Math and Science Partnership (MSP)

A Research and Development Effort in K-16 Teaching and Learning

Division of Undergraduate Education
Directorate for Education and Human Resources
A research & development effort at NSF for building capacity and integrating the work of higher education with that of K-12 to improve student achievement through a sharp focus on three inter-related issues:

- Ensure that all students have access to, are prepared for and are encouraged to participate and succeed in challenging and advanced STEM courses

- Enhance the quality, quantity and diversity of the K-12 STEM teacher workforce

- Develop evidence-based outcomes that contribute to our understanding of how students effectively learn the knowledge, skills and ways of thinking inherent in mathematics, computer science, engineering, and/or the natural sciences
178 Funded MSP Projects

12 Comprehensive Partnerships

50 Targeted Partnerships

25 Institute Partnerships

24 MSP-Start Partnerships

8 Phase II Partnerships

59 Research, Evaluation and Technical Assistance (RETA) projects
### MSP Timeline

<table>
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<tr>
<th>Solicitation</th>
<th>02-061</th>
<th>02-190</th>
<th>03-605</th>
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<th>08-525</th>
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<td>Fiscal Year</td>
<td>2002</td>
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<td>2004</td>
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<td>2006</td>
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<td>Appropriation (in millions)</td>
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<td># of Awards</td>
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</table>

- **Comprehensive**
  - Institute
  - MSP-Start
  - Phase II
  - RETA

- **Targeted**
  - Large Scale
  - Focused strategies
  - Teacher leadership
  - Capacity-building
  - Focused research
  - Research & Technical Assistance

**Total = 178**
States in which partnerships have been active

National Science Foundation
Math and Science Partnership

National Distribution of Partnership Activity

- States in which partnerships have been active
**Completely New MSP Projects**

**Targeted Partnerships**
- Maricopa CC College District
- SUNY at Buffalo
- University of Cincinnati

**MSP-Start Partnerships**
- Claflin University
- Five Colleges Inc
- Hampton University
- Northern Arizona University
- Rochester Institute of Technology

**Institute Partnerships**
- University of Florida
- Washington State University

**RETA**
- Arizona State University
- University of Nebraska-Lincoln
New MSP Projects – Old Friends

Targeted Partnerships
CUNY Hunter College
Tuskegee University
University of Toledo

Phase II Partnership
Arizona State University
MSP Learning Network Conferences Over the Years

2003: Building a Culture of Evidence
2004: Visions, Challenges and Opportunities: Strengthening Partnerships
2005: Envisioning Challenging Courses and Curricula
2006: Teacher Quality, Quantity, and Diversity
2007: Engaging STEM Faculty in MSP: Promises and Challenges
2008: Claims-Based Outcomes: What do we know? How do we know what we know? What do we still need to know?
MSP Learning Network Conferences Over the Years

2009: Findings in Teacher Education: New Approaches --> Transformative Possibilities?

2010: MSP: An intergenerational learning network

2011: MSP: From Partnerships of Innovation to Student Success
2012 Learning Network Conference

Framing Effective Teaching in STEM

• How do we define effective STEM teaching in preK-12 and post-secondary education?

• How do we prepare and support teachers and faculty to teach effectively?

• How do we know we are making progress toward more effective STEM teaching?
Framing the LNC

LNC Organizing Committee

University of Nebraska – Lincoln

Ruth Heaton       Lance Pérez
Katherine Morrison Wendy Smith

University of Massachusetts Boston

Hannah Sevian

LNC Evaluation by TERC

Jonathan Christiansen
James Hammerman
Framing the LNC

LNC Planning Committee

Eric Banilower
Brian Drayton
Felicia Martin
Patrick Morandi
Melissa Reeves

Kyrsis Rodriguez
Kwang Suk Yoon
Todd Ullah
Donald Wink

Meeting Support Staff

AEIO
BAV
Renaissance Washington, DC
# The MSP Team at NSF

## Program Officers
- Kathleen Bergin
- Maura Borrego
- Pam Brown
- Ron Buckmire
- Jim Hamos
- Lou Everett
- Don Millard
- Dick Peterson
- Joan Prival
- Elizabeth VanderPutten
- Lee Zia

## Core Staff
- Akiko Elders
- Philis Hauser
- Nabriya Horton
- Daphne Marshall

## Einstein Fellow
- Allan Phipps