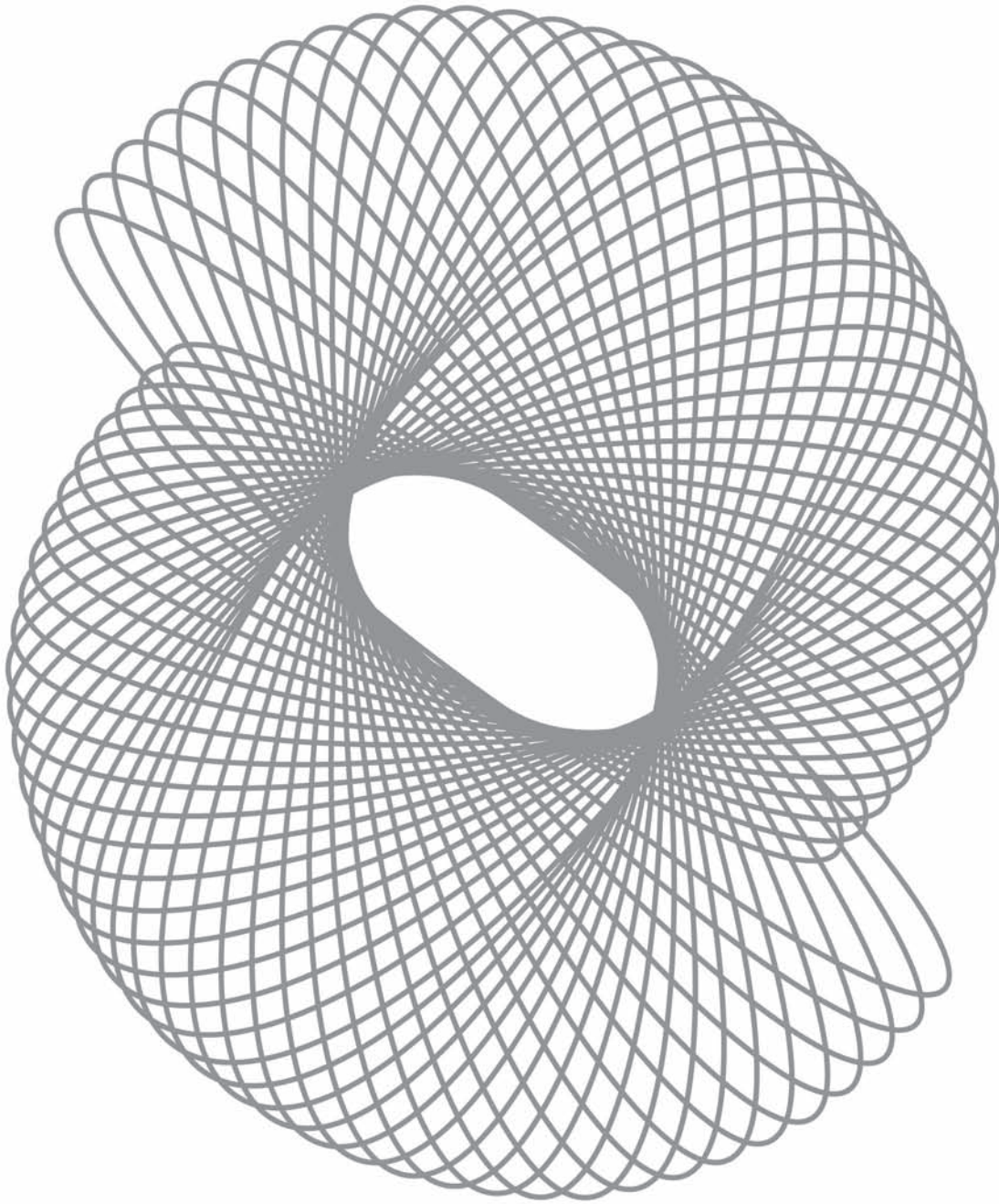


LINKING LEADERS

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:

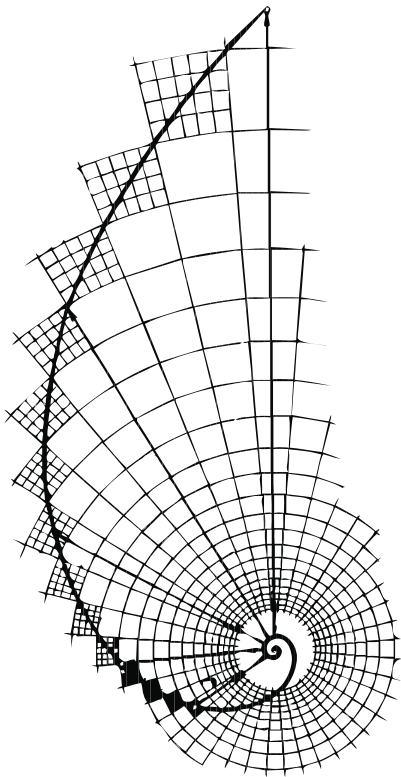
- Helping each coalition develop a state-specific strategy to improve mathematics, science, and technology education;
- Linking state coalition leaders to each other and to major national initiatives;
- Serving as the national ears and voice of its member coalitions;
- Providing a national forum for 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.



The Virginia Mathematics and Science Coalition (VMSC) exists to provide a prominent, trusted-voice advocacy for excellence in mathematics, science, and technology education in Virginia. Furthermore, VMSC provides a framework to facilitate partnership efforts between schools, institutions of higher education, and the business community in order to strengthen mathematics, science, and technology education in the state.

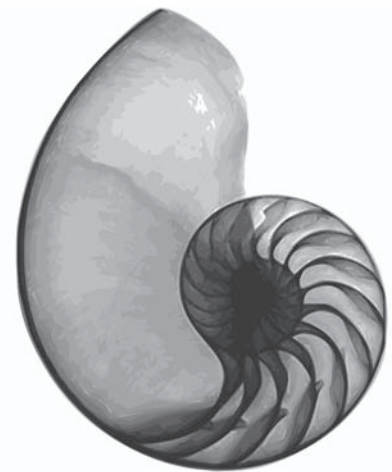
VMSC was established in 1989 as a response to an initiative of the Mathematical Sciences Education Board of the National Research Council. This initiative sought to develop coalitions of state-level leaders committed to the implementation of new state standards for school mathematics and science. The initial founders formed a group of six mathematicians and mathematics educators from four of Virginia's public universities.

VITAL STATISTICS

Linking Leaders Class
2000

Coalition Milestones
Founded - 1991

Website URL
www.vamsc.org



FEATURE STORY: *SOLVING THE EQUATION*

The history of "Mathematics Specialists" began in Virginia in 1988 when the Virginia Council of Teachers of Mathematics advocated that all elementary and middle schools should have Mathematics Lead Teachers. The new Virginia Mathematics Coalition supported this effort and in 1991, mathematics and science lead teachers were included in the Virginia SSI: Virginia Quality Education in Science and Technology.

For a decade the VMSC led efforts to move this agenda forward, but with little success. In 2001-2002 the Coalition decided that a systematic initiative was needed. This effort had three principle components: 1) a school/university partnership was created to develop a model training program for mathematics teacher specialists; 2) a partnership with the ExxonMobil Foundation was established that funded an annual series of one-day, statewide Virginia Forums to discuss all aspects of the benefits and issues related to implementing mathematics specialist programs; 3) a

Coalition Task Force was established and charged with preparing a report for education leaders and policy makers on how a teacher specialist would improve student learning.

This three-pronged approach created a critical mass supporting the concept of mathematics specialists. The school/university partnership doubled in size each year for four years. Attendance at the Forums grew at nearly the same rate. The Coalition efforts were matched with unusual luck as they aligned well with new federal legislation. In addition, the Coalition's former President - Mark Warner - was elected governor of Virginia.

Things began to change: school systems started implementing mathematics specialists, the Virginia Board of Education used the Task Force report as the basis for an endorsement, and the state department of Education designated more than 50% of their 2003-2004 MSP funds to specialist master programs.

COALITION RESULTS



During 1994-1999, the Coalition participated in and strongly influenced the development and adoption of Virginia's Mathematics, Science and Technology Standards of Learning and its requirements for teacher licensure.



Since 1993, VMSC has received continuous state funding for professional development mathematics courses for teachers. Beginning in 1995, VMSC led a Mathematics and Science Lead Teacher initiative that became a component of the Virginia State Systemic Initiative V-QUEST.



More recently with support of the Exxon-Mobil Foundation the Coalition's Lead Teacher effort has evolved into a state-wide program to obtain a K-8 Mathematics Specialist (Math Coach) teacher endorsement

in Virginia and to establish appropriate collaborative degree programs at our state universities. Continuous good work has created collaborative efforts involving more than 10 IHE, 35 school divisions, the state department of education, and the business community.



For the last four years VMSC has held state Forums aimed at spotlighting different issues related to the role of Mathematics Specialists. These have been spectacularly successful and attendance has tripled.



The Coalition publishes *The Journal of Mathematics and Science: Collaborative Explorations*, a forum for those engaged in the mathematical and scientific preparation of teachers. An issue on the Mathematics Specialists is was published in January of 2005.

FUTURE GOALS

VMSC has identified the short term goal of focusing principal efforts on the Math Specialists project. This includes:

- 1) Documentation of the impact of well-prepared specialists in schools where they receive appropriate administrative support.
- 2) Final State approval of the K-8 Mathematics Specialist endorsement.
- 3) Inclusion of K-8 Mathematics Specialists in the "Standards of Quality" state funding formula.
- 4) Implementation of Math Specialists in each elementary and middle school.

VMSC's long term goals include:

- 1) Changes in Virginia colleges and universities that can result in the graduation of many more individuals prepared to be highly successful mathematics and science teachers.
- 2) An enriched menu of science and mathematics professional development opportunities for teachers.

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LESSONS LEARNED

In the early years, the Virginia Coalition was led by academics. Initially, the Coalition was ill-prepared to work effectively with the state legislature, the State Department of Education, and the business community. As time passed, the stories of the other coalitions' leaders provided invaluable case studies to use in developing Virginia's own strategies for success. Gerry Meisels' stories of the early years in Florida and William Steenken's tales from Ohio were essential parts of the Virginia Coalition's coming-of-age.



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