

Priority 2: Competitive Preference Priority -- Emphasis on Science, Technology, Engineering, and Mathematics (STEM). (15 points, all or nothing)

To meet this priority, the State's application must have a high-quality plan to address the need to (i) offer a rigorous course of study in mathematics, the sciences, technology, and engineering; (ii) cooperate with industry experts, museums, universities, research centers, or other STEM-capable community partners to prepare and assist teachers in integrating STEM content across grades and disciplines, in promoting effective and relevant instruction, and in offering applied learning opportunities for students; and (iii) prepare more students for advanced study and careers in the sciences, technology, engineering, and mathematics, including by addressing the needs of underrepresented groups and of women and girls in the areas of science, technology, engineering, and mathematics.

The competitive preference priority will be evaluated in the context of the State's entire application. Therefore, a State that is responding to this priority should address it throughout the application, as appropriate, and provide a summary of its approach to addressing the priority in the text box below. The reviewers will assess the priority as part of their review of a State's application and determine whether it has been met.

Recommended maximum response length, if any: One page

New Hampshire has developed a comprehensive plan to increase achievement in and access to science, technology, engineering, and mathematics education for priority schools and districts state-wide. The plan has been embedded throughout the application with this two-page section summarizing the primary STEM goals. Through this plan New Hampshire will guarantee all students will graduate from high school with the science, literacy, and numeracy needs to persist in college and pursue a career in our highly scientific and technological workplace. To achieve this the state will address the following goals:

- Increased access to high-quality STEM-related courses and experiences for all students in all schools, P-12, particularly for underrepresented groups and of women and girls; identify clear career paths in the STEM industries;
- Recruit, develop, and retain effective teachers and principals thus guaranteeing an equitable distribution of highly qualified math and science teachers throughout the state, particularly in areas of high poverty and rural areas;
- Support all priority schools and districts to adopt and implement innovative research and standards-based models for STEM teaching; and
- Actively increase student preparedness for college-level math and reduce the need for remedial mathematics for high school graduates enrolling in college.

A. Increased access to STEM-related classes to all students in all schools, P-12, particularly underrepresented groups and of women and girls

Several overall strategies will be used to address the goal of increased access to high-quality STEM courses state-wide. Priority schools and districts will complete a multi-layered review of their existing STEM-related course offerings. This review will be used for a gap analysis that will guide the strategic plan for increasing access to courses. Related programs, such as robotics and science competitions, career and technical student organizations, and work-related experiences will be evaluated as part of an overall strategy to generate student interest in STEM careers.

STEM courses are currently offered state-wide through the Virtual Learning Academy Charter School, and concurrent enrollment programs are offered in the same venue through e-Start. Continued development of virtual courses in STEM is a focus of the states' plan as well as the evaluation of access to all schools. Outcomes of initiatives will be measured with the student information system as well as the longitudinal data system. Data related to student enrollment and performance both at the secondary and postsecondary level will be analyzed to inform STEM coordinators on next steps.

New Hampshire is currently participating in the STEM Equity Pipeline project and is independently working with National Association of Partners in Education (NAPE) to promote equity in all STEM contents. The NH e-Learning for Educators program is participating in this group and will develop one or more online courses, to be delivered through OPEN NH, on Issues in Equity in the STEM areas that teachers can use for professional development.

B. Recruit, develop, and retain effective teachers and principals, and guarantee an equitable distribution of high quality mathematics and science teachers throughout the state, particularly in rural areas

The New Hampshire Department of Education will continue to partner with the University System of New Hampshire for pre-service teacher training in the STEM areas. Postsecondary teacher education programs will offer intensive STEM courses designed for P-12 teachers who need to strengthen their content knowledge.

Additionally, high quality professional development statewide will target mathematics and science teachers, particularly those in areas of high poverty and rural areas. This summer, Math-in-CTE, introduced to New Hampshire in 2008 will continue as a professional development model for mathematics and career and technical education teachers as it expands to a multi-state training in health sciences and pre-engineering programs.

STEM Professional Learning Communities will be implemented in the priority schools focusing on best practices, examination of data, and related actions with data analysis and learning how to effectively target

underrepresented groups for STEM related careers.

NHDOE is currently participating in the 10-state e-learning for Educators Initiative that offers online professional development courses in Science, math and Technology, providing teachers with opportunities to increase their knowledge in the STEM areas; these courses are offered through OPEN NH. Approximately 400 educators complete OPEN NH courses annually.

Federal funding has helped to develop, support, and maintain the six regional professional development centers, collectively known as the Local Educational Support Center Network (LESCN). While these centers are not exclusively technology centers, their focus is to integrate technology into their professional development in order to increase teacher skills in technology use.

C. Support all priority schools and districts to adopt and implement innovative research and standards-based models for STEM teaching

The new state STEM coordinator will work with the Research and Development Office to facilitate partnerships and identify resources in regions around the state. This office will inform schools and districts as a result of their extensive research utilizing USDOE What Works Clearinghouse and the US DOE Research Centers. Curriculums and teachers will be reviewed for effectiveness in STEM courses. A Curriculum Leadership Academy will be formed where teachers from priority schools and districts learn about standards based models for STEM teaching. These teachers will explore innovative and research-based material and models and become leaders in the efforts to support teacher and program improvement statewide at other schools. Again, through the participation of the federally funded grant with the STEM Equity Pipeline project, research based methods for promoting equity in teaching and learning is a major feature of this project.

D. Actively increase student preparedness for college level math and reduce the need for remedial mathematics for high school graduates enrolling in college

Early in 2000, colleges around the country became increasingly aware of the high level of remedial math classes being offered to incoming freshman. In New Hampshire, between 2005 and 2007, 70% of incoming New Hampshire community college students were placed in developmental mathematics. Similarly, at the high school level, 68% of juniors scored below proficient on the state New England Common Assessment Program (NECAP) assessment. Responding to this crisis, two important events took place: the New Hampshire Department of Education adopted new graduation requirements that raised the math units from two to three, and the Community College System of New Hampshire partnered with Plymouth State University and select secondary schools to develop a proposal for Mathematics Science Partnership grant funds from the New Hampshire Department of Education.

Although the increased math requirements is helpful, it remains possible that, due to block scheduling, students can complete these math requirements by the end of their sophomore year. The initial partnership resulted in a project entitled, “Making the Transition from High School to College” (MaTHSC) which proposed to research math under-preparedness among the New Hampshire high school students and to synthesize research and literature on the transition from high school to college at the national level. Results of this research led to a Mathematics Steering Committee that effectively coordinated agreement on mathematics assessment scores for college freshmen enrollment and the development of a common threshold mathematics course. The project uses ACCUPLACER as an advising tool for high school juniors and as a pre and post test for the newly developed dual-credit Senior Mathematics course (TAC.Math). This was successfully piloted at six high schools in 2008-2009 with promising results. Pre and post test scores on ACCUPLACER showed dramatic improvement. Interest and enrollments in Senior Math (TAC.Math) at the initial pilot schools exceeded expectations. Further implementation will offer this course in additional schools, including priority high schools during 2010-2011, while also expanding related professional development for teachers in each of the participating schools.

Priority 3: Invitational Priority – Innovations for Improving Early Learning Outcomes (not scored)

The Secretary is particularly interested in applications that include practices, strategies, or programs to improve educational outcomes for high-need students who are young children (prekindergarten through third grade) by enhancing the quality of preschool programs. Of particular interest are proposals that support practices that (i) improve school readiness (including social, emotional, and cognitive); and (ii) improve the transition between preschool and kindergarten.

The State is invited to provide a discussion of this priority in the text box below, but such description is optional. Any supporting evidence the State believes will be helpful must be described and, where relevant, included in the Appendix. For attachments included in the Appendix, note in the narrative the location where the attachments can be found.

Recommended maximum response length, if any: Two pages

Birth to five children are under the care of the New Hampshire Department of Health and Human Services (NHHHS) with the exception of preschool special education administered by New Hampshire Department of Education (NHDOE). The NHDOE works collaboratively with HHS to support programs for children and families and share resources that best serve communities. In 2007, legislation required all public schools to have a kindergarten program available to all children. This helped to create a more seamless system for young children.

NHDOE and NHHHS are deeply committed to continue a strong and deliberate collaboration through a revised interagency agreement to focus on statewide efforts to meet the following goals:

- Prioritize efforts of HHS and DOE in the 5% lowest performing schools
- Champion legislation to expand data systems to include public pre-k programs
- Work together to develop bipartisan support in both the House and Senate to support high quality programs with a focus on effective teaching and learning in early childhood programs
- Promote a seamless system between pre-k and k-3 with a comprehensive focus on readiness

- Work closely to ensure effective use of federal and state funds for Head Start; child nutrition programs; Title I; Child Find and Special Education; Bilingual Education
- Maximize existing resources including professional development funds
- Focus early childhood curriculum that attends to the needs and individual differences of children and create an active learning environment that is readiness oriented
- Work collaboratively to support parents and families in strengthening their sense of self and future.

Priority 4: Invitational Priority – Expansion and Adaptation of Statewide Longitudinal Data Systems *(not scored)*

The Secretary is particularly interested in applications in which the State plans to expand statewide longitudinal data systems to include or integrate data from special education programs, English language learner programs, early childhood programs, at-risk and dropout prevention programs, and school climate and culture programs, as well as information on student mobility, human resources (i.e., information on teachers, principals, and other staff), school finance, student health, postsecondary education, and other relevant areas, with the purpose of connecting and coordinating all parts of the system to allow important questions related to policy, practice, or overall effectiveness to be asked, answered, and incorporated into effective continuous improvement practices.

The Secretary is also particularly interested in applications in which States propose working together to adapt one State’s statewide longitudinal data system so that it may be used, in whole or in part, by one or more other States, rather than having each State build or continue building such systems independently.

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The New Hampshire Legislature mandated the creation of a Statewide Longitudinal Data System in 2004. Since then, the state has developed a system to enable *data informed education* throughout the state. NH has been a leader in our efforts to not only build an SLDS, but to take the information in the SLDS and empower educators to use the data. We built the system from the beginning with a focus on getting the data into the hands of teachers, educators, administrators, policymakers, and other stakeholders.

The state has been very successful over the past two years in changing the culture in NH to build awareness, ownership, and commitment to using data to inform instruction and to inform policy. The state implemented a product called PerformancePLUS that allows educators to analyze data, to create their own local assessments, to identify their lesson plans and curriculum throughout the year, and to tie all of this information together via common standards. Teachers throughout the state are using the system to analyze their students’ strengths and weaknesses, to build personalized assessments that are used to further analyze students’ gaps, and to understand the needs of individual students and groups of students. Special Education teams are using the SLDS to create Individual Education Plans (IEPs). Reading specialists are using the SLDS to

evaluate the impact of new literacy programs. Curriculum directors are analyzing data in the SLDS to understand the strengths and gaps in their curriculum and to modify the curriculum for their districts. These are just a few examples of many ways that educators are leveraging the SLDS to make real change in education.

The use of the SLDS has not stopped at LEA educators. The SLDS is being leveraged by research groups, by policymakers, and others to inform education practice. The same SLDS is also used to determine funding, AYP status and other critical education policies. Building the culture to use data to inform education is the most challenging component of this type of effort for any state and in NH we have been focused on this for several years.

The SLDS that has been leveraged by these stakeholders includes a significant breadth of information. The system has enabled analysis based upon many of the usual suspects – race, ethnicity, English language learners, socio-economic status, special education status, K-12 course and teacher information, early childhood, and postsecondary experience. But the system also goes beyond this in three important directions.

1. The system includes many other statewide (student level) indicators that can be used to better understand the impact of and need for programs. The indicators include such items as involvement in 21st century after school activities, career and technical education, attendance, suspension, absenteeism, and other state wide indicators.
2. The system allows LEAs to include student data that is specific to their schools – for example, involvement in specific academic programs, specific student interventions, student social, physical, and personal characteristics, as well as any other characteristic important to the given LEA.
3. The system includes multiple assessments. The system does not stop at the state assessment, but at a state level, includes many other assessments administered by schools. The system also has enabled LEAs to create their own local benchmark assessments and incorporate that data into the SLDS. Enabling multiple measures for students' growth is critical to data informed instruction.

The SLDS is being leveraged on a real-time basis not only to work with students who are enrolled in schools, but also to ensure students stay in school. NH has been a leader in reducing the drop-out rate for students in high school. Recently, the state increased the compulsory attendance to age 18. The SLDS is leveraged by schools to track students' transfer between

schools and ensure they arrive and stay in school. As part of our SLDS grant application we proposed expanding this to also include early warning indicators to help identify students long before they might drop-out and create interventions and programs to improve the students success in school. This includes not only keeping students in K-12 schools, but increasing the number of students who enroll in college and then ensuring that they are successful in college, along with less remedial work.

As part of our current RttT application, we will continue to expand the SLDS even beyond the current system. We plan to expand in the area of finance, extended early childhood and postsecondary information, job related data and additional school climate information. The state also anticipates expanding assessment data about high school students such as SAT, ACT and AP data, as well as, assessment data to identify achievements in the Arts. The NH Department of Education is working in collaboration with the NH Department of Health and Human Services, and the NH Court System. These collaborations will work on integrating this data regarding children who are court order placed by integrating with DCYF (youth and families) and DJJS (juvenile justice).

Finally, as part of our grant application we plan to create connections across states. Over the past year New Hampshire has collaborated with Connecticut, Maine, Rhode Island, and Vermont to consider ways to integrate our data systems. As part of our current grant application, we will first pilot and then implement the capacity to share student transcript information across the states. We have also been discussing the opportunities to expand the system we have that enables educators to access data to inform instruction to the other states. In addition to the interstate collaboration, our current SLDS grant application includes an intra-state postsecondary system to share data among our two- and four-year public colleges in NH. This expanded postsecondary system will enable us to have a much more accurate and comprehensive SLDS with regards to postsecondary education.

The state has built the foundation for data informed decisions. The culture that has been developed over the past two years and that we will continue to develop as part of the RttT efforts will lead to real change and growth for our students. The culture shift is the most significant components of our transformation effort. With this infrastructure and the associated grants, we will be able to easily extend the educators abilities by expanding the SLDS.

Priority 5: Invitational Priority -- P-20 Coordination, Vertical and Horizontal Alignment (*not scored*)

The Secretary is particularly interested in applications in which the State plans to address how early childhood programs, K-12 schools, postsecondary institutions, workforce development organizations, and other State agencies and community partners (e.g., child welfare, juvenile justice, and criminal justice agencies) will coordinate to improve all parts of the education system and create a more seamless preschool-through-graduate school (P-20) route for students. Vertical alignment across P-20 is particularly critical at each point where a transition occurs (e.g., between early childhood and K-12, or between K-12 and postsecondary/careers) to ensure that students exiting one level are prepared for success, without remediation, in the next. Horizontal alignment, that is, coordination of services across schools, State agencies, and community partners, is also important in ensuring that high-need students (as defined in this notice) have access to the broad array of opportunities and services they need and that are beyond the capacity of a school itself to provide.

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The NH P-16 Council was established August, 2007 via proclamation by Governor John Lynch to create a system of education for all NH students that begins in early childhood, ends after college, and promotes access, standards, accountability, and lifelong learning. The intent of the Council was to develop an integrated and seamless system that will provide context and direction for reform efforts. The NH P-16 Council was charged with bringing cohesion and alignment across various initiatives effecting P-16 systems. The ultimate goal of NH's P-16 system is to improve student achievement by getting children off to a good start, raising academic standards, conducting appropriate assessments, improving teacher quality and generally smoothing student transitions from one level of learning to the next. Members have labeled this a "seamless" system to underscore the need to recognize the interdependency and common goals among preschool, elementary, secondary and postsecondary education.

The NH P-16 Council is very active today. Membership includes:

- Office of the Governor Education Liaison Christen Lavers
- Commissioner of Education Virginia Barry
- University System of New Hampshire Chancellor Ed MacKay
- Community College System of New Hampshire Chancellor Richard Gustafson
- Executive Director of the College and University Council Thomas Horgan
- Workforce Representative Michael Powers

- Executive Director of the NH Postsecondary Commission, Kathryn Dodge (Chairperson)
- Regional General Manager of Fidelity, Allison Stebbins (Business Rep)
- Jackie Crowell, Childcare Advisory Council

The Council has taken on some significant work over the last three years, including:

Tier I:

- ◆ Follow The Child model – using the Follow The Child model, which tracks student data on a number of variables, pilot test, with two self-selected high schools, a program requiring all graduating seniors to complete at least one college application. Pilot *Universal College Application*.
- ◆ Align NHDOE SASID (student data sharing system) P-16 – student progress and attainment to be tracked from HS through postsecondary using non-personal identification number providing quantifiable data for outcome measures including learning outcomes, program evaluation, access, retention, and graduation rates, as a first step toward identifying elements and practices that support those HS–college transitions and diminishing barriers that prevent students from pursuing postsecondary learning.

Tier II:

- ◆ Setting Goals system-wide and working concertedly and collaboratively to achieve them. First example: Reducing NH dropouts to zero, by creating multiple pathways to graduation from high school and engagement in college, based on student performance, not on seat time. (see NH Plan to Reduce Dropouts to Zero in Appendix A-3-19)
- ◆ Dual enrollment programs – create at least two demonstration programs whereby qualified and recommended high school seniors can enroll in USNH or NHCTCS courses (on campus or online) and received academic credit.
- ◆ HS – Higher Ed aligned standards – the P-16 working group will establish aligned high school exit standards and college entrance standards as a first step toward seamless P-16 transitions.
- ◆ Support for learning, increase retention P-16 – Examine cross-cutting supports of teacher preparation programs and in-service professional development for teachers, including technology and strategies for sharing academic performance data across systems to support student learning opportunities.

Meetings

Meetings are held quarterly each year. Each meeting includes a business meeting component along with a presentation by a member of the education community and discussion to keep the committee aware of current issues and trends.

Agendas are determined by the membership and the overall plan. Other professionals with expertise relating to agenda items may be invited to council meetings.

Next Up On Agenda

- Recruiting the Commissioner of Department of Health and Human Services, Nick Toumpas, as a regular member in order to pull in “systems of care” such as Early Learning Programs, Juvenile Justice, Child and Family Services, Mental Health Services, and Substance Abuse Prevention into the equation around eliminating dropouts and engaging a larger proportion of students in their education;
- Implement an Early Warning System, not just for dropouts, but for success in College, for students Pre-K through 16, (to be funded initially by a National Governors Association (NGA) grant for dropout prevention, beginning January, 2010.
- Lead and Participate in the Adoption of Common Core English Language Arts and Mathematics by August, 2010, by engaging high school teachers in the two content areas with college instructors with entry courses in the University, Community Colleges, and Private Institutions of Higher Education.
- Adoption and implementation of New England Secondary School Consortium Goals for system improvement.

GOAL	To ensure that every public high school student graduates prepared for success in the colleges, careers, and communities of the 21st century, and that their educational performance and attainment is competitive with their peers worldwide.													
OBJECTIVES	1. Graduation Rates Increase four-year, on-time graduation rates across the four states to ninety percent or higher.		2. Drop-out Rates Decrease annual drop-out rates to less than one percent.		3. College Enrollment Increase the percentage of students enrolling in two- or four-year college-degree programs to at least eighty percent.		4. College Preparation Reduce the number of students required to take remedial courses during their first year of college to five percent or less.		5. College Success Partner with colleagues from higher education to ensure that more students enroll in and complete a postsecondary degree.					
BARRIERS	Persistent inequities in schools and a decline in economic opportunity across the region.			Shifting educational needs in the 21 st century and low student attainment of relevant skills, knowledge, and habits of mind.		Insufficient cultural understanding and political will needed to accept and embrace a new vision of public education.			Inadequate capacity at the state, district, and local levels for transformative innovations in secondary education.					
ACTIONS	Initiate a movement Build broad-based support for the Consortium's major initiatives among educators, policy makers, and business leaders, while engaging parents and community members in the educational process.		Co-adopt 21st-century learning standards Develop and co-adopt a set of integrated, forward-thinking learning standards that reflect the ways in which our youth will live, work, learn, and lead in the 21st-century.		Reshape educational policy Conduct an extensive review of the policies governing secondary education and develop new state and local policies designed to stimulate educational innovation.		Accurately measure student learning Explore, promote, and implement the use of performance assessments and standards-based grading practices that more accurately measure student learning.		Ensure international competitiveness Undertake a wide-ranging international-benchmarking effort and apply the characteristics of effective 21 st -century education to the creation of new models of teaching, learning, and leading.		Create versatile learning models Work with educators to develop innovative and internationally competitive learning models at the secondary level, beginning with the transformation of a core group of high schools in each of the four partner states.		Build collaborative networks Create in-state and cross-state networks comprising state agencies, support organizations, postsecondary institutions, districts, and schools that can share resources, in pursuit of the Consortium's common mission.	

Expected Outcomes by 2010

- Increased proficiency scores on NECAP in P-12 for each individual student
- Decreased high school drop-out rate
- Increased college attendance and completion, by percent at both the two-year and four-year institutions
- Better prepared graduates to enter the workforce as reported by exit assessment and alumni and employer satisfaction surveys
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