The Noyce Foundation 2009

"The role of the individual as thinker or prophet, as scientist or engineer, as entrepreneur or advocate, is not to be minimized. Yet these roles can thrive only in conducive social and industrial environments. Creative thinking can exist in the African bush as well as in Silicon Valley, but in the bush it will more likely revolve around new methods of trapping game than around artificial intelligence. Economies and societies are the laboratories that define the problems thinkers solve and on which entrepreneurs capitalize."

Robert N. Noyce

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About the Noyce Foundation

The Noyce Foundation aims to help young people become curious, thoughtful, and engaged learners. The Foundation focuses on a few key areas: improving the teaching of math, science and literacy in public schools, developing leadership to support student achievement, education policy and research, and finally, on expanding opportunities for students to experience hands-on science in out-of-school settings.

The Noyce Foundation was created by the Noyce family in 1990 to honor the memory and legacy of Dr. Robert N. Noyce, co-founder of Intel and inventor of the integrated circuit which fueled the personal computer revolution and gave Silicon Valley its name. Although he was an individual of daunting talents and intellect who was honored by two presidents as well as his academic and industry peers around the world, Bob Noyce also remained a humble and approachable man who believed fervently in democracy. In everything the Noyce Foundation undertakes, we are committed to promoting the qualities that Bob Noyce embodied: optimism, creativity, risk taking, and determination.

In recognition of Bob's concern about the shrinking pipeline of students interested and committed to science-related careers, the Noyce Foundation has focused on math, science, and supporting work in research and policy. Much of our focus has been on improving instruction in math, science, and early literacy in public schools. As schools focused on math and literacy in response to No Child Left Behind, leaving science behind, we emphasized support for out-of-school science programs that show promise of sustaining and engaging students' interest through middle school, a time when students tend to make critical decisions about subjects that interest them. Our informal science initiative includes support for leadership development in science centers.

2009 Year in Review

Dear Friends and Colleagues,

At Noyce, we are bullish on science in informal and out-of-school (OST) settings. In 2009, while the economy shrank, we ramped up our work to bring quality, engaging, hands-on OST STEM programming to upper elementary and middle school youth across the country.

We rolled up our sleeves and invested as thought and funding partners in major field-building initiatives. These are a few highlights but there is much more to see in our informal science grants list in this report and on our website.

How do science and children center chief executives and their senior leadership deepen connections with their surrounding communities for the public good? The Noyce Foundation, in partnership with the Association for Science-Technology Centers, Institute for Museum and Library Services, and the Gordon and Betty Moore Foundation completed its first class of chief executive leadership development and launched its second class. Members of the first class have been featured in the national and local media for their transformational initiatives and have moved into leadership positions in the United States and overseas to influence the future direction of science and children's centers.

How do we know if informal science programs are making a difference in sparking interest in science, changing attitudes and behaviors from fear to fun, and teaching kids to question and inquire? With Noyce support, the Program in Education, Afterschool & Resiliency (PEAR) now has a website with many of the known instruments to measure quality and impact, and they have a proposal in to NSF to gather smart thinkers and leaders in the field to figure out what common questions and the next generation of instruments should look like.

What does it take to scale quality STEM OST programming across multiple geographic settings to reach kids where they attend afterschool, community center, or summer programs? We are discovering what it takes with the National 4-H Council's multi-state Science, Engineering and Technology (SET) initiative, The After School Corporation's Frontiers in Urban Science Education (FUSE) initiative in New York City's afterschool programs, the NSF-funded Build IT program developed by SRI that is scaling within Girls Inc. beginning in New England states, Chabot Space and Science Center's Techbridge program that is scaling within Girl Scouts launching in California's Bay Area and Austin, Texas, and Foundations Inc. and the Education Development Center which have joined forces to offer STEM training of afterschool program leadership.

How can science and children's centers reach out with their quality curriculum and professional development resources to help infuse community afterschool programs with rich science programming? The Exploratorium's Center for Informal Learning in Science is working with 10 major science and children's centers in the Museums Afterschool: Principles, Data, and Design (MAPDD)

project to identify the key characteristics of quality science activities, professional development, and other elements of effective OST STEM programs.

On the formal education front, we decided to make large, multi-year investments in three leading organizations that are changing the way the nation recruits, trains, compensates, evaluates, and retains its most important assets: its teachers and principals. We are betting that The New Teacher Project, New Leaders for New Schools, and Education Resource Strategies will alter the landscape of how human resource departments are organized and how they focus on the human assets who make the critical difference in student learning and achievement.

In 2009, we wrapped up over a decade of work with Silicon Valley school districts in literacy and math.

Our Every Child a Reader and Writer initiative transitioned to a leadership group of districts that continue the work aided by robust tools developed over the course of the project and available on the Noyce Foundation website as well as the multi-media InsideWritingWorkshop.org website hosted by the Carnegie Foundation for the Advancement of Teaching.

Our Silicon Valley Math Initiative transitioned to the San Jose State University Research Foundation, and our intensive First in Mathematics Consortium program completed two years of pioneering work across nine entire school systems and led whole school lesson study efforts at the middle-school level. The groundbreaking work of Noyce staff and area teachers, principals, and district leaders is now available on the multi-media InsideMathematics.org website that launched in February 2010. At the same time, the Charles A. Dana Center based in Austin, Texas and the national online learning and support service, Agile Mind, integrated formative assessment, coaching, and professional development tools into their next generation of materials and offerings.

As they moved on to new endeavors, the Noyce Foundation trustees and staff lauded Audrey Poppers, our literacy director, and David Foster, our math director, for their contributions to Silicon Valley, California, and national school districts and educators.

We invite you to review our initiatives, grants, and tools at our redesigned website, www.noycefdn.org.

Sincerely,

Ron Ottinger
Executive Director

Highlighted Work:
The Inside Mathematics website

The Noyce Foundation has launched the Inside Mathematics website, a professional resource for educators passionate about improving students' mathematics learning and performance. Too often, teachers who excel at reaching students have few ways of sharing these strong practices with others – and teachers who struggle, struggle alone. Our classroom doors have remained closed too often and for too long.

Inside Mathematics opens those doors:

- to tested demonstration lessons presented to children and groups of observing teachers;
- to guided tours of reflective mathematics practice, identifying what makes teaching, learning, and improving instruction in mathematics a difficult enterprise and providing resources for teachers to improve their practice;
- to mathematics teaching and learning tools and resources to support classroom teachers', math coaches', and administrators' daily practices;
- and to a professional learning community in which you are invited to open your own classroom door and engage in conversation about your own mathematics teaching and learning.

There are resources that will be immediately applicable to the classroom, to a school setting, and to a district's work around mathematics. Teachers who have used these materials in Silicon Valley have found that they build understanding of mathematics not only in students, but in teachers themselves, and help increase student learning and achievement.

The website grew out of the Noyce Foundation's Silicon Valley Mathematics Initiative. SVMI is based on high performance expectations, ongoing professional development, examining student work, and improved math instruction. The initiative includes a formative and summative performance assessment system, pedagogical content coaching, and leadership training and networks. Coaches in SVMI learned strategies of re-engagement with students around mathematics assessments, and demonstration lessons on re-engagement are featured on the site.

Grants Made in 2009

Major Grants

Achieve (Washington, DC) $200,000
Support to engage with partners — the American Association for the Advancement of Science, the National Academy of Science and the National Science Teachers Association — to plan the development of rigorous, high quality, internationally-benchmarked science standards that address the demands students will face in general society, college and careers.

Afterschool Alliance (Washington, DC) $200,000
Support to establish a Director of STEM Policy position to encourage greater investment in and support for science, technology, engineering and mathematics learning in afterschool. (First year of a two-year grant totaling $400,000.)

Agile Mind (Grapevine, TX) $1,000,180
Support to increase Agile Mind's use by teachers and administrators and to increase engagement of students resulting in meaningful gains in achievement, especially by underserved students, which is Agile Mind's focus.

Association of Science-Technology Centers (ASTC) (Washington, DC) $786,335
Support for the continued development of the Noyce Leadership Institute, an international initiative to establish an executive leadership program for new and aspiring chief executives of science centers. The Fellows program Cohort 2 will continue to its conclusion in early 2010 and Cohort 3 will be carried out in 2010-11.

Chabot Space & Science Center (Oakland, CA) $100,000
Support for development and implementation of the Climate Change Outreach website which is a companion to the exhibit *Bill Nye the Science Guy's Climate Laboratory*, targeting Bay Area youth, especially those who are at-risk, and their teachers. The exhibit and the website will encourage and promote student interest in environmental, climate and other sciences. (Second year of a two-year grant totaling $300,000.)

Education Resource Strategies (Watertown, MA) $429,000
Support to scale Education Resource Strategies' Knowledge and Research infrastructure and practice, and position the organization for future growth. (First installment of a two-year grant totaling $2,075,000.)

Every Child a Reader and Writer Initiative ($58,982)
Every Child a Reader and Writer was established in the fall of 2000 as a joint venture between selected Silicon Valley school districts and the Noyce Foundation. The shared goal for this initiative was the improvement of literacy instruction in all elementary classrooms. Working together, the districts and Noyce have sought to develop strengthened literacy knowledge and leadership capacity within each of the districts with the aim of gradually releasing responsibility for the program to the participating districts. The transition was completed as of the end of June 2009.

Exploratorium - Coalition for Science After School (San Francisco, CA) $62,500
Support for research into best practices in after school programming and for the development of a business plan.

Lawrence Hall of Science (Berkeley, CA) $80,000
Support for Advancing Science After School to create and publish a series of after-school science units, including short YouTube-style videos for instructors. Additional funds for the project were provided by the David and Lucile Packard Foundation. (Second year of a two-year grant totaling $160,000.)

Mass Insight Education (Boston, MA) $50,000
Support for professional development for teachers of mathematics and science as part of the AP Initiative in Massachusetts.

National 4-H Council (Chevy Chase, MD) $585,840
Support for Science, Engineering and Technology (SET) programming in urban communities and organization capacity building for partnership development in order to build a solid infrastructure and exceptional program quality. Support for the design and implementation of an evaluation plan for the 4-H SET Program, including measuring youth outcomes. Support to collaborate with PEAR at McLean Hospital/Harvard to obtain ratings and reviews on the Assessment Tools in Informal Science website by the 4-H network.

National Girls Collaborative Project (Lynwood, WA) $86,900
Provide participant travel assistance to national conference of girl-serving STEM organizations; provide mini-grant opportunities to participants; publish and disseminate conference report.

National Public Radio (Washington, D.C.) $250,000
Support for Science Friday's core programming and its accompanying educational resources such as videos disseminated online and in museums, presence on social networking web sites and virtual communities, and podcasts. (Second year of a two-year grant totaling $500,000.)

New Leaders for New Schools (New York, NY) $2,000,000
Support for general operations of recruiting and preparing outstanding principals and supporting the urban public schools. (First installment of a 12-month grant totaling $3,000,000.)

New Leaders for New Schools (New York, NY) $400,000
Support for a research and evaluation plan to inform New Leader's principals and others of what is required to significantly raise student achievement in urban schools. (Second installment of a two-year grant totaling $800,000.)

Program in Education, Afterschool & Resiliency at McLean Hospital/Harvard University (PEAR) (Belmont, MA) $95,957
Support for marketing and improving the Assessment Tools in Informal Science website.

Project Exploration (Chicago, IL) $90,000
Support for a longitudinal evaluation of the past ten years of its work and its impact on students.

Rennie Center for Education Research & Policy (Cambridge, MA) $300,000
Support for strategic research and policy advocacy focused on issues including instructional challenges, dropout rates and opportunities to learn math and science. (Second year of a two-year grant totaling $600,000.)

Rennie Center for Education Research & Policy (Cambridge, MA) $70,000
Core operating support for the Rennie Center for its policy work in the 2010 fiscal year.

Silicon Valley Mathematics Initiative/First in Mathematics Consortium ($1,907,490)
The Silicon Valley Mathematics Initiative (SVMI) is a comprehensive effort to improve mathematics instruction and student learning in a large number of Silicon Valley schools and then to broadly disseminate the learning. The initiative was run by the Noyce Foundation through June 2009, when the work with districts transitioned to the San Jose State Research Foundation. The First in Mathematics Consortium was a districtwide, schoolwide effort in eight SVMI school districts to develop systems, tools, and protocols to significantly increase the number of students taking and succeeding in algebra with the ability to thrive in high school math courses.

Techbridge (Oakland, CA) $261,345
Support for a pilot to scale the Girls Go Techbridge curriculum within the Girl Scouts network in the Bay Area and Austin, Texas. Techbridge, a program of the Chabot Space & Science Center, is a science and engineering program for middle school girls. (Second year of a two-year grant totaling $463,470.)

The After School Corporation (TASC) (New York, NY) $100,000
Support for the pilot of the Frontiers in Urban Science Education Initiative to deliver STEM activities in 105 publicly-funded afterschool programs in New York City. Noyce funds supported trainings for program leaders, and line staff on research-based STEM curricula, online videos and other web-based support, and a program evaluation.

WGBH Educational Foundation (Boston, MA) $100,000
Support for the educational outreach and web components of "Design Squad," an educational engineering television program for children.

Other Grants

Cush Family Foundation (San Diego, CA) $7,500
Support for school-to-career education projects, mostly in the fields of science, engineering and technology.

Envision Excellence in STEM Education (Cleveland Heights, OH) $25,000
Support for a conference to provide support to state teams in developing STEM-focused Race to the Top applications.

University of Massachusetts, Lowell (Lowell, MA) $10,000
Support for DESIGNCAMP, a summer science and engineering camp serving students grades 5 – 11.

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