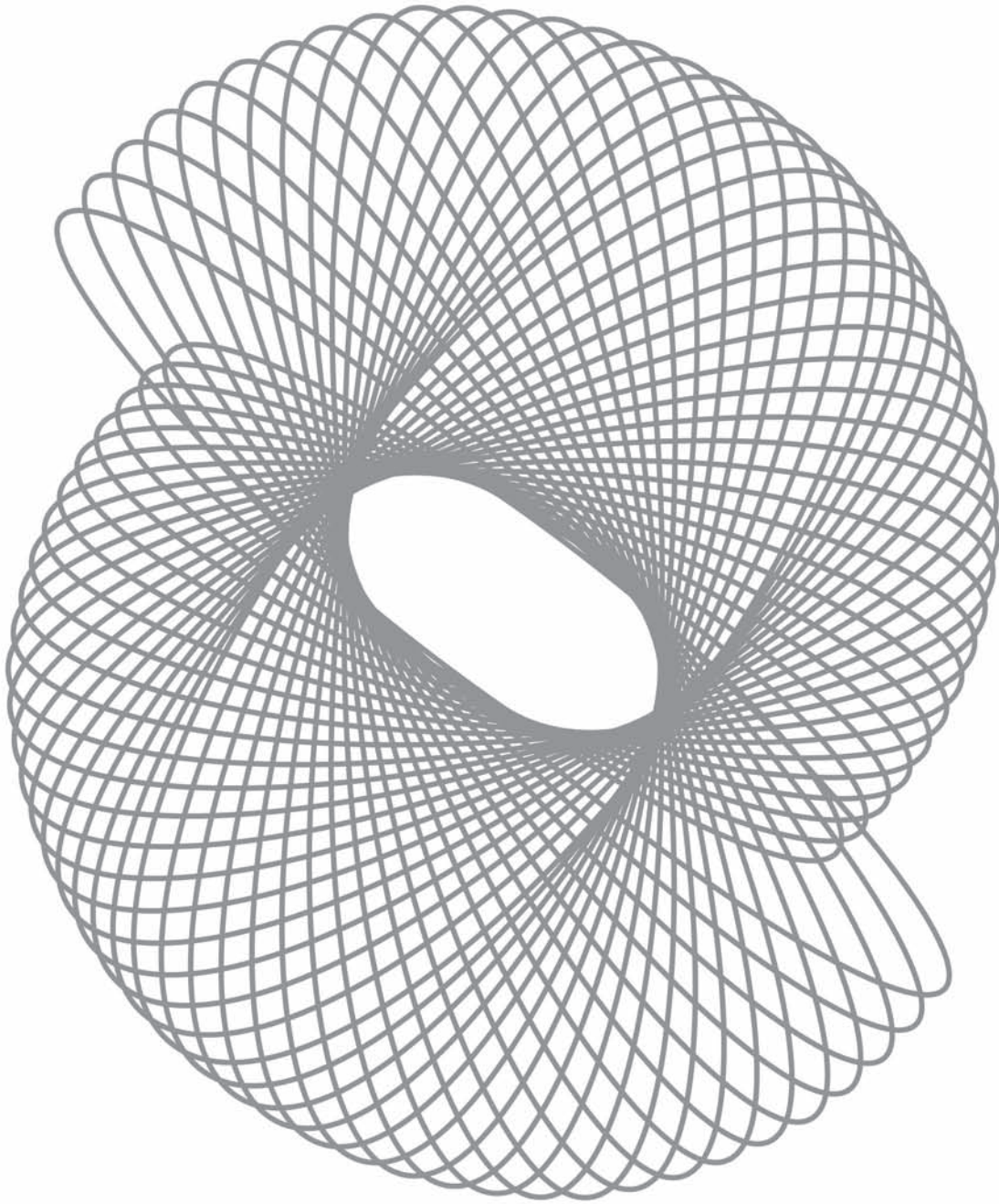


# LINKING LEADERS

Community for Change:

Celebrating Ten Years



nasa

science

technology

engineering

mathematics

education

nassmc

# LINKING LEADERS HISTORY

## **The Education Challenge**

In the mid 1990's, worrisome gaps were identified in the mathematical, scientific, and technological literacy of the U.S. population. Issues such as the under-representation of women and minorities in technical fields, student performance on international assessment instruments, and student readiness for the workplace emerged as critical weaknesses of the U.S. system. In conjunction, state educational standards for almost every subject became a nationwide trend.

## **The Perfect Partnership**

During this time, the National Aeronautics and Space Administration's (NASA) Educational Office concluded that a monolithic, one-size-fits-all model was inappropriate and ineffective for supporting technical education across America. NASA's education leadership sought to support the source of a coherent voice for the states' improvement agendas.

The National Alliance of State Science and Mathematics Coalitions (NASSMC) provided NASA with the perfect partnership opportunity. Initially formed in 1994, NASSMC grew out of a project sponsored by the Mathematical Sciences Education Board of the National Research Council. The purpose of NASSMC was to bring state coalitions of business, education, and policy leaders under one national umbrella. NASSMC set out to develop strategies to strengthen existing coalitions while at the same time building new ones.

## **Linking Leaders Emerges**

The Linking Leaders program was established by NASA in collaboration with NASSMC. This partnership provided the ideal vehicle to support the separate and diverse reform efforts of individual state coalitions as a strategy for systemic change. NASA's commitment to education is based on the support of each state's education vision. If the sectors of education, state government, and business share a collective vision, then NASA resources can be aligned to support it. On the other hand, if education, policy, and business leaders are all working hard but at cross-purposes to improve education, then the vector sum of their efforts may be zero.

Linking Leaders for Systemic Reform was launched in 1995 and the first Linking Leaders Workshop was held in Cleveland, Ohio in 1996. With the assistance of NASA funding, NASSMC has extended the Linking Leaders program to twenty-three states. In addition to building new coalitions, the program has evolved in recent years to offer specialized support and technical assistance to the older, more well-established coalitions. Now called Linking Leaders for Systemic Improvement, the program has changed the dynamics of NASA's interaction with the states and has led directly to the establishment of coalitions in four states where no organization existed prior to the NASSMC/NASA presence.

From Linking Leaders I in 1996 to Linking Leaders IX in 2004, the program has been conducted in the states of Alabama, Colorado, Florida, Idaho, Illinois, Iowa, Kentucky, Maryland, Minnesota, Mississippi, Nebraska, New Hampshire, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

# NASSMC HISTORY

The National Alliance of State Science and Mathematics Coalitions (NASSMC) is an umbrella organization for state coalitions of business, education, and public policy leaders united for the improvement of mathematics, science, and technology education (MSTE) for all students. NASSMC is a network of thirty-seven state coalitions and serves as the national advocate for its member organizations.

## Vision and Goals

A non-profit association, NASSMC works state-by-state in pursuit of its vision that all U.S. students will have the necessary knowledge of, understanding of, and skills in mathematics, science, and technology, so they can be productive in their personal, work, and civic lives. The nation will have a competent and competitive workforce that continues to meet the challenges of the global economy. NASSMC's member coalitions work to bring coherence and added value to the separate efforts of many individuals and organizations. Coalitions pursue goals not achievable by any one organization or sector working alone. All Americans need and deserve to receive the best possible education in mathematics, science, and technology for their personal and civic lives.

To this end, NASSMC performs a variety of beneficial activities:

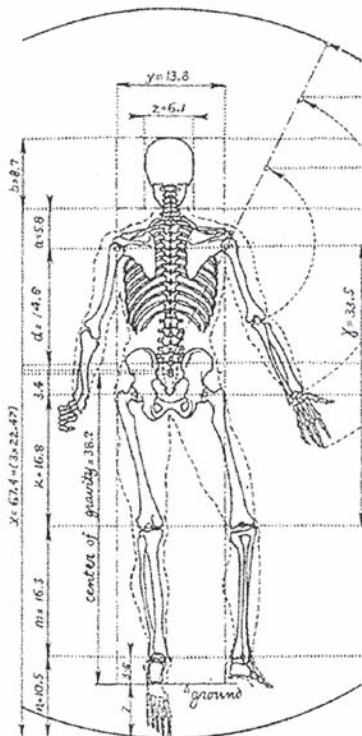
- Helping each coalition develop a state-specific strategy to improve mathematics, science, and technology education;
- Linking state coalition leaders to each other and to major national initiatives;
- Serving as the national ears and voice of its member coalitions;
- Providing a national forum for the discussion of critical issues relevant to continuous and systemic improvement of mathematics, science, and technology education; and
- Supporting timely dissemination of information relevant to the continuous and systemic improvement of mathematics, science, and technology education.

## NASSMC's Development

NASSMC evolved from a 1989 project of the Mathematical Sciences Education Board of the National Research Council. For five years, the project focused on developing coalitions of state-level leaders committed to promoting adaptation and implementation of new state standards for school mathematics and later, science based upon national models. In 1994, directors of the state coalitions initiated by the project decided to establish NASSMC as a national nonprofit organization with headquarters in Washington, DC. At the direction of its Board, NASSMC adopted a larger mission of supporting its member coalitions in the promotion of systemic improvement of mathematics, science, and technology education for all students in grades K-16.

In pursuit of its mission, NASSMC has designed and executed projects testing processes and materials for strengthening the structure and programs of its member coalitions. In collaboration with the Education Commission of the States and the NASA, it has developed a state-based model for working with business, education, and policy leaders to address continuous improvement in school mathematics, science, and technology. NASSMC also established the NASSMC Briefing Service, an Internet-based service providing leaders across the nation with concise and timely information about programs, research results, and public opinion relating to mathematics, science, and technology education.

In August of 2002, NASSMC moved its offices to the National Science Teachers Association (NSTA) Building at 1840 Wilson Boulevard, in neighboring Arlington, Virginia. In this new location, NASSMC works in close proximity to the Triangle Coalition for Science and Technology Education and with the programs and operations of NSTA. The organization continues, through the efforts of its member coalitions, to support comprehensive and coordinated change in mathematics, science, and technology education and to promote public awareness and understanding of the need for such change.



SciMath<sup>MN</sup> was founded to infuse national standards into the state educational system and promote high quality educational practices leading to a strong workforce for Minnesota's economy. Aided by a national consensus about the state of K-12 education and the emergence of national standards and standards-based systemic thinking, SciMath<sup>MN</sup> was established. The Coalition hoped to bring several partners together to focus attention statewide on quality teaching and learning for all students in mathematics, science, and technology, across the K-16 spectrum.

Minnesota has long been a leader in national assessments of mathematics and science achievement in the K-12 system. The strength in national assessments however, masks a lesser achievement internationally - particularly in mathematics. While Minnesota has strong achievement nationally, it also has one of the largest achievement gaps in the country when the data is disaggregated by ethnicity. Creating a system where all students achieve in mathematics and science through coursework in those disciplines or through strong connections within technological literacy fields, will power the workforce on which the economic future of Minnesota depends. A productive future for all students and the state's economy drives SciMath<sup>MN</sup>'s work.

### VITAL STATISTICS

Linking Leaders Class  
2002

Coalition Milestones  
Founded - 1993

Website URL  
[www.scimathmn.org](http://www.scimathmn.org)



## FEATURE STORY: *FAILURE CAN LEAD TO SUCCESS*

Early discussions on the possibility of forming a state coalition for math and science education in Minnesota occurred in the fall of 1991, as part of assembling a proposal for a "Statewide Systemic Initiative" (SSI) as requested by the National Science Foundation. Discussions included representatives of the state department of education, teacher professional organizations, and the local business community - a model that formed the basis of the SciMath<sup>MN</sup> coalition. Although the Minnesota proposal was eventually denied, participation in the proposal creation process helped orient Minnesota's education leaders toward the general goals of systemic reform.

After the NSF proposal denial, stakeholders continued to talk about the possibilities for a systemic initiative and eventually produced a second SSI proposal.

In February of 1993, NSF moved Minnesota's SSI proposal into the finalists' category and made a site visit. Although the NSF eventually denied Minnesota's second request for a grant, the Minnesota coalition had grown even stronger.

The Minnesota state legislature had already allocated \$1.5 million to the coalition as the required state "match" for the grant. Upon hearing of the NSF's proposal denial, the legislative sponsors of the coalition announced that the state legislature would honor its funding offer. Minnesota continued generous sponsorship from 1993 through 2001. This funding provided extraordinary resources in the early years of the Coalition and helped move standards-based systemic reform of Minnesota's K-12 mathematics, science, and technological literacy education into public conversations.

## COALITION RESULTS



SciMath<sup>MN</sup> hosts Annual Assemblies that feature a nationally known keynote speaker from a STEM field. Over the years the assemblies have expanded to statewide telecasts. Some have been preceded by day-long seminars and working sessions.



To influence local practice, SciMath<sup>MN</sup> initiated a summer “Teacher Academy” that helped train a cadre of classroom teachers and curriculum leaders committed to standards-based practice.



SciMath<sup>MN</sup> created K-12 Curriculum Frameworks in both mathematics and science, provided funding to disseminate the International

Technological Standards, and provided professional development to districts as they implemented these standards.



The coalition produced numerous documents and publications, including: the “What Should I Look For in My Child’s Math (Science) Program?” Brochure and “No Small Task: Changing Math, Changing Minds” – a case study of successful and unsuccessful implementations of standards-based curricula.



SciMath<sup>MN</sup> has received corporate foundation support from ADC Telecommunications, Medtronic, 3M, IBM, Lockheed Martin, and Qwest, collectively up to \$25,000/year. In addition, \$250,000 in funding was received from NSTA and Medtronic.

## FUTURE GOALS

SciMath<sup>MN</sup> has identified several goals for the years ahead:

- 1) Create stronger public awareness of the characteristics of high quality education in STEM literacy in an era of high accountability through forums and publications.
- 2) Impact public policy regarding issues influencing the quality of teaching and learning in STEM fields, how state standards align with national standards and established best practice, and the assessment of learning in mathematics, science, and technology through position papers, op-eds, and other communication vehicles.
- 3) Assist the three NASA Explorer Schools in Minnesota to become sustainable beyond the NASA funding years and utilize their expertise and experiences to strengthen the teaching of earth and space science in the state.
- 4) Redesign the SciMathMN website to give provocative and helpful information to various stakeholders in STEM education and link leaders throughout Minnesota.

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ADC Telecommunications Foundation

Len Mrachek  
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## LESSONS LEARNED

A “Critical Friends” session held with leaders of other state coalitions and NASSMC staff in the spring of 2003 assisted with the transition from a state-funded entity to an independent, nonprofit. The experience and expertise of other coalition leaders was extremely valuable.



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