science majors and tutors with close ties to Oakland into teaching; 2. Restructure preservice programs to comply with net state induction legislation and to better meet the need of today's new teachers entering a diverse and low income urban school district; 3. Provide sustained support to new teachers regardless of their status when they enter the district; and 4. Increase teacher retention by establishing a culture of collegial support and life-long "learning to teach," developing a cadre of teaching fellows who will take on significant roles as adjunct faculty for preservice, new teacher support providers, and curriculum and assessment designers.
23. Indiana University–Indiana Mathematics Initiative Partnership http://www.indiana.edu/~iucme	mathematics (K-12)	1. Provide comprehensive professional development for leadership cadres of teachers and administrators; and 2. Insure that all Indiana Mathematics Initiative (IMI) districts derive permanent benefits from a major effort currently underway at the IU-Bloomington campus to revise and supplement the mathematics courses taken by preservice elementary and secondary school teachers. These linked courses will be created and delivered by teams consisting of faculty from the mathematics department, mathematics education, and experienced secondary teachers in IMI districts. *Specifically the partnership is to establish linkages between IU's preservice program and IMI districts to enhance the ability of the districts to both attract and retain qualified mathematics teachers.*
24. Vertically Integrated Partnerships K-16 (VIP K-16) http://www.scienceinquiry.org	science (9-16)	1. Enrich science teacher knowledge in order to improve high school science instruction to better enable students to meet rigorous state science standards as measured on the Maryland Science High School Assessments; and 2. Improve the teaching skills of college science faculty in order to improve the quality of undergraduate general education science courses. *a. Improve student learning outcomes, as measured by high school assessments;* *b. Improve teacher content knowledge in the sciences by providing high quality professional development to inservice high school teachers;* *c. Improve college faculty teaching skills by providing them with expert mentor/master teacher during summer institutes;* *d. Enhance graduate student teaching skills by exposing them to expert mentor/master teachers during summer workshops, and having them complete teaching portfolios; and* *e. Increase the number of undergraduate science students who choose teaching as a career.*

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
25. PRIME: Promoting Reflective Inquiry in Mathematics Education http://www.primeproject.org	mathematics (PreK-12)	1. Improve student achievement in mathematics for all pre-K-12 students in the Rapid City School District; and 2. Increase and sustain the quality of pre-K-12 teachers of mathematics in the Rapid City School District over time. *Objectives:* *a. Raise the mathematics achievement of all pre-K-12 students in the Rapid City School District according to criteria established by the state of South Dakota;* *b. Reduce the achievement gap between Native American and non-native students in the Rapid City School District;* *c. Reduce the number of high school students taking non college-preparatory math by a minimum of 20% over the five-year duration of Project PRIME;* *d. Increase the number of students taking upper level mathematics courses in middle school (Algebra) and high school by a minimum of 20% over the five-year duration of Project PRIME;* *e. Increase the number of students scoring 20 or above in the mathematics section of the ACT by a minimum of 20% over the five-year duration of Project PRIME;* *f. Improve the ability of preservice teachers graduating from Black Hills State University College of Education to teach mathematics effectively as measured by the Horizon Classroom Observation Protocol; and* *g. Improve the ability of inservice teachers in the Rapid City School District to teach mathematics effectively as measured by the Horizon Classroom Observation Protocol.*
26. Deepening Everyone's Mathematics Content Knowledge: Mathematicians, Teachers, Parents, Students, and Community No External Website	mathematics (K-12)	Develop effective ways to foster the mathematical content knowledge necessary for a successful implementation of reform mathematics curricula. 1. Work toward institutional change and increased mathematics achievement of all K-12 students; and 2. Enhance the capacity of schools to provide challenging curriculum for all students by developing a shared understanding of new goals and expectations about students' learning of mathematics, and increasing mathematical content knowledge among multiple constituencies (i.e., K-12 teachers, school support staff, and parents/community members) involved in the partnering K-12 districts. A cadre of teacher leaders from these districts will serve as the primary vehicle for capacity building and the institutionalization of mathematics reform.
TARGETED: Cohort II		
27. SUNY-Brockport College and Rochester City (SCOLLARCITY) Math and Science Partnership: Integrative Technology Tools for Preservice and Inservice Teacher Education http://www.brockport.edu/cmst	mathematics and science (7-12)	1. Improve student outcomes in math and science at grades 7-12 in Rochester City School District and Brighton Central School District through an integrated technology approach to math and science education; 2. Increase retention of high quality math, science and technology (MST) teachers through professional development (workshops, year-long coaching and graduate education); 3. Increase the number of students majoring or seeking teacher certifications in MST programs at SUNY Brockport through scholarships and internships; 4. Strengthen relationship with the local industry such as Xerox Corporation through internships to MST students; 5. Foster collaboration between industry such as Texas Instruments through the use of new instructional technology; and 6. Promote collaboration between national programs and organizations funded by NSF and DOE (through dissemination, building evidence, and sharing results and training materials).
28. Revitalizing Algebra http://math.sfsu.edu/hsu/msp/index.html	mathematics (8-10)	1. Improve the teaching of Algebra in middle schools and high schools; 2. Create new teacher leaders at the middle school and secondary school level; 3. Change the climate in each school so that teachers continue to work on improving the teaching of algebra; 4. Encourage mathematics majors to seek a career in secondary education; 5. Help math majors to believe that underrepresented students from any socio-economic class can excel in mathematics with a good teacher and a good curriculum; 6. Improve graduate students' effectiveness as teachers; and 7. Increase graduate students' interest in K-12 education.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
29. Teachers Assisting Students to Excel in Learning Mathematics (TASEL-M) http://taselm.fullerton.edu	mathematics (6-12)	1. Increase students' mathematical content knowledge and achievement; 2. Create a collaborative culture in schools that focuses on assessing student knowledge and implementing curriculum in pedagogically appropriate ways that addresses the students' needs; and 3. Increase teachers' mathematics content knowledge. A combination of site-based and summer institute professional development and mini-courses in mathematics forms the foundation of the program.
30. Focus on Mathematics http://www.focusonmath.org	mathematics (5-12)	1. A coherent, content-based professional development program that deepens teachers' mathematical understanding; 2. Increased student achievement and students' development as lifelong mathematical thinkers and users of the discipline; 3. A research experience: All students develop and present a mathematics research at least once in grades 8-11; 4. An integrated preservice program connecting content and pedagogy that emphasizes the connection between mathematical content, the process of doing mathematics, and the process of students' learning of mathematics; and 5. A mathematical community among teachers, students, administrators, mathematicians, and mathematics educators who work together to put mathematics at the core of 5-12 mathematics education.
31. Consortium for Achievement in Mathematics and Science No External Website	mathematics and science (6-8)	Provide intensive, sustainable, systemic reform in four urban school districts, with the vision that all middle school students will understand and be able to apply key concepts in mathematics and science. 1. Implement challenging instructional programs; 2. Build professional capacity in schools, the University, Educational Testing Service (ETS), and Merck Institute for Science Education (MISE); 3. Develop leadership among teachers, administrators, and university faculty; 4. Develop a student-centered learning climate in every classroom; and 5. Build parent and community support.
32. The Mathematics and Science Partnership of Greater Philadelphia (MSPGP) http://www.brynmawr.edu/mspgp	mathematics and science (6-12)	Facilitate and grow partnerships between grades 6-12 teachers, administrators, and faculty from higher educational institutions. 1. Ensure that all students have access to, are prepared for, and are encouraged to participate and succeed in, challenging and advanced mathematics and science courses; 2. Enhance the quality, quantity and diversity of the 6-12 mathematics and science teacher workforce; and 3. Develop evidence-based outcomes that contribute to our understanding of how students effectively learn mathematics and science.
33. The MSTP Project: Mathematics and Science http://www.hofstra.edu/Academics/SOEAHS/tec/tec_mstp.cfm	mathematics (6-8)	1. Enhance mathematical understanding of middle school students in participating schools; 2. Enhance mathematical content and pedagogical understanding of middle school teachers of mathematics, science, and technology in project schools; 3. Enhance higher education stem curricula and faculty pedagogical skills; 4. Align and improve mst curricula in project schools with respect to nys mathematics standards and assessments; 5. Increase the number of underrepresented minorities entering the mst teaching workforce in new york state; 6. Enhance the capacity of the nysed, partner universities, schools, and districts to engage in ongoing improvement of middle school mathematics; and 7. Disseminate an innovative middle school mathematics program model.
34. The East Alabama Partnership for the Improvement of Mathematics Education (TEAM-Math) http://TEAM-Math.net	mathematics (K-12)	1. Improve the mathematics achievement of students in partnership school districts; 2. Reduce gaps in performance between subpopulations of those students; 3. Increase the content and pedagogical knowledge of teachers in partnership school districts through intensive, sustained inservice, and increasing the understanding of school administrators of effective mathematics instruction; 4. Increase the supply of qualified teachers through improved retention in partner school districts and recruitment of new teachers into teacher preparation programs at the institutions of higher education; 5. Redesign the preparation of teachers at partnership higher education institutions to better provide new teachers with the content and pedagogical knowledge needed to effectively teach mathematics; 6. Align district curriculum, instructional materials, and assessment practices to support instructional improvement; and 7. Improve parental and community knowledge about mathematics education.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
35. Partnership for Student Success in Science (PS3) http://www.basee.org	science (K-8)	1. Build a sustainable long-term teacher development model for science in the region that leads to an increase in the pool of well-prepared K-8 science teachers; 2. Develop regional leadership capacity that provides and sustains high quality science teaching and learning; 3. Ensure that all children have an outstanding science program that prepares them for complex decision making, technological careers and productive citizenry; and 4. Establish science as the vehicle for underrepresented minorities and English Language Learners (ELL) to become successful students. *Specifically:* *a. Raise the overall science achievement in all PS3 targeted schools and narrow the achievement gap between PS3 high priority schools and their higher performing counterparts;* *b. Improve the capacity of preservice and inservice teachers to deliver high quality science instruction;* *c. Build the critical system supports necessary to help teachers achieve improved instruction and student success; and* *d. Build a functional and healthy partnership.*
36. North Cascades and Olympic Science Partnership http://www.ncosp.smate.wwu.edu	science (3-10)	1. All students succeed in challenging courses aligned with standards; 2. Administrators understand and support science education reform goals and programs; 3. Knowledgeable and confident teachers use curriculum with integrity and fidelity; 4. Increase the quantity, quality, and diversity of science teachers entering the workforce through effective preparation, recruitment, and retention; and 5. Science education research provides evidence-based contributions to the learning and teaching knowledge base.
TARGETED: Cohort III		
37. Boston Science Partnership No External Website	science (6-12)	1. Raise Boston Science Partnership (BPS) student achievement in science; 2. Significantly improve the quality of BPS science teachers; 3. Increase the number of students who succeed in higher-level courses in science and who are admitted to and retained in university science and engineering programs; 4. Improve science teaching both in BPS and at the universities; and 5. Institutionalize these changes so that the Boston Science Partnership and its work will be sustained.
38. Math and Science Partnership in New York City (MSPinNYC) No External Website	mathematics and science (9-12)	1. Develop partnerships and change cultures among a number of CUNY's senior colleges, community colleges, and two of ten Regions within the New York City Public School System; 2. Create, scale-up, implement, and field test student support, teacher recruitment, and a Collaborative Teaching Laboratory (CTL) professional development model; 3. Improve student understanding of content and performance on examinations; 4. Ensure that research characterizing the scientific method permeates every aspect of the project; and 5. Institutionalize and sustain project outcomes.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
39. Project Pathways: A Math and Science Partnership Program for Arizona Targeted Project Track No External Website	mathematics and science (9-12)	1. Produce a model that generates a new professional enhancement delivery system for supporting secondary STEM teachers' continued professional growth; 2. Generate improved mathematics and science learning and achievement in grades 9-12; 3. Institutionalize the support structures, personnel development, and instructional sequences of a content-focused professional development system supported by professional learning communities; and 4. Develop adaptable, transportable research-based tools to support and assess the Pathways professional development system and its components. *Objectives:* *a. Increase secondary student achievement in math and science;* *b. Close the achievement gap of minority students in each school by no less than 10%;* *c. Improve students' problem solving, scientific inquiry and engineering design strategies and confidence in their STEM abilities;* *d. Deepen teachers' understanding of mathematics, their knowledge of mathematical connections, and their ability to use mathematics in science applications;* *e. Shift teachers' practice to inquiry and project-based methods;* *f.Gradually increase teachers' ability to reflect on, monitor, and adjust their classroom practices;* *g. Measure shifts in teacher practice and student conceptual learning in ASU's introductory precalculus, calculus, physics, engineering, and other STEM courses; and* *h. Improve the success rate in ASU introductory precalculus, calculus, physics, and biology courses by no less than 15%.*
40. Rocky Mountain Middle School Math Science Partnership: 15 Months to Highly Qualified No External Website	mathematics and science (6-8)	1. Enhance teacher quality through intensive professional development that is grounded in scientifically-based research and tightly linked to quality instructional materials, and which results in certification for teaching mathematics or science in the middle grades and a corresponding endorsement in mathematics and science at the state level; 2. Enhance access to challenging curriculum ensuring that all middle school students in the partner districts will have equitable access to challenging curriculum by supporting teachers and their districts in the implementation of challenging, research-based curriculum and providing outreach, intervention and research in "differentiated instruction," particularly as it relates to Native American and Hispanic students; and 3. Enhance the teacher pipeline through institutionalized improvements in preservice preparation and recruitment focusing on expanding the supply and diversity of highly qualified middle grades teachers of mathematics and science.
41. A Greater Birmingham Partnership: Building Communities of Learners and Leaders in Middle School Mathematics No External Website	mathematics (6-8)	Build a partnership that jointly increases mathematics achievement levels for all students (K-12) and narrows differences between diverse student populations. 1. Increase the effectiveness of middle school mathematics teachers within GBMP school systems; 2. Increase the leadership capacity of middle school mathematics teachers within GBMP school systems; 3. Unite the GBMP stakeholders (teachers, administrators, parents, IHEs and the public) in support of mathematics education programs that are high-quality and effective; 4. Increase the mathematics achievement of all middle school students in partnership schools and reduce discrepancies of disaggregated mathematics achievement data within these schools.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
INSTITUTE: Cohort II		
42. Institute for Advanced Study/Park City Mathematics Institute http://www.mathforum.org/pcmi/msp	mathematics (6-12)	1. Provide a national model program for mathematics-based career-long professional development for middle and secondary mathematics teachers; 2. Effect systemic improvement of secondary mathematics teaching and learning in three school districts through a transfer mechanism designed with district principals, math specialists and teachers themselves; 3. Form a national cadre of "teacher-professionals," whose role is to partner with university and school district personnel in preparing teacher-leaders in mathematics, pedagogy and resource-building, to conduct content-based professional development for their fellow secondary teachers; 4. Expand the PCMI National Network of Professional Development and Outreach groups; and 5. Adapt the professional development model to the needs of local school districts where PCMI Professional Development and Outreach groups now exist or will be established, and implement the transfer mechanism to allow PDO teacher-leaders to reach all secondary mathematics teachers in their districts.
INSTITUTE: Cohort III		
43. The Rice University Mathematics Leadership Institute No External Website	mathematics (9-12)	1. Develop a cadre of 80 lead teachers in mathematics (two per high school in each of the school districts) with experience and expertise in providing content and pedagogical support to their mathematics departments. Lead teachers will serve as the intellectual leaders in mathematics and mathematics advocates on their campuses. They will act as change agents responsible for catalyzing reform in mathematics instruction at their schools; 2. Establish a leadership program at individual campuses that will provide mathematics content and pedagogical support for the entire mathematics department at that campus; 3. Develop entire campus mathematics departments as cadres of highly qualified mathematics teachers who have the content and pedagogical knowledge to engage all students in rich and challenging learning activities; 4. Ensure that all high school students have access to, are prepared for, and encouraged to participate in challenging and advanced mathematics courses at their schools; and 5. Impact the instructional practices of CAAM/MATH/STAT faculty, post-docs, and graduate students.
44. NSF Institute: Preparing Virginia's Mathematics Specialist No External Website	mathematics (K-5)	Ensure a well-prepared mathematics specialist actively engaged in every elementary school in Virginia. 1. Prepare a group of 50 exemplary elementary school teachers to provide intellectual leadership as school-based Mathematics Specialists who combine: a profound understanding of the mathematics studied in the elementary grades; an enthusiasm for mathematics and its applications; the special knowledge needed for effective teaching of mathematics; and the leadership skills needed to serve as inspirations and resources for their peers and the mathematics education profession; and 2. Determine the extent to which a quality institute experience results in transforming the participating teachers from effective classroom teachers to disciplinary leaders who can infuse their schools and the broader profession with a commitment to taking the steps that enable all students to develop a deep understanding of mathematics and a capacity to be successful in advanced mathematics and science courses in subsequent years.
45. Standards Mapped Graduate Education and Mentoring http://brain.math.fau.edu/tiki	mathematics (6-8)	1. Facilitate a district-university partnership that raises the level of middle grade math and science achievement, teacher professional development, and involvement by university faculty. Provides the groundwork for subsequent extensions of the partnership to other grade levels, disciplines, and school districts; 2. Empower teachers to be fully cognizant of the framework of the standards and their impact on their day to day teaching; 3. Generate a network of teachers which can sustain and propagate this knowledge in all middle schools of the Broward County School District; 4. Enrich teachers with mathematics, pedagogy and technology integration specifically connected to the framework of standards that they must teach, so that their classroom becomes a rich and productive learning environment; 5. Empower teachers with new learning strategies derived from creativity and discovery strategies; and 6. Create a hierarchical community of teacher leaders and mentors that includes more than 50% of all middle grade math teachers. Over 20% will receive advanced graduate credit.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
46. University of Pennsylvania Science Teachers Institute: Preparation and Retention of Highly Qualified Science Teachers Through Content Intensive Programs No External Website	science (6-12)	1. Improve the academic science content preparation of the current grade 5-12 science teacher workforce in the Philadelphia School District in particular and the mid-Atlantic region in general; 2. Improve the knowledge base of the current grade 5-12 science teacher workforce in using instructional strategies, practices and materials consistent with a research-based approach to teaching and learning; 3. Improve the 5-12 student science achievement in the classrooms of participating teachers and through their leadership activities in the classrooms of colleague teachers as well; 4. Increase the number of 5-12 students who continue to pursue course work and/or are able to seek employment in the sciences and science related fields; 5. Develop and continue to nurture science educators who are catalytic at the department, building, and district level; 6. Provide technology, print, audio-visual, and laboratory resources for use in the teaching and learning of teacher-participants in their Penn STI courses and on-loan in their own classrooms; 7. Provide the opportunity for building and district level administrators to study science education research, work with hands-on science materials in a research-based teaching and learning environment and to work with other administrators on the leadership issues associated with improving math and science education in their schools; 8. Adopt the same research-based teaching and learning models into the teaching of the sciences and mathematics at the university level; and 9. Make the Penn STI's accessible to all qualified teachers through the necessary infrastructure for stipends, scholarships, appropriate course scheduling, and other logistics with might otherwise deter potential applicants.
47. The Fulcrum Institute for Education in Science http://fulcrum.tufts.edu	science (K-8)	1. Develop a multi-year science leadership institute for K-8 educators (The Fulcrum Institute); 2. Engage 130 teachers of science in a long-term learning process (over 400 hours) through face-to-face and online learning communities; 3. Produce leaders in the classroom, school, and profession; 4. Involve the scientists from Tufts University, TERC, and from the External Advisory Board in doing what they do best: providing (a) insight into the science for the developers of the institute and online courses (b) vivid (videotaped) examples of how scientists reason about, discuss, and do science, and (c) expertise that institute participants can learn from during the online courses and face-to-face workshops; 5. Develop online technologies that: (a) immensely ease professional communication among practitioners, (b) encourage educators to think about science as something that takes place throughout the day, including outside of the classrooms they teach, and (c) to provide models of effective standards-based science learning in diverse classrooms; 6. Dramatically restructure the university-school district relations with regard to the supervision and induction of preservice teachers; 7. Transform the institute into a CAGS (Certificate of Advanced Graduate Studies degree) for teachers holding Masters degrees; 8. Develop the institute (both online and face-to-face components) in such a way that it can be adopted by other universities; and 9. Track a wide range of measures related to the impact of the present project on teachers, their students and schools, and university faculty; promote the teachers' own research in their schools about student reasoning in science, and investigate the scientific reasoning of students, teachers, and scientists on the tasks integral to the institute.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
48. Math in the Middle Institute Partnership http://www.math.unl.edu/~jump/Center1/M2.html	mathematics (5-8)	Improve student achievement in mathematics and to significantly reduce achievement gaps in the mathematical performance of diverse student populations. 1. Enrich participating teachers' mathematical knowledge; 2. Assist teachers in transferring mathematical knowledge learned in M2 courses into the middle level mathematics courses taught by M2 lead teachers and the teachers in their learning team; 3. Develop participants' ability to teach diverse groups of students with different learning styles; 4. Develop teachers' ability to engage in action research with colleagues as they strive to increase the mathematical learning in their own schools; 5. Facilitate ways to embed mathematics into other curricula, especially in the sciences; 6. Create communities of professionals (linking mathematics teachers to each other and to university mathematicians and mathematics educators) who communicate regularly with one another; and 7. Develop intellectual leaders who mentor their colleagues' efforts to strengthen mathematics courses and curricula.
49. Oregon Mathematics Leadership Institute Partnership No External Website	mathematics (K-12)	Establish collaborative professional learning communities that engage in an ongoing cycle of reflection, dialogue, inquiry, and instructional action centered on meaningful data about students' mathematics learning needs. 1. Increase mathematics achievement of all students in core partner schools; 2. Close achievement gaps for underrepresented groups of students; and 3. Provide challenging mathematics coursework that support state and national standards through coherent evidence-based programs.
RESEARCH, EVALUATION, AND TECHNICAL ASSISTANCE: Cohort I		
50. Bridging Research and Practice in the MSPs: Technical Assistance for Use of Research and Data-Based Decision Making Website Unavailable	n.a.	1. Develop a model for technical assistance that will enhance MSP leaders' abilities to use research findings and evaluation data to implement, develop, and sustain their partnerships; help MSP leaders identify and address potential barriers to change; and cultivate increased capacity in the MSPs to achieve their goals of providing challenging curriculum for, and encouraging participation in, high-quality mathematics and science.
51. Building Evaluation Capacity of STEM Projects http://www.usu.edu/cbec	n.a.	Develop state-of-the-art evaluation models that are context-sensitive. 1. Establish collaborations that develop and test more sophisticated evaluation models (working through evaluation associations to obtain input from a wide array of evaluation experts); and 2. Work with directors and other stakeholders of STEM projects to implement and iteratively refine these models. *Objectives:* *a. Advance evaluation theory to yield models more useful in evaluating STEM and related projects;* *b. Improve evaluations of STEM projects; and* *c. Develop improved evaluation capacity in the United States.*
52. STEM-HELP (Higher Education Liaison Project) Website Unavailable	n.a.	1. Collect and analyze data from funded MSPs regarding the needs of both higher education and district partners for plans related to high-quality STEM curriculum implementation; 2. To create a series of professional development modules and workshop designs, including online support, that respond to areas of greatest STEM curriculum implementation need among the partnerships, and solicit input and feedback from relevant groups about their potential usefulness; and 3. To prepare a technical assistance plan to support the MSPs based on the results of the needs assessments, design study, and feedback process. The plan will build capacity related to the implementation of high-quality STEM instructional materials and textbooks within the higher education community.

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53. Adding Value to the Partnerships Evaluations http://www.addingvalue.org	n.a.	1. Increase the knowledge of MSP evaluators about design, indicators, and conditions needed to successfully measure change in student learning over time; 2. Develop useful tools and designs for evaluators to attribute outcomes to MSP activities; and 3. Apply techniques for analyzing the relationship between student achievement and MSP project activities to evaluate the success of MSP projects.
54. Incorporating High Quality Interventions into a Broader Strategy for Sustained Mathematics/Science Education Reform Website Unavailable	n.a.	Develop a technical assistance plan that will aid the MSPs in accessing knowledge, resources, and strategies to address key challenges of reform. *Objectives:* *a. Articulate a conceptual framework for reform, with implications for program design and implementation;* *b. Identify existing resources for incorporating high quality interventions into a broader strategy for sustained science/mathematics education reform;* *c. Consider alternative delivery mechanisms, and develop a plan to deliver technical assistance in a cost-effective fashion; and* *d. Develop a plan for evaluating the quality and utility of the technical assistance to be delivered.*
55. MSP-Network: A Technical Assistance Design Project	n.a.	1. Design a network that will encourage sharing of resources, programs, challenges, strategies, and solutions between the funded MSP projects and to connect them to outside resources such as the Centers for Learning and Teaching and Science of Learning Centers as well as to resources at the U.S. Department of Education and NSF; 2. Design a network that will allow for individual MSP projects to facilitate interaction within their project, between different partners (higher ed, schools, scientists) and constituencies (professional developers, administrators, teacher leaders, teachers); and 3. Design a network that will provide individual MSP projects and the MSP program as a whole with a public presence to the community, publicizing the effort, inviting community support and participation, and disseminating positive results.
56. Longitudinal Design to Measure Effects of MSP Professional Development in Improving Quality of Instruction in Mathematics and Science Education http://www.ccsso.org/projects/surveys_of_enacted_curriculum/index.cfm	n.a.	1. Determine whether PD activities supported by MSP programs are consistent with research-based definitions of quality PD; 2. Determine the effects of PD on mathematics/science instructional practices and content; and 3. Determine how MSP programs use study findings to improve PD effectiveness.
57. MSP Assessments Website Unavailable *Project not continued.	n.a.	1. Identify the student assessment needs of MSP programs and classrooms through a survey of assessments the MSPs plan to use, their current approaches to assessment, and their needs for additional forms of assessment and related technical assistance; 2. Design an assessment resource management system (ARMS) that takes advantage of the affordances of technology to serve MSPs nationwide by supporting access, use, customization, and development of a range of appropriate assessments for MSP programs and classrooms; 3. Plan the development of new assessment forms in mathematics and science, some of which may be technology-supported; and 4. Design a longitudinal study of the impact of MSPs on assessment practice at the classroom, school, district, and state levels.
58. Facilitating Mathematics/Science Partnerships (See Grant No. 59) http://www7.nationalacademies.org/msp	n.a.	1. Conduct workshops to assist the Mathematics/Science Partnership awardees, future applicants, and the NSF and Department of Education staffs in improving K-16 STEM education programs; 2. Design the workshops to address critical areas for improving the effectiveness of MSP projects; 3. Focus the content of these workshops on recent and future reports published by the National Academies that are directly relevant to the work being conducted by the leaders of the MSP projects; and 4. Provide the attendees the opportunity to gain a deeper understanding of research and issues contained in these reports, examine emerging best practices representing effective, evidence-based applications of the research to K-16 mathematics and science education programs, and apply these findings to their overall project designs and implementation work.
AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	**TARGETED SUBJECT(S) (Grades)**	**MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS**

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
59. Building from the Research: Envisioning Quality Science Assessments (See Grant No. 58) No External Website	n.a.	Convene a committee with the following goals: 1. Provide guidance and make recommendations that will be useful to states in designing and developing quality science assessments to meet the 2007-2008 NCLB implementation requirement; and 2. Foster communication and collaboration between the NRC committee and key stakeholders in the states and in schools so that the guidance provided by the NRC committee's report is responsive and can be practically implemented; and 3. Result in a consensus report that provides guidance to states about criteria to use in the development of new science assessments.
RESEARCH, EVALUATION, AND TECHNICAL ASSISTANCE: Cohort II		
60. Alternative Approaches to Evaluating STEM Education Partnerships: A Review of Evaluation Methods and Application of an Inter-organizational Model http://www.prism.gatech.edu/~gk18/STEM	n.a.	1. Review how partnership performance is evaluated in the STEM educational community and also in a variety of other settings drawn from other policy contexts, industry, and not-for-profits; and 2. Develop and test a model exploring how degrees of embeddedness among partners influence the process by which STEM educational outcomes are pursued and achieved.
61. Redesign of the AP Biology Course, Examination, and Teacher Professional Development Experience No External Website	science (9-12)	Dramatically improve the quality of learning and teaching in Advanced Placement (AP) science courses. 1. Collect, analyze, and synthesize information from a wide range of sources (input from scientists and educators, recent reports and studies on effective science instruction, etc.) on the most promising, effective, and up-to-date courses, teaching strategies, and inquiry-based approaches to learning in undergraduate introductory-level biology courses; 2. Plan a redesign of the AP Biology course, examination and teacher professional development that reflects the knowledge and resources acquired from this process; 3. Identify promising strategies and approaches to increase access and success in AP Biology among underrepresented students, particularly in urban and rural schools; and 4. Design a program for field-testing the new course, exam and professional development offerings after the completion of this initial phase of work.
62. Assessing Teacher Learning About Science Teaching No External Website	n.a.	1. Create and disseminate instruments that assess teacher opportunities to learn, and that measure changes in teacher science content knowledge, teacher pedagogical content knowledge, classroom practice, and student achievement; and 2. Develop and disseminate a process for creating these measures that can be used by others. By refining, carefully documenting, and disseminating the processes used to create the tools, ATLAST will enable the creation of tools for any science content area.
63. TERC MSPnet: An Electronic Community of Practice Facilitating Communication and Collaboration No External Website	n.a.	1. Expand MSP projects access to, and ability to share, resources, emerging research, tools, best practices, obstacles, and strategies; 2. Strengthen geographically dispersed partnerships by enhancing and sustaining dialogue through innovative collaborative tools, events, and structures; 3. Create a growing archive, for both researchers and practitioners, of the lessons and accomplishments of the MSP program; 4. Enhance the public's access to, and knowledge of, the MSP program; and 5. Conduct research on the impact of on-line formats, functionalities, and structures to enhance large-scale educational reform efforts.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
64. Online Technologies to Enhance MSP Teacher Quality Programs (See Grant No. 66) http://www.edc.org/cope_mspreta	mathematics and science (K-12)	1. Develop resources to inform the MSPs about approaches to online professional development, online enhancements for site-based professional development, and online tools and techniques to support professional learning communities; 2. Provide consultation services for a set of MSP projects that decide to use online technologies in their teaching enhancement programs; 3. Offer a capacity-building program that will enable MSPs to develop the capacity to incorporate effective online professional development within their projects; 4. Collaborate with the evaluators of the MSPs that use online technologies to inform future practices of those projects, other MSPs, and the field of professional development in general; and 5. Assess the use and potential use of online supports for improving teacher quality across the MSP projects, to inform a possible follow-up proposal to expand technical assistance, evaluation, and research in this area, within the MSP Learning Network.
65. MSP Motivation Assessment Program (See Grant No. 67) http://www.mspmap.org	n.a.	1. Develop and make available reliable, valid, and practical tools to assess a variety of motivation-related student outcomes in math and science; 2. Increase MSP and teacher understanding of how motivation-related outcomes contribute to student achievement in math and science; and 3. Assist teachers and MSPs by providing information about how these outcomes may vary depending on students' gender, age, ethnicity, or economic circumstances.
66. Leadership Content Knowledge and Mathematics Instructional Quality in the MSPs: A Study of Elementary and Middle School Principals (See Grant No. 64) http://www2.edc.org/CDT/cdt/cdttmi.html	mathematics (K-8)	Investigate the nature of elementary and middle school principals' Leadership Content Knowledge (LCK) and contribute to participating MSP's efforts to support elementary and middle school principals in doing classroom observation and teacher supervision. 1. Examine the characteristics and level of LCK that principals in the MSPs have, how LCK can be developed and improved, and how it affects principals' classroom observations, judgments about the quality of instruction, and interactions with teachers regarding mathematics instruction; and 2. Study empirical linkages between leadership practices, instruction, and students' mathematics learning.
67. Design, Validation, and Dissemination of Measures of Content Knowledge for Teaching Mathematics (See Grant No. 65) http://www.soe.umich.edu/lmt	mathematics (K-8)	1. Review prior work on the definition and measurement of content knowledge for teaching; and 2. Outline the design for measures development and dissemination, providing information both on progress to date and the proposed plan for work with MSP-RETA funds. *Specifically:* *a. Expand existing measures upward to capture middle grade mathematics content for teaching, and developing new measures in key content areas;* *b. Validate these measures through interviews with teachers, reviews by mathematicians and mathematics educators, and other means;* *c. Support high-quality uses of these measures via tools (database, core scales) and technical assistance to MSP evaluators;* *d. Build a self-sustaining system of measures use; and* *e. Build and test theory through piloting and validation work.*
68. Developing Distributed Leadership: Understanding the Role Boundary Tools in Developing and Sustaining Leadership for Learning Networks http://www.distributedleadership.org	n.a.	Develop a research and design program focused on leadership as a distributed practice in MSPs. 1. Develop a research proposal to investigate those distributed leadership practices that enable knowledge creation and innovation in MSPs and provide empirical evidence about how these practices effect changes in the practices of school districts and other institutions for improving mathematics and science learning; and 2. Craft a program of design work based on a review of the literature on the role of tools on developing and maintaining partnerships.
69. Research on MSP Teacher Recruitment, Induction, Retention No External Website	n.a.	1. Study the teacher recruitment and/or induction activities of 10 MSPs from among 2-3 MSP Cohorts; and 2. Carry out an in-depth case study on the MSP by the National Science Teachers Association and partners.

AWARD TYPE/COHORT/ GRANT No./TITLE WEBSITE	TARGETED SUBJECT(S) (Grades)	MSPs' PROJECT GOALS AND OBJECTIVES AS STATED IN GRANTEE DOCUMENTS
RESEARCH, EVALUATION, AND TECHNICAL ASSISTANCE: Cohort III		
70. Causal Inference in Instructional Workforce Research http://www.msu.edu/user/mkennedy/TQQT	n.a.	Using an existing database of approximately 550 studies designed to examine the relationship between one or more teacher qualification an one or more indicators of teachers effectiveness, examine and catalogue the variations in design and methods of studies on teacher qualifications, identify threats to causal inference that are associated with particular design variations, and empirically estimate the severity of these threats to the intended causal inference. 1. Develop a taxonomy of design variations and confounds; 2. Determine the relevance of study variations on effect estimates; and 3. Create a database of studies (a web-based index of studies).
71. The Effect of STEM Faculty Engagement in MSP: A Longitudinal Perspective No External Website	n.a.	Examine the effects of STEM faculty engagement in the Math Science Partnership (MSP) program. 1. Conduct a 4-year, longitudinal study of MSP's Cohort 2 projects using a comprehensive mixed-method approach involving both quantitative and qualitative analyses of teacher outcomes and student achievement over time relative to project strategies and activities.
72. Mathematician Study Group of State Standards in Mathematics No External Website	mathematics (K-12)	Analyze the progress of the 50 states toward standards-based curricula in mathematics from the perspective of professional mathematicians. 1. Create a locus of expertise within the mathematics research community on the nature and structure of state standards; 2. Provide comparative analyses of the treatment of some of the basic topics; 3. Explore suggestions for reconciliation of the more conceptual/process based standards with the more procedural/performance based standards; and 4. Highlight key understandings that underlie some of the performance standards.
73. MOSART: Misconception Oriented Standards-based Assessment Resource for Teachers No External Website	science (K-12)	1. Develop a test item database that combines the rich research literature on children's ideas with the standards of the National Research Council and the American Association for the Advancement of Science; 2. Assemble items into reliable and valid tests of science content for earth and space science and physical science at K-12 levels; 3. Apply tests as a diagnostic instrument to measure teachers' subject matter knowledge at the K-4, 5-8, and 9-12 levels in specific domains; 4. Determine the relationship between the accuracy of science teachers' beliefs about students' prior knowledge and instructional gains; 5. Conduct a comparison study of the relationship between student gains and the level of teacher knowledge prior to and following teacher institutes; 6. Develop a web site video for dissemination and support of developed tests, including video illustrating alternative and scientific conceptions (from 800 hours of archival footage); and 7. Establishment of a fee-for-service program to provide evaluation of MSP Professional Development Institutes.
74. RETA: Distributed Leadership for Middle School Mathematics Education: Content Area Leadership Expertise in Practice http://dls.sesp.northwestern.edu	mathematics (6-8)	Generate empirical knowledge about content leadership practice and knowledge as well as about how content leadership develops through formal and informal learning, design a set of tools to assess content leadership knowledge and practice and make these tools available to MSPs and Institute Partnerships. 1. Describe and analyze content leadership practices for middle school mathematics instruction and generate empirical evidence concerning which of these practices enables improvement in mathematics teaching and learning; 2. Describe the dimensions of knowledge for content leadership in mathematics at the middle school level and design, pilot, and validate these instruments for measuring content leadership knowledge; and 3. Generate more robust empirical evidence about whether and how content leadership knowledge can be learned through both formal learning opportunities (e.g., MSPs, Institute Partnerships) and informal on-the job learning.

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75. Knowledge Management for the MSPs No External Website	mathematics and science (K-12)	Manage MSP-relevant knowledge by attending to knowledge acquisition, knowledge sharing and knowledge utilization, using a three-stage model of knowledge management. 1. Locate existing research relevant to MSP work; 2. Analyze those studies to identify findings based on methodologically sound qualitative and quantitative research, noting the apparent generalizability of these findings; and 3. Share the research results in forms that are accessible to current and future MSP awardees.
76. Florida Science and Mathematics Education Summit No External Website	mathematics and science (n.a.)	Bring together key groups in a statewide carefully constructed summit of state political, business, and education leaders. 1. Establish a common understanding of the need for science and mathematics literacy in our workforce, the challenges of today's schools, effective methods of science and mathematics instructions, the nature and dimensions of creating change in mathematics and science instruction, and action plans necessary to achieve them; and 2. Provide a model for state summits and for developing the mutually supportive environments necessary to significantly improve science and mathematics education on a broad scale.
77. Mathematics and Science Partnerships Program Evaluation No External Website	n.a.	

APPENDIX E

Reported NSF-MSP Grantee Activity

APPENDIX E

REPORTED NSF-MSP GRANTEE ACTIVITY

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
COMPREHENSIVE: Cohort I		
1. North Carolina Partnership for Improving Mathematics and Science (NC-PIMS) University of North Carolina	• Establish a statewide policy advisory board and district leadership teams to align policies, improve communication between districts and state agencies, and integrate the project within district reform efforts • Hire full-time facilitators to deliver professional development and provide direct support to teachers • Educate building-level lead teachers (designated elementary teachers and department chairs of middle and high schools) who will become model teachers and provide in-service for peers • Create and deliver 11 professional development courses in science and math • Implement out-of-school student activities to generate motivation in preK-8 and information sessions for parents to assist them in supporting children's learning	• MSPnet • Annual Report • (5/21/04)
2. New Jersey Math Science Partnership Rutgers University	• Adopted and implemented high-quality, standards based curricula, supported by inquiry-centered materials aligned with those curricula • Supplemented state test with embedded alternative assessments that check for high levels of understanding of math and science • Designed and conducted professional development for teacher leaders • Built knowledge and support of top district administrators • Provided well-designed, continuing professional development for teachers, to strengthen understanding of content and implement practices based on curriculum materials that are aligned with state and national standards • Identified and adopted high-quality programs or program elements aligned with state early childhood math and science expectations • Involved parents and community leaders in all aspects of math and science improvement activities • Recruited potential teachers through high school, college, and community-based mentoring programs, with particular attention to minorities	• Annual Report • (10/03-10/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
3. Appalachian Mathematics and Science Partnership University of Kentucky	• Designed and developed or revise pre-service teacher education model courses in math and science; and corresponding in-service summer institutes • Established a project-wide distance-learning development team in math and collaborated to develop graduate courses in this format • Developed peer-supported collaborative learning program for high school students • Established positions for tenured professors in math and science outreach • Developed a communication and partnership network connecting school and district personnel, IHE faculty, and support organizations • Developed leadership at all levels through principal/counselor training, leadership interns, and parent/community engagement • Developed comprehensive plan to collect data that will inform the project's continuous development, identified needed adjustments, and provided basis for conclusions of success and quality of activities and the program	• Annual Report (6/17/04)
4. El Paso Math and Science Partnership University of Texas El Paso	• Enrolled teachers in the Master of Arts in Teaching Mathematics and the Master of Arts in Teaching Science to improve the quantity, quality, and diversity of the teacher work force • Implemented professional development plan that resulted in greater buy-in by math/science teachers of project's goals and improved math/science teaching and learning in classrooms across the region • Improved the capacity of math and science staff developers and high school teachers to implement the new math curriculum frameworks and modules thus deepening student conceptual understanding by addressing higher levels of cognitive demands • Developed math and science content leadership among school leaders through the implementation of classroom observation protocol and built capacity to utilize student achievement data • Utilized the expertise of local STEM faculty in providing professional development and developing math/science curriculum frameworks • Strengthened capacity for STEM faculty and K-12 teachers to conduct research in a variety of areas	• Annual Report (10/03-10/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
5. Mathematics and Science Partnership: FOCUS Faculty Outreach Collaborations Uniting Scientists, Students and Schools University of California-Irvine	• Create teacher leader cadre of secondary and elementary, math and science teachers • Utilize teacher leader cadre to promote ongoing professional development, math/science content knowledge and pedagogical skills, and provide necessary tools for a collaborative site action plan • Recruit and support future teachers along the educational continuum, from K-12 to university level and into credential programs • Continue Faculty Outreach Collaboration (FOC) programs (meetings, Web sites, publications, etc.) to improve student achievement in math and science • Engage PreK and K educators to collaborate with others and model practices, which integrate science, math, and literacy, improving student learning for young children in school settings and at home • Develop discipline dialogues system to address issues and gather stakeholders from all focal areas of the project (administrative concerns; teacher recruitment, preparation, and retention; disciplines of math and sciences)	• Annual Report (6/23/04)
6. SUPER STEM Education Baltimore County Public Schools (BCPS)	• Developed and provided professional development modules in math, science, technology, and performance-based instruction • Trained principals and other stakeholders on the systemic nature of the SUPER STEM initiative • Integrated the SUPER STEM instructional and assessment methods into the existing lesson plan • Supported ongoing development of math and science curricula and assessments aligned to state standards • Participated in ongoing systemic coordination of professional development efforts and established professional development sites and communication channels • Utilized BCPS math and science coordinators and supervisors as in-service faculty and module developers • Utilized new grant-funded computer labs and technology in teacher and administrator SUPER STEM training	• Annual Report (8/16/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
COMPREHENSIVE: Cohort II		
7. System-Wide Change for All Learners and Educators (SCALE) University of Wisconsin Madison	• Produced a concept paper outlining criteria for all of the components of math and science teaching programs that each district will address and proposed timeline for adoption of policies for each of above components • Established policy outlining enhanced middle school math program for each district • Hosted multiple events where teachers, coaches, and others came together to discuss high-quality math and science instruction • Outlined plans and rollout schedule for recruiting and training math and science instructional coaches and lead teachers • Conducted reform pre-service and in-service STEM teacher education for teachers in the partner districts • Created mentoring and guidance experiences for middle and high school students, especially women and minorities • Created state-of-the-art science, technology, engineering and math immersion projects and implementing them system-wide	• Annual Report (8/11/04) • MSPnet
8. Puerto Rico Math and Science Partnership University of Puerto Rico- Rio Piedras	• Formed regional cadres of human resources at core partner universities to develop and implement the school support and professional development program • Funded and held summer camps for students (grades 6-12) • Conducted summer professional development workshops for math and science teachers • Developed programs to ensure that all math and science teachers (grades 7-12) are certified • Created and promoted a research agenda to strengthen math and science knowledge base • Established communities of learning to strengthen and sustain partnership	• Annual Report (10/13/04)
9. Promoting Rigorous Outcomes in Mathematics/Science Education (PROM/SE) Michigan State University	• Analyzed math and science standards in partnering states to support teachers in efforts to align local curriculum and instruction • Designed curriculum for Mathematics Associates • Drafted teacher knowledge standards for MSU	• Annual Report (6/01/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
10. Milwaukee Mathematics Partnerships: Sharing Leadership for Student Success University of Wisconsin-Milwaukee	• Established challenging math by ensuring curriculum alignment with the state standards and ensuring readiness for college expectations • Instituted a math teacher leadership role and developed principal leadership in math at each school and built a diverse cadre of math teacher leaders across the district • Established strong and diverse teacher preparation programs - recruitment, preparation, induction - in teaching challenging math for prospective teaching candidates of MPS • Established a math course sequence at UWM to be shared with IHE Network that strengthens math content achievement for prospective teachers • Developed and promoted professional development opportunities in math content-related pedagogy for continued professional growth of all teachers • Trained teachers for math leadership and supported the ongoing professional development of teachers in providing leadership for the math programs in their schools • Improved student achievement through collaboration with tutors and parent support groups • Restructured high school math courses for successful transitioning to college • Redesigned supports to meet the needs and be inclusive of the diversity of pre-service teachers in math classes and colleges and universities	• Annual Report (8/09/04)
11. Math and Science Partnership of Southwest Pennsylvania Allegheny Intermediate Unit	• Implement activities for intensive teacher leader professional development • Develop and presented professional development curricula with IHE faculty • Develop and disseminate math and science curriculum framework for K-16 educators • Build on-line presence to support and sustain sharing of effective strategies • Recruit and orient teacher fellows • Gather and analyze student achievement data • Implement management strategy and engage in strategic planning	• Annual Report (7/21/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
12. Partnership for Reform in Science and Mathematics (PRISM) Board of Regents of the University System of Georgia	• Drafted, reviewed, and revised math and science curriculum for P-12 students • Conduct a public awareness campaign of the need for all P-12 students to have access to and be prepared for and succeed in challenging courses and curricula in science and mathematics • Provide academic concentration in science and math for current P-8 teachers through two new USG faculty consortia (math and science) • Create and deliver professional development for P-12 teachers • Establish professional learning community to engage higher education and P-12 faculty • Established Institute on the Teaching and Learning of science and math to change how math and science are taught to future teachers • Initiated new policies to provide incentives and improve working conditions for teaching science and math in P-12 schools	• Annual Report (8/28/04)
TARGETED: Cohort I		
13. Mathematical ACTS University of California - Riverside	• Gathered and analyzed student-level data for use in increasing student achievement data • Recruit undergraduates for Community Teaching Fellowship Program • Developed the framework for a pilot Teacher Leadership Cadre • Create a database from the course transcripts of individual students to examine trends in course taking patterns and related areas of achievement • Recruit and expand availability of community accessible events	• Annual Report (11/19/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
14. Stark County Math and Science Partnership Stark County Educational Service Center	• Implemented teacher coach and college professor training and program • Implemented district action and intervention plans, which were developed by teacher coaches in conjunction with district curriculum directors, math and science specialists, and college coaches • Design and implement a collaborative plan to increase minority math and science teaching candidates • Implement academic and summer workshops for secondary math and science teachers • Opened professional development center to provide opportunity for districts to borrow technology and space to display standards-based math and science programs • Implemented internship programs for teachers to work at companies doing real-world work • Planned/implemented family math/science nights • Developed and implemented a plan to involve guidance counselors to encourage students to take challenging courses • Implemented lead teacher program in math for each middle and high school and encouraged formation of study group • Trained teacher coaches for licensure to support new teachers	• Annual Report (7/01/04)
15. Teachers and Scientists Collaborating Duke University	• Supplied and refurbished NSF-supported curriculum units matched to the NC Standard Course of Study and matched to needs of science classrooms • Trained teachers in use of selected curriculum units, in inquiry-based teaching and in use of scientist support • Prepared teacher leaders (trainers) who can train and coach their peers in the use of the curriculum units • Established a cadre of scientists well-trained in supporting teachers both in general and with regard to use of specific curriculum units • Connected supporting scientists and teachers electronically and in person • Evaluated teacher and student performance/attitudes • Established a teacher training and curriculum unit supply institution	• Annual Report (10/8/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
16. Vermont Mathematics Partnership Vermont Institute for Science and Math	• Planned and conducted professional development course for middle level teachers • Assessed teacher content knowledge • Developed content-rich graduate courses for teacher leaders • Established upcoming year work plans with partner schools • Provided training, networking, and support opportunities for teacher leaders • Designed and led content-rich professional development	• Annual Report (6/30/04)
17. Cleveland Math and Science Partnership Cleveland Municipal School District	• Plan, develop, and implement a graduate program for a Masters Degree with a specialization in math or science for the middle grades teachers • Implement a middle grades mentoring initiative in math and science • Plan, develop, and implement new graduate courses for a three-year program for high school teachers • Establish a faculty-in-residence program wherein university faculty spend time in a high school offering support in the preparation of materials, lectures, in-class demonstrations, or laboratory exercises • Develop a successful partnership, through collaboration with university faculty, Education Development Center, and CMSD; that adds value to teaching and learning math and science in grades 6-12 • Develop new graduate courses for math and science middle school teachers and adapt these courses for pre-service teachers of math and science	• Annual Report (8/06/04)
18. Alliance for Improvement of Mathematics Skills PreK-16 Del Mar College	• Develop staff and management team • Developed plan for IHE math faculty to participate in institutes and vertical alignment teams • Developed online survey to measure effectiveness of professional learning and use of technology • Utilized classroom observation instruments in ascertaining growth in teacher content knowledge and observing changes in teaching strategies	• Annual Report (10/07/04)
19. St. Louis Inner Ring Cooperative: Intervention Case Studies in K-12 Math and Science Washington University	• Enhanced capacity to provide a challenging math and science curriculum for every student, particularly grades 4-8 • Developed program to support teachers from pre-service education through the induction years of teaching • Developed a progression of professional development for teachers of grades 4-8 that impacts student achievement	• Annual Report (8/02/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
20. Texas Middle and Secondary Mathematics Project Stephen F. Austin State University	• Assessed teacher content knowledge • Developed curricula (syllabi) for graduate major in school math: middle or secondary level • Collected feedback from partner district administrators and counselors regarding needs for professional development activities • Developed curriculum for and convened summer institutes for teachers of grades 4-8 • Provided professional development activities for university math faculty • Drafted/presented several publications of the grant	• Annual Report (7/01/04)
21. E-Mentoring for Student Success National Science Teachers Association	• Recruited mentors/mentees and trained mentors for workshops • Develop and pilot a national professional development strand for administrators • Created WebCT (web-based conferencing site with resources, content, and discussion areas) and oriented users, provided workshops, and analyzed online interactions to ensure project objectives are being met	• MSPnet
22. Learning to Teach, Teaching to Learn[1] Oakland Unified School District	N/A	N/A
23. Indiana University- Indiana Mathematics Initiative Partnership Indiana University, Bloomington	• Conducted district coordinator meetings to review, revise, and implement the project action plan • Convened workshops for teachers on elementary and middle math curricula • Convened follow-up workshops to develop the content and pedagogical knowledge • Developed project Web site to provide ongoing professional development and support for teachers • Held district-wide meetings and parent nights • Designed, tested, and implemented courses, which link math content and pedagogy for pre-service secondary math teachers	• Annual Report (6/30/04)
24. Vertically Integrated Partnerships K-16 (VIP K-16) University System of Maryland	• Conducted biology cohort conferences • Conducted curriculum guide planning sessions and workshops • Promoted student enrollment in advanced science courses through guidance counselors • Conducted training sessions and provided practitioner research opportunities for teachers	• Annual Report (8/10/04)

[1] This award ended early by mutual agreement.

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
	• Implemented curriculum guides and assessments into instruction	
25. PRIME: Promoting Reflective Inquiry in Mathematics Education Black Hills Special Services Cooperative	• Offered professional development sessions and graduate courses for classroom teachers, K-12 • Began explicit training in Cognitively Guided Instruction (CGI), which has been shown to help reduce achievement gaps associated with ethnicity • Gathered, disaggregated, and analyzed K-12 student achievement data • Launched new student assessment project • Developing a K-12 math specialist certification program	• Annual Report (6/29/04)
26. Deepening Everyone's Mathematics Content Knowledge: Mathematicians, Teachers, Parents, Students, and Community University of Rochester	• Design and implement "reform math courses" that engage adult learners to inform the curricula of the K-12 partners • Develop teacher leaders within each district in order to build internal leadership capacity • Provide an on-going forum for mathematicians, teachers, parents, and community members to engage in conversations about issues in school mathematics reform	• Annual Report (8/27/04)
TARGETED: Cohort I		
27. SUNY-Brockport College and Rochester City (SCOLLARCITY) Math and Science Partnership: Integrative Technology Tools for Preservice and Inservice Teacher Education SUNY Brockport	• Presented results of Computational Math Science Technology (CMST) to the Congressional Science Committee • Institutionalized summer training sessions as graduate level courses • Trained middle and high school students in CMST • Offered teachers a Texas Instruments certification training • IHE faculty integrated CMST tools into more than 20 college courses • Published five journal papers on CMST pedagogy • Continued a mentoring program at partner school districts to offer professional development to teachers	• Annual Report (10/07/04)
28. Revitalizing Algebra San Francisco State University	• Designed lessons/curriculum • Implemented strategies to improve teaching of algebra • Convened seminars for teachers and graduate students becoming teachers • Created new teacher leaders	• Annual Report (9/29/04) • Project Website

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
29. Teachers Assisting Students to Excel in Learning Mathematics (TASEL-M) California State University - Fullerton	• Create management team structure to incorporate all partners and define their roles and responsibilities • Provide students with a standards-based, engaging, challenging, effective, and individualized curriculum • Analyze and diagnose students' weaknesses in math through data on student performance • Identify and use challenging and effective curricula to supplement available curricula • Develop and maintain a procedure and schedule for faculty partners to interact with teachers • Provide professional development activities throughout the year • Systematize and organize student achievement data • Design activities to increase communication among parents, teachers, and administration	• Annual Report (2/20/04)
30. Focus on Mathematics Boston University	• Conduct coherent, content-based professional development program • Establish study groups in all of the partner middle and high schools with a mathematician visiting for one day of work per month • Conducted two colloquia for the teachers • Enrolled teachers in math institute • Develop and implement Master's Degree program for mathematics teaching fellows • Design online courses • Research additional sources of financial support • Set student achievement targets and review curriculum to reach targets • Require student to develop and present a math research project at least once during Grade 8-11 • Increase collaboration in math community through study groups, seminars, and visiting mathematicians • Build communications infrastructure • Write articles for publication in journals, magazines, and newspaper	• Annual Report (6/17/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
31. Consortium for Achievement in Mathematics and Science Merck Institute for Science Education	• Developed and disseminated consortium-wide curriculum frameworks for math and science that are aligned with state standards • Identified, selected, and implemented standards-based instructional materials for math and science (provided PD to teachers) • Recruited undergraduate math and science majors for teacher preparation program • Recruited career changing scientists, engineers, and mathematicians • Aligned university instruction with New Jersey core curriculum content standards in math and science • Developed criteria for and selected professional development schools and recruited leaders from within • Developed new teacher induction program (including selection of mentors for new teachers) • Hold workshops for teachers on content and instruction • Provide in-class support for all teachers through courses • Develop and implement parent/community outreach programs	• Annual Report (6/1/04) • MSPnet
32. The Mathematics and Science Partnership of Greater Philadelphia (MSPGP) LaSalle University	• Develop teacher leaders to assist districts in reform process, mentor other teachers, and lead curriculum specific workshops • Promote teachers' use of challenging and engaging materials appropriate to student development levels • Encouraged secondary teachers to develop collegial relationships with disciplinary IHE faculty • Conduct professional development activities for teachers to increase ability to promote student learning • Collect baseline data enrollment and self-assessments from IHEs • Recruit high school students, math and science majors, and mid-career shifters into teacher preparation programs • Provide mentoring and peer support teams for pre-service teachers	• MSPnet

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
33. The MSTP Project: Mathematics and Science Hofstra University	• Collected and analyzed baseline student achievement data on middle school math • Conducted retreats for middle school teachers to enhance math content and pedagogical understanding • Involved higher education faculty members in workshops for middle school teachers • Recruited under represented minorities entering the MST teaching workforce • Established leadership teams to enhance capacity of partners to engage in project activities • Disseminated models and information via project Web site, newsletters, and meetings	• Annual Report (6/03/04)
34. The East Alabama Partnership for the Improvement of Mathematics Education (TEAM-Math) Auburn University	• Develop an initial set of curriculum goals for each grade and course • Review textbooks for their alignment with project goals and curriculum objectives • Develop a more detailed curriculum guide with suggested instructional sequences • Offer comprehensive professional development program for partner schools	• Annual Report (2/17/05)
35. Partnership for Student Success in Science (PS3) Palo Alto Unified School District	• Offered teacher training to recruit and train new teacher trainers • Collect baseline student data	• Annual Report (7/06/04)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
36. North Cascades and Olympic Science Partnership Western Washington University	• Assisted schools in setting goals and implementing plans to specifically target student achievement in science • Connected with district and building administrators to receive support of science education reform goals and programs • Convened academies (workshops) to improve knowledge, provide support and disseminate acquired knowledge with other teachers • Created a scholarship program to increase quantity, quality, and diversity of science teachers entering the workforce • Pilot school-based student club that would support future teachers • Revise elementary education major at partner IHE • Expand science tutoring program to further extend its geographic reach • Prepare teacher leaders with skills in coaching and mentoring to support new teachers or student interns • Recruited secondary science education faculty and postdoctoral fellow to bring in expertise to build research agenda and build on faculty's ability to contribute to science education research	• Annual Report (6/08/04)
TARGETED: Cohort III 37. Boston Science Partnership University of Mass. - Boston	• Facilitate vertical teaming among teachers • Conduct seminars and training for teachers and graduate students • Recruited high school students to enter science and engineering schools • Develop Master of Science in Science Education program • Held conference on team building for leader teachers	• Annual Report (6/15/05)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
38. Math and Science Partnership in New York City (MSPinNYC) City University of New York (CUNY), Hunter College	• Conduct evaluations of hub schools • Structure and conduct professional development programs for teacher leaders and undergraduate interns • Identify IHE faculty to facilitate professional development programs • Form teacher-researcher teams that meet monthly to plan, conduct, and revise two lessons • Recruit into and modify teacher education programs • Develop mechanisms to ensure that what is learned at the micro level is sustained, scaled up, and institutionalized • Surface research questions to support implementation and practice	• Annual Report (6/22/05)
39. Project Pathways: A Math and Science Partnership Program for Arizona Targeted Project Track Arizona State University	• Developed, piloted, and implemented graduate courses for secondary math and science teachers • Organize fall summit for guidance counselors to provide them with the resources and information that they need to advise students on the benefits of continuing math and science course taking • Develop and pilot platforms for English language learners	• Annual Report (6/16/05)
40. Rocky Mountain Middle School Math Science Partnership: 15 Months to Highly Qualified University of Colorado at Denver	• Institutionalize the development, adaptation, and implementation of university course work • Create professional development activities that are grounded in scientifically-based research and tightly linked to quality instructional materials • Support teachers and their districts in the implementation of challenging, research-based curriculum targeting traditionally under represented groups for outreach and intervention	• Proposal (12/16/03)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
41. A Greater Birmingham Partnership: Building Communities of Learners and Leaders in Middle School Mathematics Birmingham-Southern College	• Develop and deliver summer courses to increase effectiveness of middle school math teachers • Revise existing and develop new UAB math courses • Proposed middle school math certification route • Recruit minority pre-service teachers • Conduct follow-up sessions and develop support team • Conduct outreach activities to parents, community, and administrators	• Annual Report (6/01/05)
INSTITUTE: Cohort II		
42. Institute for Advanced Study (IAS)/Park City Mathematics Institute (PCMI) Institute for Advanced Study	• Designed assessment instruments to provide baseline assessment data • Conducted professional development institutes for middle school and high school math teachers • Implemented video club as an interactive discussion of learning and teaching • Coached and provided individual support to teachers, especially younger ones	• Annual Report (6/21/05)
INSTITUTE: Cohort III		
43. The Rice University Mathematics Leadership Institute William Marsh Rice University	• Established roadmap for presenting the program to the district and school leadership and reviewing roles and responsibilities of each partner • Designed and uploaded project specific Web site and plan to set up e-communications system to facilitate support • Develop schedule and curriculum for the first summer leadership institute	• Annual Report (5/27/05)
44. NSF Institute: Preparing Virginia's Mathematics Specialist Virginia Commonwealth University	• Recruit teachers to serve as full-time, school-based mathematics specialists and develop/conduct training Institutes • Measured impact of Institutes in transforming effective classroom teachers into disciplinary leaders	• Annual Report (7/13/05)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
45. Standards Mapped Graduate Education and Mentoring Florida Atlantic University	• Conducted two week summer institute to create detailed syllabi for Master of Science in Teaching (MST) courses for Master Teachers • Created MST curriculum board and convened initial meeting • Offered two weekend workshops to publicize the institute partnership to middle grade math teachers and recruit 20 Master Teachers • Taught evening MST course for the new Master Teachers • Convened end of semester pedagogy meeting for master teachers and recruitment for summer institute from low performing middle schools	• Annual Report (4/23/05)
46. University of Pennsylvania Science Teachers Institute: Preparation and Retention of Highly Qualified Science Teachers Through Content Intensive Programs University of Pennsylvania	• Provide content intensive Master's degree programs for training in-service science teachers • Develop Master of Integrated Science Education degree for current middle school level science teachers • Develop Master of Chemistry Education degree for current high school level science teachers • Develop a resource center to support participating and graduate teachers as they become teacher leaders and implement classroom reforms • Create an Administrator's Math/Science Academy for school administrators to become better prepared at creating a school environment conducive to improved teaching and learning	• Proposal (12/16/03)
47. The Fulcrum Institute for Education in Science Tufts University	• Convened first Launch Workshop, which engaged teachers in hands-on science activities and introduced them to the Fulcrum staff • Conducted monthly meetings of the Science Working Group to develop curricula and curricular materials for online science education courses, which will be offered to teachers	• Annual Report (5/09/05)
48. Math in the Middle Institute Partnership University of Nebraska - Lincoln	• Developed and submitted for review all data collection instruments • Gathered baseline data for teachers on teacher knowledge, beliefs, and classroom practice • Submit an article for review by the Journal of Mathematics Teacher Education • Developed curricula and convened math institute for teachers	• Annual Report (5/26/05)

AWARD TYPE/COHORT/ GRANT No./TITLE PRIMARY INSTITUTION	ACTIVITY	SOURCE(S)
49. Oregon Mathematics Leadership Institute Partnership Oregon State University	• Select project staff and form district and school leadership teams • Conduct a leadership summit for orientation to the project, roles and responsibilities, and identification of priority professional development needs • Conduct planning retreat for project staff to plan for summer institutes and academic year follow-up activities • Conduct a leadership seminar for project staff and leadership teams around best instructional practices and math content knowledge for teachers • Conduct initial site visits to selected participant schools for project orientation and identification of priority professional development needs • Conduct first summer institute	• Annual Report (4/29/05)