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September 2010

Research and Innovation in Learning

## Research Update

Center for Technology in Learning



### SRI Supports Scientists and Engineers Working in K-12 Schools

SRI International is supporting resource selection and strategic planning for outreach activities from scientific laboratories to K-12 schools. The National Defense Education Program (NDEP) contributes to the education, training, recruiting, and retention of individuals in science and engineering disciplines that are critical to the national security functions of the Department of Defense (DoD). The NDEP's mission is helping to meet the increasing demand for science, technology, engineering, and mathematics (STEM) professionals in DoD laboratories. NDEP supports scientists and engineers working with teachers on STEM activities in classroom settings.



[Read About the Recommended Outreach Resources](#)

SRI helped NDEP understand that success comes from stressing the partnership aspects of the collaboration, and the quality and quantity of the contact, relevance and alignment to other content that teachers are teaching. CTL staff interviewed representatives from NDEP outreach sites and found that they report the importance of leadership from the program coordinator and the unique contributions scientists and engineers can bring to students. Based on these findings, CTL recommended resources—hands-on, technology-based—that engage students in STEM learning and anchor teacher and scientist/engineer activities in class. CTL continues to participate in strategic planning as the NDEP sites grow toward maturity and sustainability. [Learn more about Resources for the National Defense Education Partnership program.](#)

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### SRI Bridges the Gap Between Knowing and Doing With Professional Development

SRI staff designed and implemented a new form of professional development—Bridging Professional Development—that provides teachers with specific methods for applying newly learned mathematics to their classroom practices, bridging a gap between knowing and doing. The project pioneered the innovative use of theatrical improvisation “games” as inspiration for teaching games, which become safe settings for trying out new teaching moves. SRI researchers Jennifer Knudsen and Nicole Shechtman led the project through 4 years of research and development, showing the effectiveness of Bridging methods in boosting mathematical argumentation in project teachers’ classrooms. Bridging is funded by the National Science Foundation. [Learn more about Bridging PD.](#)

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## CTL Highlights:

- CTL Director Barbara Means presented at the 2010 Aspen Institute Congressional Program, *Transforming America's Education Through Innovation and Technology*. View the presentation "[New Technologies with Promise for Supporting Learning](#)."
- [Now available](#) online and in print: *Learning Research as a Human Science*, edited by CTL's William R. Penuel and Kevin O'Connor. The 109th National Society for the Study in Education Yearbook (Issue 1), now published by Teachers College Record.
- CTL researcher [Christopher Harris](#) has been awarded a grant by the National Science Foundation to study the effectiveness of a new middle school science curriculum, [Project-Based Inquiry Science](#).
- CTL researcher [Daniel Zalles](#) has received an award from NSF and award recommendation from NASA for advancing research and development on climate change education: Studying Topography, Orographic Rainfall, and Ecosystems and with Geospatial Information Technology (STORE) and Data-enhanced Investigations for Climate Change Education (DICCE). Both will provide high school students with data about their local areas to increase their understanding of pressing contemporary environmental problems, build their scientific inquiry skills, and increase their motivation to pursue further courses and careers in environmental science.

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## Don't Miss Our January Research Update Featuring SRI's Work Linking Learning Sciences and the Economy

A new research article, scheduled to appear in the *Journal of the Learning Sciences* in early 2011, identifies eight key issues that learning scientists should be thinking about as they consider the connection of their work to economic needs. This new research resulted from an NSF project that brought together leading thinkers in the learning sciences with researchers who study education and the economy.

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