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February 2007

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National Science Resources Center

Fact Sheet

Background and Mission

The Smithsonian and the National Academies—National Academy of Sciences, National Academy of Engineering, and Institute of Medicine—jointly established the National Science Resources Center (NSRC) in 1985. The NSRC’s mission is to improve the K–12 learning and teaching of science for students in the United States and throughout the world. The Smithsonian and the National Academies provide the NSRC with a unique platform and resources to catalyze change at all levels of the education system.

When the NSRC was established two years after release of the report “A Nation at Risk” from the National Commission on Excellence in Education (1983), fewer than 1 percent of the school districts in the country had established research-based science education programs. Through its leadership development work, the NSRC has engaged more than 700 school districts, which enroll an estimated 22 percent of the nation’s K–12 student population. These districts have adopted processes to initiate and sustain science education programs based on research and best practices.

Through its parent institutions, the NSRC brings expertise, resources, prestige and credibility to the reform of science education. The NSRC staff and the NSRC National Advisory Board, together with the NSRC’s parent institutions, are committed to building upon past accomplishments and ensuring that its goals for universal science literacy are achieved to the highest quality standards.

Funding for the NSRC comes from a variety of sources. The Smithsonian and the National Academies provide partial support for core NSRC operations. The remaining support for its operations and all program activities is from gifts and grants from government agencies, private foundations, corporations and individuals; registration fees for NSRC events; and publication sales.

Goals

The NSRC’s long-term goals are to develop and deliver a comprehensive program of services that accomplish the following:

- Inform more than 5,000 leaders representing the scientific and education communities about current research and best practices needed to reform K–16 science education in the nation
- Build leadership for science education reform with school district leaders, representing an additional 20 percent of the country’s K–12 student population
- Stimulate research and evaluation that will continuously improve and advance this work

Theory of Action

Programs designed to accomplish NSRC goals are grounded in the NSRC Theory of Action. This theory is based on the need for leaders to understand the relevant research and best practices. After developing a shared vision of effective science learning and teaching, participants in NSRC programs learn to implement a systemic approach for improving K–12 science education programs and learn about high-quality products and services they can use to move from initiating a program to sustaining it.

Strategic Approaches

The NSRC achieves its goals through programs delivered by three integrated Centers of Excellence. These programs:

- Build leadership capacity for science education reform in school districts, states, regions, nationally and internationally
- Improve the quality of science instruction by developing a suite of professional development opportunities for science teachers
- Disseminate research-based science instructional materials that provide students opportunities to learn important concepts in the life, earth and physical sciences; develop problem-solving and critical-thinking skills; and maintain positive attitudes about science and the natural world

Evidence of Impact

Delaware is a case study of how the NSRC’s leadership development program has impacted the state’s science education program. One of the leaders of the Delaware program stated that the Smithsonian program “demonstrates that education reform flows from strong, imaginative leadership.” He described it as “a valuable lesson in managing and directing change in science education [that] can serve as a model for change in other academic areas.”

Delaware’s size is comparable to one of the nation’s larger school districts. The statewide student body is economically and ethnically diverse; 44 percent are members of minority groups and 34 percent live in poverty. In 1996, Delaware began a statewide science education reform program that included a partnership with the NSRC. The reform work began in elementary sciences and has gradually moved to the middle and high school levels during the past decade.

Between 1997 and 2001, every school district in Delaware attended an NSRC Science Education Strategic Planning Institute and developed a five-year strategic plan for reforming its K–8 science education programs. The plans were based on the NSRC Science Education Reform Model. Using this model, the state developed a technical assistance infrastructure to help the districts implement research-based instructional programs. This infrastructure included sustained professional development programs for teachers and state tests that aligned with state standards and research-based instructional materials.

Results of state tests during the past six years provide evidence that Delaware is closing the achievement gap, beginning in grade four. At grade four, the percentage of students meeting the statewide science standards increased from 80 percent in 2000 to 90 percent in 2005 for all ethnic groups. African-American and Hispanic students’ performance increased from 73 percent in 2000 to 87 percent in 2005. The Delaware State Education Web site, at <http://dstp.doe.k12.de.us/DSTPMart/#Disagg>, has data on the continued progress Delaware is making in closing the gap for its students.