



# Lessons from a Decade of Mathematics and Science Reform

The Local Systemic Change Through Teacher Enhancement Initiative (LSC)



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## RELEASE

Contact: Marianne Smith  
510/530.9916 (cell ph. 510/333.2786)

## TEN-YEAR STUDY MAPS ROUTE TO QUALITY MATHEMATICS AND SCIENCE TEACHING

Good teaching requires well-prepared teachers. With the nation poised to reinvigorate US achievement in mathematics and science, findings released by Horizon Research, Inc. of Chapel Hill, NC demonstrate that what makes a difference in mathematics and science teaching is ongoing, content-focused professional development.

Directed by Dr. Iris Weiss, the Horizon Research, Inc. study examined 88 mathematics and science projects nationwide over a ten-year period. The National Science Foundation funded the projects under the *Local Systemic Change Initiatives through Teacher Enhancement (LSC)* program. Rather than offering “one-shot” workshops, LSC projects engaged teachers in year round, continuing education, which allowed them to develop and apply new knowledge in a supportive school district culture.

The Horizon Research, Inc. study of LSC projects found impacts on teachers and teaching evident after approximately 30 hours of participating in professional development. As a result of the programs, which included training in the implementation of district-designated instructional materials:

- The overall quality of mathematics/science lessons improved, including the quality of content in lessons;
- Teachers used more investigative practices, high-quality questioning and sense-making of content in lessons;
- The amount of time spent on science instruction at the elementary level increased;
- Teachers were more likely to use the designated instructional materials.

“Many of the key findings from the Horizon Research study of the LSC program address the *Rising Above the Gathering Storm* report's call for the development of outstanding K-12 teachers in mathematics and science,” says Dr. P. Roy Vagelos. Retired Chairman of the Board and CEO of Merck & Co., Inc., who co-authored the National Academy of Sciences report. “Not only do we need a vision of excellence, but we also need strategies for achieving that vision. Outlining the components of effective professional development, and describing the advantages and the disadvantages of program design and implementation across such a broad spectrum of geographic and social diversity, gives us a multifaceted lens for considering how to achieve excellence in mathematics and science teaching.”

For more information about findings from the study of Local Systemic Change (LSC) professional development for mathematics and science teachers, please visit the website: [www.pdmathsci.net](http://www.pdmathsci.net), or contact Marianne Smith, Communications, at: 510/530.9916, [msmith@pdmathsci.net](mailto:msmith@pdmathsci.net).

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