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Bharath Sriraman

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Editorial: NSF's Math-Science Partnership Projects- Measuring the trickle-down effect of American tax dollars

Bharath Sriraman
The University of Montana

STEM (Science Technology Engineering and Mathematics) is viewed as one of the cornerstones of maintaining competitiveness in an increasingly globalized work force. In the United States, the National Science Foundation (NSF) is one of the many federal agencies that allocate funding of STEM initiatives ranging from school projects onto to the training of graduate students in specialized fields. In 2011, the White House released a report compiled by its *Committee on STEM Education* that revealed its complete STEM portfolio¹. The portfolio consisted of over 250 STEM related investments totaling over 3 billion dollars across all the federal agencies receiving such funding. How does one compare this figure to the total allocation received by the NSF alone which is over 7 billion dollars as of 2012? The NSF budget is subject to the vicissitudes of the Congress and can vary considerably from year to year. In general the trend has been an increasing allocation from Congress. The NSF STEM budget is between one-sixth or one-seventh of the total allocation and further split into the categories of *Education and Training*, and *Research and Development*. The former receives an even smaller allocation from NSF than the latter- approximately one-fourth of the one-sixth (or one-seventh), in other words an apportionment that is between one-twenty fourth and one-twenty eighth of the total congressional pie. Translated into dollars, this amounts to approximately 250 million \$, of which MSP partnerships receive about 13 million \$ annually². In the larger scheme of things, 13 million \$ out of the total budget of over 7 billion dollars is 0.2 % or only 2 *out of every 1000* NSF dollars going towards Math Science Partnership projects! One could say that K-12 education is relegated to the trickle-down effects of the system in place, despite the political rhetoric of advancing the educational needs of our students.

Now that one has read the limited amount of resources allocated to K-12 educational projects, the good news is that much has been accomplished in terms of math-science partnerships as this journal issue will reveal. The guest editors Ruth M. Heaton & Wendy M. Smith have gathered together a collection of papers from the 2012 Learning Network Conference in Washington, D.C that brought together MSP leaders, namely higher education faculty from STEM disciplines, school partners, and project evaluators. The goal of the conference was to provide the various stakeholders in MSP projects to share what they were learning about mathematics and science education through their work. I.e., to articulate progress made through partnerships targeting science and/or mathematics teaching and learning in specific grade bands or disciplinary areas, as well as institute partnerships focusing on developing teacher leadership. The result is reports of seven MSP projects that are constitutive of what has been happening in the United States in terms of how the teaching and learning of mathematics has been improved in K-12 as a result of NSF dollars. The papers speak for themselves and are interesting for anyone wishing to learn more about the practical dimension of K-12 reform initiatives in the U.S. and what has been accomplished given the limited resources that are allocated for such work.

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¹ http://www.whitehouse.gov/sites/default/files/microsites/ostp/costem__federal_stem_education_portfolio_report.pdf

² Educational Research in the No Child Left behind Environment. *Journal for Research in Mathematics Education*, 2003 34(3): 185-190



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