

## Project Abstract

Since "A Nation at Risk" was released in 1983, the United States has been aware that changes in the world economy have made a higher quality science education a requisite for students at all levels of society if they are to have a chance of prospering in today's work force. The intent of this project is to transform science education in classrooms throughout northern New Hampshire by increasing educators knowledge of STEM content with an emphasis on engineering. The project consists of nine main components over a three year period. These components meet the varying readiness levels of educators, administrators and schools. From novice to advanced, these elements are structured to layer the intensity over the three year period, enriching and adding precision to the content knowledge and skills of educators. Leadership opportunities will allow educators to develop their facilitation and mentoring skills, enabling them to serve as "professional developers" in the region as schools progress in transitioning to the new science education program standards. The project will promote the integration of content, cross cutting themes, and the science process as outlined in Ed 306.45 of NH's Minimum Standards for School Approval.

The Gorham Randolph Shelburne Cooperative School District (GRSCSD) is the lead Local Education Agency for this project. GRSCSD will contract with North Country Education Services (NCES) for management of the project management. NCES will serve as the conduit for involving all the other school districts who participate in the consortium known as NCES. All schools affiliated with NCES, as well as non-public schools which fall in the geographic footprint of the region, have been invited to participate. These include all schools in SAUs 3, 7, 20, 23, 35, 36, 58, 68, 77 & 84. The total number of public school teachers within the region is 685. There will be opportunities for teachers in all grades, from kindergarten through high school, to participate in various project components.

The Institute for Higher Education partner for this project is Plymouth State University. The other lead partner in the project is White Mountain Science Inc., a nonprofit that supports Science, Technology, Engineering, Arts, and Mathematics (STEAM) education in both formal (schools) and informal settings for the curious and inventive of all ages.

In the first year, the project anticipates directly serving at least 268 educators and up to as many as 500.

Project components	Anticipated number of participants
A. Introduction to Engineering Design in the Self-Contained Classroom (3 parts, offered up to 20 times)	60-300 elementary educators in year one
B. Engineering Design in the Science Classroom	20 middle/high educators (8 sessions each) each year
C. Modern Practices & Content in Teaching Science	25/session, repeated 4 times = 100 participants/year
D. Graduate level STEM coursework	6 to 12 participants in each year
E. Leadership for Excellence in STEM	36 administrators, 1 per school each year
F. Co-Learning Design Challenge	Up to 15 participants in each year
G. Novel Engineering	Up to 25 K-8 teachers in each of 3 sets of training
H. Participant led workshops in Engineering Design	To be determined for year three
I. Innovative partnerships and mentorships	To be determined for year three