

Race to the Top Assessment Program  
Part B. High School Course Assessment Program  
CFDA# 84.395C

State Consortium on Board Examination Systems

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## **PART I.D. EXECUTIVE SUMMARY**

The forthcoming Common Core State Standards are a signal achievement for the United States, but they are of little value unless these content standards are translated into performance standards, curricula are set in place that are compatible with the standards, instructional materials are developed that align closely to the curricula, tests or examinations are created that match the content standards and the curricula, and teachers are taught to teach the new curricula well.

The State Consortium on Board Examination Systems (SCOBES) does not propose to create such systems for our high schools. Creating a full suite of courses across the whole high school core academic curriculum, along with first rate examinations matched to the Common Core standards and to the course designs, accompanied by high quality teacher training available at scale to many states, to say nothing of an additional program of world-class career and technical education with accompanying examinations, would take many years and would cost much more than the government has allocated for this program. Fortunately, all of this exists!

Based on extensive research conducted by our Project Management Partner, the National Center on Education and the Economy and many others, we have found a number of examples of Board Examination Systems that actually set the international standard in curriculum and assessments for high school worldwide. Board Examination Systems are complete programs constituting a core high school academic curriculum, well-conceived syllabi for each course, complete sets of instructional materials correlated with the curriculum, high quality assessments, high quality training for teachers of the courses and external scoring systems. We propose to use adapted versions of these instructional systems in our high schools. All of the providers of these instructional programs will be required to align them with the Common Core State Standards.

Many of these Board Examination Systems include very rigorous courses that can be assembled and adapted for use as a powerful STEM curriculum in our high schools. And at least two systems of technical qualifications, used all over the globe, can be adapted to create a world class career and technical curriculum, with aligned performance assessments, for this country.

By adapting the world's most rigorous and powerful high school instructional systems, including their assessments, we can offer world class high school assessments to our member states for the core academic curriculum, a specialized STEM curriculum and a program of career and technical education second to none in the world at a cost far lower, and on a timeline much faster, than would be required to build it all from scratch.

We plan to compete the opportunity for organizations all over the world to offer board examinations to our states, but, in this proposal, to make it concrete, we will illustrate our plan by describing some of the Board Examination Systems we have identified as exemplars of the sort of aligned instructional systems we have in mind.

We are proposing to offer the schools in our member states an opportunity to choose among a variety of certified Board Examination Systems. The lower division (freshman and sophomore year) examinations will all, however, be set to the same pass point for English and mathematics literacy. That pass point will be based on research we are currently conducting to determine empirically the literacy requirements of the initial credit-bearing courses in the nation's 2-year and 4-year open admissions postsecondary institutions. At least at the outset, students will volunteer for this program. Students who pass their board examinations will be given a new performance-based high school diploma, and allowed, if they wish, to leave high school and enroll in an open-admissions college as early as the end of their sophomore year in high school. Or they can stay in high school and begin an upper division (junior and senior year) board examination program intended to prepare them for admission to a selective college or a rigorous career and technical program resulting in an industry-recognized certificate.

In other parts of the world, the lower division Board Examination Systems are typically used to sort students out. We intend to use these internationally benchmarked examinations not to sort students out but to get virtually all of our students ready to succeed in college. The examinations, in combination with these powerful instructional systems and the new performance-based diplomas, will use the new standards to reverse the appalling failure rates of American high school students when they leave high school for college.

The first year of the program will be a year of planning and adaptation of the Board Examination Systems. Over the following three years, the adapted Board Examination Systems, and student support systems that go with them, will be tried out in 100 high schools across ten states. This field trial of the system will be accompanied by intensive research and evaluation. At the conclusion of this phase, the member states will expand the system statewide, based on the results of the evaluation. We have applied for an i3 validation grant to support certain aspects of this work. We present two budgets in this proposal, one that assumes that we win both this competition and the i3 competition, and another that assumes that we win only this competition.

**PART I.E. APPLICATION ASSURANCES**

<b>Race to the Top Assessment Program High School Course Assessment Program Grant Application Assurances</b>	
Legal Name of Applicant: State Consortium on Board Examination Systems	Applicant's Mailing Address: 2000 Pennsylvania Avenue, NW Suite 5300 Washington, DC 20006
Employer Identification Number: 27-2831914	Organizational DUNS: 962777293
Contact on Matters Involving this Application: Betsy Brown Ruzzi	Contact Position and Office: Deputy Director National Center on Education and the Economy (Project Management Partner)
Contact Telephone: 202-379-1800	Contact Mailing Address: 2000 Pennsylvania Avenue, NW Suite 5300 Washington, DC 20006
Contact E-mail Address: <a href="mailto:bbrownruzzi@ncee.org">bbrownruzzi@ncee.org</a>	

**PART 1.F. MEMORANDUM OF UNDERSTANDING**

See Appendix A for signed MOUs that meet application requirements, the Consortium governance terms and program requirements.

**SIGNATURE BLOCKS FOR APPLICANT**

**APPLICANT SIGNATURE BLOCK for Race to the Top Assessment Program High School Course Assessment Programs Grant Application Assurances**

To the best of my knowledge and belief, all of the information and data in this application are true and correct.

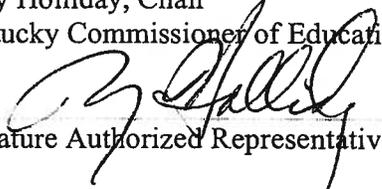
I certify on behalf of the consortium that each member of the consortium has agreed to be bound by every statement and assurance in the application and that each Governing State is fully committed to the application and will support its implementation.

I further certify that I have read the application, am fully committed to it, and will support its implementation.

Applicant Name and Title:  
State Consortium on Board Examination Systems  
Authorized Representative (Printed Name):  
Terry Holliday, Chair  
Kentucky Commissioner of Education

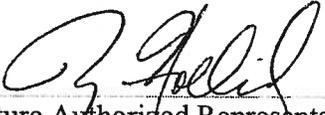
Telephone:  
502-564-3141

Signature Authorized Representative:



Date:  
06/11/10

**ACCOUNTABILITY, TRANSPARENCY, REPORTING, PROCUREMENT AND  
OTHER ASSURANCES AND CERTIFICATIONS**

ACCOUNTABILITY, TRANSPARENCY, REPORTING AND PROCUREMENT ASSURANCES SIGNATURE BLOCK for Race to the Top Assessment Program High School Course Assessment Programs Application Assurances	
Applicant Name and Title: State Consortium on Board Examination Systems	
Authorized Representative (Printed Name): Terry Holliday, Chair Kentucky Commissioner of Education	Telephone: 502-564-3141
 Signature Authorized Representative:	Date: 06/11/10

**PART 1.G. ELIGIBILITY REQUIREMENTS**

**Eligibility Requirement 1:**

<b>Consortium of States (Place an asterisk next to each Governing State.)</b>	
1. Arizona*	2. Connecticut*
3. Kentucky*	4. Maine*
5. New Hampshire*	6. New Mexico*
7. New York*	8. Pennsylvania*
9. Rhode Island*	10. Vermont*
11. Massachusetts*	12. Mississippi*
<p>All members of this Consortium are Governing States. Massachusetts and Mississippi are the 11<sup>th</sup> and 12<sup>th</sup> states to join the Consortium. Only the first 10 states will participate in the full pilot program and associated evaluation.</p>	

**Eligibility Requirement 2:**

<p>Consortium’s proposed Project Management Partner: National Center on Education and the Economy</p> <p>Contact information for proposed Project Management Partner: Betsy Brown Ruzzi, Deputy Director 2000 Pennsylvania Avenue, NW Suite 5300 Washington DC 20006 (202) 379-1800 (202) 293-1560</p> <p><i>Check the box:</i></p> <p><input checked="" type="checkbox"/> The applicant assures that the proposed Project Management Partner is not partnered with other eligible applicants.</p> <p>The Commonwealth of Kentucky Department of Education (KDE) on behalf of the State Consortium on Board Examination Systems engaged in a competitive bid process to obtain the services of a vendor to work with a design team comprised of a consortium of multiple states to develop a grant proposal for a multi-state common assessment for Category B: High School Course Assessments; and to act as the Project Management Partner for the grant. A detailed memorandum can be found in Appendix B that provides an overview of the procurement process used by KDE to obtain these services.</p>
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## **PART 1.H. SELECTION CRITERIA**

### **Category B: High School Course Assessment Programs**

#### **(B)(1) CONSORTIUM GOVERNANCE**

**(a) Vision, Goals, Roles, Key Deliverables and Consistency with Theory of Action.** Our core vision is simple: Rather than create new high school course assessments from scratch, we will take the world's best Board Examination Systems and adapt them for use in a high school design intended to radically improve the academic performance of American high school students. Each of these instructional systems comes with very high quality examinations. We will align them with the Common Core State Standards and adapt them for use in American schools. We will use the same Board Examination Systems, including their examinations, to construct world-class STEM programs. And we will adapt the world's best existing career and technical education systems, including the high quality assessments that come with them, for use in the United States as the basis of a rigorous program of career and technical assessments. Multiple methods of assessment will be used, and the combination of methods will assure our capacity to measure—and encourage the schools to develop—advanced thinking skills, creativity and innovation in our students.

We will offer no fewer than three Board Examination Systems for use in the lower division of high school and no fewer than five Board Examination Systems for use in the upper division. All will include, at a minimum, courses in English, mathematics, science and history. Most will offer courses in the arts as well. The STEM program will offer courses and examinations in all the STEM subjects as well as related interdisciplinary courses. The Career and Technical Program will offer assessments in three occupational groupings, at a high level of rigor.

Our Technical Advisory Committee (TAC), composed of some of the world's leading research scientists, psychometricians and literacy experts (See Appendix C for bios), will use the most advanced methods available anywhere in the world to make sure that all the assessments are fair, reliable and valid. They will supervise a process designed to assure that the pass points for the lower division exams are set to an empirically determined standard of college-readiness. All of the Board Examination Systems will be certified for use in our consortium states using a common and demanding set of criteria.

Most important, we can be sure that these examinations will lead to major improvements in student outcomes because they will be embedded in a system that makes very concrete the standards students have to meet, they will provide instructional materials aligned with the standards and the curriculum, they will offer examinations that are actually derived directly from the standards and curriculum, they supply high quality training for the teachers who will teach the courses and they include external scoring and reporting systems.

**(b) Structure and Operations.**

**(b)(i)** We have formed a new 501(c)(3) not-for-profit organization, the State Consortium on Board Examination Systems (SCOBES), to conduct the work of our consortium. The Bylaws and Articles of Incorporation for SCOBES can be found in Appendix D. SCOBES is incorporated in the District of Columbia. Each state in the Consortium is represented by two members on the Board of Trustees (see Appendix E for members of Board of Trustees). One of them must be the chief state school officer of the state, unless that official cedes that role to another officer of the state. The other must also be a resident of that state, chosen to represent one of the major stakeholders in the elementary and secondary education system, including governors (or their education aides), legislators, the higher education system, state boards of education, superintendents of schools, the business community, teachers and others. The second person from each state must be nominated by the Nominating Committee in consultation with the chief state school officer of that state. The reason for having the Nominating Committee involved in the decision is to assure that the second representatives from each state are collectively reasonably representative of the stakeholder groups.

The Board has a Chair, Vice-Chair, Treasurer and Secretary. All must be elected by the Board on the nomination of the Nominating Committee, which must itself be chosen by the Board. There is an Executive Committee consisting of the Board Chair and four others nominated by the Nominating Committee and approved by the Board. The Board may appoint such other committees as it sees fit.

**(b)(ii)** A state is eligible to join the Consortium (in the role described in the announcement as “Governing Member”) and is entitled to two seats on the Board when the governor, chief state school officer and state board chair all sign an MOU approved by the Board of Trustees of the Consortium (see MOU description below). There is only one category of membership for states.

States wishing to observe the work of the Board may send observers to the Board meetings. Those observers may participate in the meetings to the extent allowed by the Chair, but have no voting rights.

All member states are committed to piloting the program in their states, and, when the pilot phase is over, implementing the program statewide if the evaluation shows a statistically significant gain in student achievement. See more details under the description of the MOU below. Implementing the pilot program includes implementation of at least one set of lower division and one set of upper division Board Examination System courses and examinations by the 2011-2012 school year.

**Summary Table for (B)(1)(b)(ii): States' Roles in the Consortium**

<b>Role Types of Member States</b>	<b>Description of the Rights and Responsibilities Associated with Role</b>	<b>Member States in this Role</b>
<b>Governing Member</b>	<ul style="list-style-type: none"> <li>-Serve on Board of Trustees</li> <li>-Vote on key policy issues</li> <li>-Pilot assessments in high schools during the grant period</li> <li>-Revise regulations or legislation where necessary to allow students who pass the lower division exams to enroll in state open-admission colleges and universities without remediation, as early as the end of their sophomore year</li> <li>-Provide data to evaluator and federal government, as required</li> <li>-Implement whole system, including examinations, statewide, on a finding that the system produces statistically significant increases in student achievement.</li> </ul>	<p>Arizona Connecticut Kentucky New Hampshire New Mexico New York Maine Massachusetts Mississippi Pennsylvania Rhode Island Vermont</p> <p>*Mississippi and Massachusetts are the 11<sup>th</sup> and 12<sup>th</sup> states to join the Consortium. Only the first 10 states to join the Consortium will participate in the full pilot program and the associated evaluation. All other states to join the Consortium are bound by all the other commitments required of member states, but need field only five pilot schools rather than the 10 required of all but the smallest of the first ten states.</p>

Role Types of Member States	Description of the Rights and Responsibilities Associated with Role	Member States in this Role
<b>Procurement Lead</b>	<ul style="list-style-type: none"> <li>-Issue RFQ</li> <li>-Review proposals from potential providers</li> <li>-Manage selection process</li> <li>-Negotiate pricing with assessment providers</li> <li>-Manage approved purchasing list</li> <li>-Participate in certification renewal</li> </ul> NB: Consortium staff and representatives of the member states will participate in all phases of the procurement process as appropriate.	Kentucky

**(b)(iii)** The Board makes its decisions by majority vote, except when at least three members call for a supermajority vote of two-thirds present on a particular issue. The purpose of this provision is to acknowledge that the representatives of the states cannot in all cases make policies on all education matters for their states and must function within the bounds of existing policies in most cases. On the other hand, the Board cannot be in the position of abandoning policies greatly desired by the vast majority if only one or two of the members find those policies objectionable. This policy preserves the principle of majority vote on most matters, while taking advantage of the protections afforded by a supermajority vote, on those matters particularly important to some members.

**(b)(iv)** New states can join any time, provided they comply with the requirements described above. States that are not able to maintain the commitments described in the MOU will be required to leave the Consortium, on a finding to that effect presented by the Project Management Partner to the Board and on a confirming vote by the Board. At the discretion of the Board, a state can be awarded a one-year period to cure a finding that it has not met the MOU criteria. A state that is no longer a member of the organization may attend as an observer, but will no longer have voting rights. A state can leave the Consortium at any time, when the chief state school officer sends a letter to that effect to the chair.

**(b)(v)** The key policies and related definitions have been described elsewhere in this section. Other policies will be developed as needed by the Board of Trustees.

**(b)(vi)** The Consortium’s funds will be managed by the Project Management Partner, under the oversight of the Finance Committee of the Board. See Organizational Chart for SCOBES in Appendix F.

**(c) Memorandum of Understanding.** The MOU must be signed by the key officials of a state applying for membership in the consortium. It signifies that the state is committed, at a minimum, as a condition of joining and remaining in the Consortium, to the following:

If the state is one of the original ten members and is therefore participating in the pilot program and receiving funds from the i3 Program and/or the Race to the Top Assessment Program to support the pilot schools in that state, it commits itself to:

- Identifying at least 10 high schools to participate in the pilot program, four of which are to mainly serve high-need students, all of which taken together reasonably represent the student population of that state (the requirement of 10 high schools will be waived for states with a population below 1.3 million, but no state will be allowed to participate with less than five high schools in the pilot program).
- Adopting policies that have the effect of creating a new high school diploma for students who pass their lower division board examinations and permitting those students, if they wish, to enroll as early as the end of their sophomore year in high school as regular students in the 2-year and 4-year public open admissions postsecondary institutions in that state without having to take remedial courses.
- Subject to applicable law, providing all data related to the pilot program requested by the TAC, the program evaluator and the federal government as a condition of their i3 or Race to the Top Assessment Program grants.
- Making the program available statewide no later than four years after the pilot program has begun, provided that the evaluation of the program has shown that the program produces statistically significant academic gains for students who participate in it.
- Participating with reasonable regularity in the meetings of the Board of Trustees of the Consortium, it being understood that the Board will adopt a policy of no substitutions for members at Board Meetings.

If the state is not one of the original ten members, its pilot schools do not receive any funds under the i3 program or the Race to the Top Assessment Program and it therefore does not have

to identify schools to participate in the evaluation. It must, however, accept all the other obligations just described for the first ten members of the consortium, except that it needs to identify not less than five high schools to pilot the program as designed, all of which taken together reasonably represent the student population of that state.

**(d) Procurement Process.** Kentucky will be the lead state for procurement for the Consortium (See Appendix G for letter from Kentucky). All the other states save for Maine, New Hampshire and Vermont have provisions in their purchasing laws that will permit them to purchase directly from Kentucky's list. Those states that do not have cooperative purchasing laws will be able to use provisions of their state procurement laws that enable them to purchase directly from the state board examination system providers either by conducting their own parallel competitive procurement processes or by conducting a permitted non-competitive procurement process that takes advantage of the competitive process conducted by Kentucky as providing the evidence needed to justify their non-competitive selection. See MOUs in Appendix A for signatures of state procurement officers attesting that they approve of the following purchasing plan:

**Step One:** The Consortium, with assistance from the Project Management Partner and the TAC, will establish criteria for organizations that wish to be certified as providers of Board Examination Systems. Some of these criteria will be mandatory. Others will be preferential.

**Step Two:** Lead State for Procurement, with assistance from the Project Management Partner, issues a Request for Qualifications, based on the Criteria for Board Examination Systems Certification. The Lead State for Procurement, with technical assistance from the Project Management Partner and the consortium states, reviews the proposals for Certification and selects those it will approve as certified providers of Board Examination Systems. **Step Three:**

The Consortium Board of Trustees, assisted by the Project Management Partner, announces to all of the Certified Board Examination System Program Providers that it is looking to provide the member states with Board Examination Systems with certain specific characteristics, but wishes to have a conversation with all of the Certified Providers about those requirements and is interested in talking with them about their own ideas concerning what is desirable and possible in the next round of the evolution of Board Examination Systems. When this round of conversations is done, the Consortium, acting through the Lead State for Procurement, assisted by the Project Management Partner, enters into negotiations with the Certified organizations.

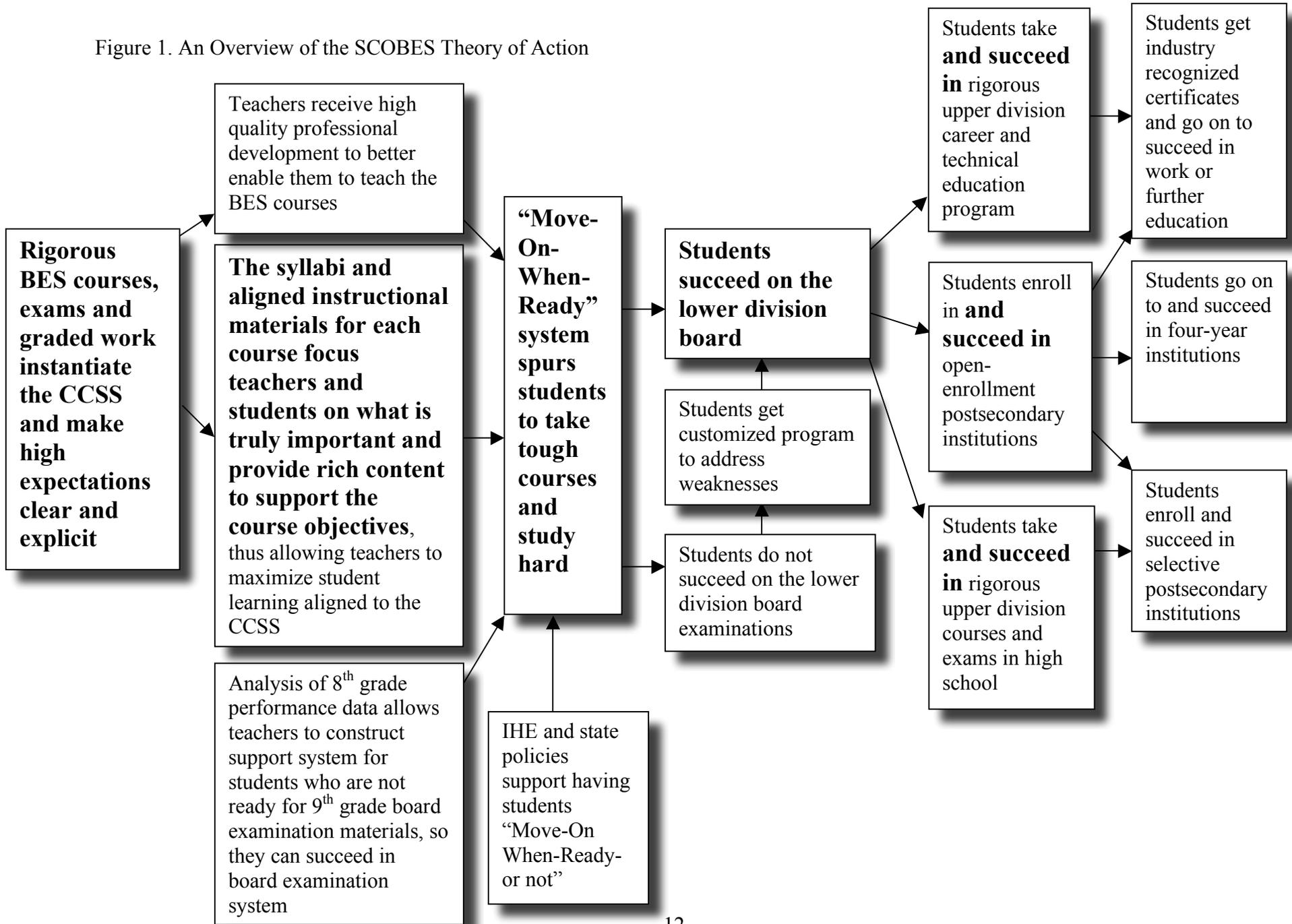
All of the providers could win the right to be on the approved list for purchasing, if all their negotiations are successful, but each Certified Provider will be aware that they must price their products and services competitively if they are to win orders from schools and convince the Consortium's negotiators that the states are getting good value for their investments. The result of this stage of the process is that a particular set of the providers' products and services appear on the approved purchasing list of the Lead State for Procurement at stated prices, and any state and their school districts in the Consortium can purchase those items off that list at stated prices for stated quantities. **Step Four:** Certification will be renewed at regular intervals. The process described in Step 3 will be repeated whenever the Consortium wishes to do so.

## **(B)(2) THEORY OF ACTION**

The figure on the following page presents our Theory of Action in graphic form. The reader will find a step-by-step commentary on the Theory of Action in Appendix H. Below, we respond to the detailed questions asked of us.

**(a) Incorporation into the High School Education System.** We do not believe that the Common Core State Standards and an aligned set of high school assessments will by themselves produce significant improvement in the performance of high school students. They are of little value unless and until these content standards are translated into performance standards, curricula are set in place that are compatible with the standards, instructional materials are developed that align closely to the curricula, tests or examinations are created that match the content standards and the curricula, teachers are taught to teach the new curricula well, and external scoring and reporting systems are put into place.

Figure 1. An Overview of the SCOBES Theory of Action



The world-class instructional programs we will use in our pilot schools already exist and can be used for these purposes. These Board Examination Systems come with high quality course syllabi, fully aligned instructional materials, first class performance-based examinations and high quality training for the teachers who teach these courses. They are being used in virtually all of the world's highest performing countries. Highly regarded researchers say they are a major factor in the superior performance of these nations (see Appendix I for a summary of research on the effect of Board Examination Systems).

But, just as we do not assume that standards and assessments by themselves will get our students ready for college and careers, we do not assume that the availability of world-class instructional systems will by themselves get our students ready for college and careers.

Another reason our high school students are so badly prepared is that, unless they plan to go to selective colleges, they have had no incentives to take challenging courses or to work hard in high school. They are told that all they need to do to get into open admissions colleges is to graduate from high school and all they need to do that is to pass their courses, which, in most cases means getting a D. Students in most other countries, by contrast, cannot go on to the next stage of their education unless they are ready to do so; whether they plan to be carpenters or brain surgeons, this gives them a strong incentive to take tough courses and work hard in school. The positive consequences of Board Examination Systems and their associated qualification systems have been well documented (see Appendix I).

This program addresses the college readiness problem using both strategies employed by the most successful countries. But with a crucially important difference. We will use the lower division exams not to sort students out, but to raise them all to a true college-ready standard. By introducing a consistently strong, integrated and coherent instruction and assessment program and combining it with a performance-and-standards-based alternative to the regular time-based high school diploma for the students who participate in this program, we will produce powerful incentives for many students to take tough courses and study hard in high school. We call this our Move-On-When-Ready system. We believe that this combination of features will, in time, produce the most successful high school students in the world, and an education system that is much more efficient and much better articulated with its higher education counterpart.

We have identified a number of the best Board Examination Systems in the world that are available in English for use in the United States. That work continues, and we will, with the help

of our Project Management Partner, conduct a competitive process to select Board Examination Providers to support this effort. Some of the most respected sources of curriculum and testing worldwide have developed Board Examination Systems including ACT, University of Cambridge International Examinations, The College Entrance Examination Board, the International Baccalaureate Organization and Pearson/Edexcel. Descriptions of the Board Examination Systems produced by these organizations can be found in the section on Assessment Program Design and Development. These examples are divided into those that are appropriate for use in the freshman and sophomore years and those that are appropriate for use in the junior and senior years.

These programs are complete standards- and curriculum-based instructional systems. They address not just basic skills, but also include critical thinking, complex analytical skills, imagination and creativity, and the ability to apply what one knows to unfamiliar, real world problems. They employ a range of assessment techniques to serve both formative and summative assessment purposes. They provide strong instructional support to both teachers and students. They model the kind of instruction that teachers should use if they want their students to perform well on the exams. They are much more valid for assessing higher order skills and knowledge than the typical American large-scale, standardized achievement test and they satisfy test reliability standards in the countries in which they are used all over the world. The syllabi that come with these programs describe what the student is supposed to know and do, in the same way that American-style standards do, but they also publish the prior year exams and examples of the student work that receive high scores, so the standards have a concreteness for students, parents and teachers of a kind that we rarely see in the United States.

The reader might ask why we think it necessary to offer multiple board examination programs at both the upper division and lower division levels. The answer is that, in our judgment, the nation may be ready for national standards and it may be ready for national examinations, but it is not ready for a national curriculum. Indeed, in many of our states, there is real resistance to the idea of a single state curriculum. Our response is to offer real choices to schools, communities and states. As long as an organization can meet our rigorous criteria for Board Examination Systems, it will be available for local choice. No school will be forced to accept a particular curriculum and no students will be forced to participate in the program at all. Choice is fundamental to our design. But so is a common pass point for every participating

school, district and state. The states that sign on to the Consortium agree to this policy, which is designed to insure the integrity of the system.

Our Project Management Partner, the National Center on Education and the Economy (NCEE), is currently doing the research needed to establish the mathematics and English literacy levels students need to achieve to be assured of success in the initial credit-bearing courses in the nation's two-year and four-year open-admissions postsecondary institutions. That information will be used to establish the pass points for the exams. Students who pass their English and mathematics exams and meet their state's requirements in the sciences, history and the arts will be awarded a new college-ready diploma and will be able to leave high school as early as the end of their sophomore year if they wish and enroll in any public open-admissions college in their state without having to take any remedial courses, because they will not need such courses.

Alternatively, the student who passes these exams will be able to stay in high school and take a program in Career and Technical Education or enroll in one of the upper division board exam programs mentioned above, all of which are designed to prepare students for admission into selective colleges. Thus, this program is designed to support all students, from those who now have great difficulty succeeding in community colleges to those who wish to take an AP program or IB program but do not begin those programs with the skills they need to succeed in them.

Students who do not succeed on their first attempt at the lower division examinations will be able to take the exams in subsequent years, as often as they like. The aim is not to use these exams to screen students out, but to make as many students successful as possible. High schools will analyze the sub-scores of students who do not pass their exams to identify the areas in which they are weak and to provide a targeted program, so they succeed when they take the exams again.

Each school will pick at least one lower division and one upper division program from an approved list to implement for volunteer students in the school. The students will be enrolled, the materials will be ordered and the teachers will be trained by the end of the summer of 2011. In the fall of 2011, freshman students will begin their studies in the lower division program their school has picked and juniors will begin their study in the upper division program their school has picked. The first lower division students will complete their program in the spring of 2013. Those who pass their exams at the end of their sophomore year will enter open admissions colleges in the fall of 2013 as freshmen in those colleges, if they choose to do so. Those who

choose to stay in high school will enter an upper division board examination program in the fall of 2013 to prepare for entrance into a selective college or to pursue a technical education program. The new performance-based diplomas to be awarded to students who pass their board examinations will not replace the standard high school diploma, but will represent another path to a diploma.

The students in the program will take a core curriculum in English, mathematics, the sciences, history and the arts. The course grades and performance requirements for students in any given state to receive this new diploma will be set by the state, with the exception that the ELA and mathematics literacy standards that will qualify students to enter an open-enrollment college will be set by the Consortium based on the recommendations of the TAC and will be the same across the entire network of states.

In Section (B)(5) below on Assessment Program Implementation, we explain how we will use instructional modules supplied by the Board Examination System providers to support high-need students who do not arrive at ninth grade ready to do the work required by the Board Examination Systems. In many cases, those needs can be met by help provided during, before and after the regular school day, and students who need that help will still be able to pass their lower division examinations by the end of their sophomore year.

But in those cases in which students are entering the ninth grade a year or more behind across the board, the high school staff will assume that these students will not be ready to start the regular lower division Board Examination System program until their sophomore year, and the faculty will use the modules referred to above to build and deliver a freshman year program designed to get these students ready to begin the regular lower-division Board Examination System program in their sophomore year.

So it will take some students longer to get ready to take the exams than others. But our aim is to get all students ready to take them and to succeed when they do, so they will be college- and career-ready by the end of their senior year.

The course of study identified by the STEM Task Force will be an optional core for students taking the upper division program. That Task Force may also identify certain courses that will be required of lower division students wishing to subsequently enroll in these special upper division STEM programs, in addition to courses required of all lower division students.

The programs of study defined by the Career and Technical Education Task Force will be among the options offered at the upper division level for students who have passed their lower division examinations. That Task Force may also identify certain courses that lower division students might take as electives to help prepare them for their upper division programs or to motivate them to take the related academic courses. The program of study in career and technical education identified by the Task Force on Career and Technical Education will also be suitable for adoption by community colleges, technical colleges, and other 2-year and 4-year open enrollment postsecondary institutions as the basis for 2-year degree programs.

**(b) Demonstration and Maintenance of Program's Rigor.** The rigor of these Board Examination Systems is unchallenged. They actually set the international benchmarks for rigor and they are constantly adjusted to assure that rigor. Good performance on the upper division Board Examination—examples include the Advanced Placement courses, the International Baccalaureate Diploma Program and the University of Cambridge and Pearson/Edexcel A Level programs—is a principal gateway to admission to most of the top universities in the world. And the lower division Board Examination Programs that precede the upper division programs are designed to prepare students to succeed on the upper division exams. No upper division exam that fails to maintain the rigor required to prepare students for the finest universities in the world will long survive in the market, and no lower division exam that fails to prepare students to succeed on the upper division exams will long survive, either. So the rigor of these exams is guaranteed long into the future. The organizations that offer Board Examination Systems that we have had discussions with are all willing to modify them as necessary to reflect the Common Core standards. This applies not just to the English and mathematics standards just released, but to the forthcoming science standards as well.

**(c) Diversity of Course Offerings that Provide a Variety of Pathways to Students.** There are two questions here, one having to do with diversity of course offerings, the other with diversity of pathways. Because we will not be paying for the creation of courses or examinations, we can afford to implement far more courses than would be the case if we were building them from scratch. We will in fact ask the board examination providers to make all required adaptations in their offerings at their own expense, those expenses to be recovered from their charges over the years when they sell their offerings to the schools in our member states. Using this strategy, we will have access to the entire course catalogues of the most admired providers

of courses and examinations in the world, in subject after subject, including subjects in the disciplines as well as interdisciplinary courses.

The second question had to do with variety of pathways. We believe that our design maximizes the pathways available to high school students to an unprecedented degree. The lower division examinations are the gateway to (a) community college transfer programs, (b) an enormous variety of community and technical college career and technical certificate and degree programs, (c) high school upper division Board Examination Systems intended to prepare students for selective colleges, (d) highly rigorous upper division STEM programs leading to highly paid STEM careers, and (e) high school career and technical programs designed to lead to industry-recognized certificates. Once the students pass their lower division exams, the choice among all these alternatives is theirs to make. It will be the end of high school tracking systems.

**(d) Implementation at Scale, Increasing Access For Students to Broadly Improve Student Achievement and College and Career Readiness.** We will pilot this program in 100 schools across ten states. Forty percent of those schools will serve mainly high-need students. Our evaluation will be designed to measure the difference this program makes in achievement and other key outcomes for the students who participate in the program. All the policy levers to expand the program will be in place from the beginning of the pilot to expand the program statewide. As we explain elsewhere in this proposal, after the first three years of implementation in a school, schools and the state actually save money by implementing the program. Some of the savings achieved in the early adopting schools can be plowed into the later adopting schools to create a self-financed expansion, and the information provided by the evaluation should provide the impetus to drive that expansion. Because the evaluation will oversample schools serving mostly high-need students, and because we anticipate that the biggest gains will be for high-needs students, we expect high-need students will benefit greatly as the program is scaled up.

### **(B)(3) COURSE ASSESSMENT PROGRAM DESIGN AND DEVELOPMENT**

In this section, we are asked to describe the assessments we plan to create. But, as the reader now knows, we do not propose to create new assessments, but rather to adapt existing world-class courses and assessments for the purposes described above. There is no purpose to be served by describing these courses and assessments as if they existed only in the mind's eye, when we can be much more concrete. And so what you will find below are responses to the questions that

are asked in this section framed in terms of the characteristics of the kind of courses and assessments we will actually use. As we have said above, when the time comes to do so, we will publish our criteria for certifying Board Examination Systems and we will entertain proposals from any organization that wishes to offer Board Examination Systems that they believe meet those criteria. But here, in the interest of concreteness, we will offer examples culled from some of the best candidates we are aware of.

**(a) Course Selection and Rationale and Course Addition and Updating.** Each Board Examination System will offer a core program covering at least English, mathematics, science, history and the arts at either the lower division level or the upper division level, or both. In concert with educators through the centuries, we take these subjects to constitute the heart of the core curriculum. Others are arguably very important, but these are indispensable by common consensus. In some cases, the program offered will be a diploma program, meaning that the overall core curriculum has already been defined by the provider. In others, it remains to be defined. We describe below one example of each case.

A good example of the former case is the International Baccalaureate Diploma Program. Students in that program must complete an extended essay; take an interdisciplinary course on the Theory of Knowledge, intended to provide intellectual coherence to the whole curriculum by exploring the nature of knowledge across all disciplines; complete a service program; and take courses in Group I (English), Group 2 (second language), Group 3 (individuals and societies), Group 4 (experimental sciences), Group 5 (mathematics and computer science), and Group 6 (the arts). If we look inside Group 3, for example, we find courses in business and management, economics, geography, history, information technology in a global society, philosophy, psychology, and social and cultural anthropology. All of these subjects may be studied at a higher level or a lower level. Students are required to choose one subject from each of the six academic areas, including one from Group 3. They can choose a second from Groups 1-5 instead of a Group 6 subject.

A good example of the second kind of case is the Pearson/Edexcel International General Certificate of Secondary Education Program (IGCSE). Pearson/Edexcel marks all the National Curriculum Assessments in England. It inherits the role of one of oldest examining authorities in the world, the University of London Examinations and Assessment Council, founded in 1836. Its' qualifications are offered in 110 countries around the world.

The IGCSE courses and examinations are based on the English General Certificate of Secondary Education courses and examinations. The upper-range of grades given on these examinations corresponds to the old English “O” levels. The much-admired Singapore curriculum for grades 9 and 10 is based on the English “O” level exams. Courses are offered in English and English literature, Mathematics (2 levels), pure further mathematics, biology, chemistry, physics, dual award science, history, geography, art and design, and many foreign languages. Like the University of Cambridge, Pearson/Edexcel has told us that, if they are certified by SCOBES, they are prepared to modify and adapt their courses and examinations as necessary to meet American requirements.

We will assemble a team of curriculum experts and teachers to review the offerings from each provider selected by our procurement process to examine their courses and examinations, select from them a set of required and elective courses to make a complete core curriculum for the lower division, and specify the adaptations required for their use in Consortium states and schools.

These adaptations will be made at the expense of the providers. That means that neither SCOBES nor the federal government will be required to pay for them. The announcement specifies that new courses and assessments created with federal funds will be in the public domain, but that this provision does not apply to materials already protected by copyright and adapted for use in this program. All of the materials to be used in this program will fall in the latter category. The disadvantage to this approach is that none of these materials will fall into the public domain. The great advantage is that our schools will have available to them far more course materials, assessments and related professional development programs than could ever have been produced from scratch for the \$30 million made available for the High School Course Assessment Program, and those materials will be constantly refreshed at the providers’ expense for years and years to come.

**(b) Measuring Student Knowledge and Skills Against Common College-and-Career Ready Standards.** All of the potential providers we have spoken to about this program, including those listed as examples in this proposal, have assured us that they are prepared, at their expense, to align their offerings with the Common Core State Standards. This is not just a pledge to do a quick identification of common key words and broad topics, nor do we propose to simply take the providers’ word for it that alignment has been achieved. Our TAC has begun to

develop a demanding review process to determine the degree to which each English and mathematics exam is comparable to the Common Core.

But the Common Core State Standards will cover only mathematics and English literacy. We are planning to offer courses across the entire core curriculum and, as well, to focus on the STEM subjects and a rigorous Career and Technical Education curriculum. We need rigorous standards in those arenas as well, and we have them. We will discuss the standards for the lower division programs first. Here again, we will look at the examples of the kinds of programs we have in mind.

The ACT lower division programs are based on extensive research by ACT. The two potential English providers of lower division courses and examinations base their offerings on the English GCSE examinations, the standards for which are set by the Office of the Qualifications and Examinations Regulator, a branch of the British government. As mentioned above, the version of those examinations that we would be using correspond to the old English “O” levels, which are the courses and examinations intended to prepare students for the “A” levels in England, the “gold standard” of British education. The Singapore government chose this standard precisely because they wanted the best in the world for that age level. The huge advantage here is that these standards are constantly being revised by the British government to make sure that they continue to set the world standard. At the same time, we will want to be sure that the standard set is no lower than that set by the Common Core State Standards. In addition to adopting the Common Core State Standards for English language arts and mathematics, we will also adopt the standards for science when they become available.

The standards for the upper division programs are set, in effect, by the leading colleges and universities in the world. Any organization, be it the College Board, ACT, the University of Cambridge, Pearson/Edexcel, or the International Baccalaureate Organization, that fails to produce examinations that are recognized by the best colleges and universities will lose its clientele and will go out of business. They have no choice but to build courses and examinations that set the world standard.

The Task Force being assembled by Arizona State University to lead our STEM work includes Nobel Laureates and other very prominent members of the STEM scholarly community and others closely connected with the nation’s STEM leadership, especially the National Academies. Their involvement is the best assurance that this work will be set to a high standard.

The Task Force charged with creating a rigorous set of Career and Technical Education courses and performance tests (see Appendix J for a list of initial members) will be selecting those courses and examinations from among courses and examinations created under the authority of the British Office of Qualifications and Examinations Regulator. That means that they will by definition meet skill standards set by some of the leading employers in the world under a stringent set of procedures established for that purpose.

**(c) Certifying and Maintaining Rigor of Assessments.** There are two aspects of rigor with which we have been concerned. The first has to do with the level of cognitive challenge found in the courses and assessments. The other has to do with the fidelity of the assessments to the curriculum they are assessing. On the first point, everything said in the last subsection applies here as well. In addition, in the Research and Evaluation section below, we describe what we are doing to set the pass points for our lower division exams to the actual cognitive challenge of the initial credit bearing courses in our nation's open admissions 2-year and 4-year postsecondary institutions. This research and the standard-setting process on which it will be based, is a crucial element in our guarantee of rigor in our program. Our research is on the way to producing a new benchmark in the country's knowledge about the actual requirements of success in our nation's open-admissions postsecondary institutions. Over time, we will regularly update that research, making sure that the standards reflected in our lower division courses and examinations continue to reflect the actual demands of our open-admissions postsecondary institutions as they evolve. And we will continue to require our providers to align with the Common Core State Standards into the future, as they are extended and modified. The British exams will continue to evolve in response to the standards set by Ofqual. ACT will continue to do research to update their offerings, as will the College Board and the International Baccalaureate Organization.

One of the most serious problems in the American standards movement has been the extent to which the tests used in this country have failed to reflect the curriculum experienced by students. In every case, the Board Examination Systems we will use include very rigorous curriculum and the examinations used are derived directly from that curriculum.

**(d) Design and Development Approach for Course Assessments, Including—**  
**(d)(i) Number and Types of Components.** The answer to this question varies by provider. For a comprehensive matrix displaying the characteristics and features of a representative list of Board Examination Systems, please see Appendix K. All of the organizations we have identified offer

some form of formative assessment items for use by teachers in assessing their students' progress in the courses as they progress through the school year. With respect to the final grade for the course, only ACT offers course grades based entirely on computer scored examinations, although even those grades are based in part on long and short constructed responses to prompts in the final examinations.

None of the providers base their grades exclusively on machine scoring of multiple-choice tests. But users of the ACT program can choose machine scoring exclusively, if they wish. The other providers now include few, if any, multiple choice, machine-scored questions in their examinations. In general, the providers offers examinations mainly based on essay-type responses and constructed responses of other sorts (particularly for mathematics), which are typically scored by human beings under conditions described below. However, we will require the providers of the lower division exams to include enough multiple-choice, machine-scored questions to satisfy American reliability requirements, if we find that that is necessary after examining their methods and data. The TAC believes that this can be accomplished without doing major violence to the English preference for essay-type responses, the benefits of which will be discussed in the next subsection.

Almost all of the potential providers construct the final grade for each course from a combination of the grades on the final examinations and grades on assignments contained in the diploma program as a whole (as in the IB requirement for a culminating paper and for community service) or in the syllabi for particular courses. This amounts to a form of performance assessment that is crucial to the whole conception of standards and assessment shared by these instructional system providers. The assessment in the studio art course in the College Board's Advanced Placement program is based on the grade given for a portfolio of studio art produced by the student, for example. Up to half of the grade in a Cambridge technology course might be based on the quality of work displayed in the construction of a robot. Similarly, up to half the grade in a Cambridge history course might be based on the quality of a student's 20-page history research paper.

**(d)(ii) Ensuring Variety of Assessment Items and Items that Elicit Complex Student Demonstrations of Applications of Knowledge And Skills.** In our minds, the answer to this question is an extension of our answer to the last one. When the American approach to testing is compared to the international standard, we appear to value reliability as the path to validity more

than they do, and fidelity to the cognitive demand level and depth of subject matter as the path to validity much less. Those nations with superior performance appear to have established a much better balance between the two. With the use of machine-scored, multiple choice tests, we have the advantage of the computer scoring the same answers the same way every time, and doing so very quickly. But there is wide agreement that the United States pays a big price for this approach. It works very well if the object is testing basic knowledge and skill, but it does not allow us to do a very good job of measuring the capacity for complex analysis, or for synthesizing knowledge from a wide range of domains, or for creating new ideas, or for innovating new approaches to complex problems. The reliability we get from our approach is often spurious, as it is based on the assertion that there is only one right answer to the question being asked, when in fact more than one answer can reasonably be viewed by experts as correct. The only way to find out whether a student in a career and technical education culinary program can cook well is to taste something they have cooked. The only way to find out whether students in our STEM programs can construct a robot designed to accomplish something in response to a particular set of performance requirements is to ask them to write such a program. The only way to find out whether a student can write a competent 20-page history research paper is to ask them to write such a paper. The assessments designed and used by most of the potential providers of Board Examination Systems for our Consortium high school programs heavily favor performance assessments of this sort.

**(d)(iii) Producing Student Achievement Data and Student Growth Data.** All of the potential providers we have looked at produce grades for their courses, and all of the providers of lower division programs produce sub-scores on their examinations aligned with the topics or other major sub-divisions of the curriculum within the courses. Some of the English courses are designed as two-year courses, but the organizations offering those programs have assured us that they can break those two-year courses down into one-year courses and provide examinations and grades for each year. All of the upper division programs provide grades for their courses. They typically provide many courses at regular and advanced levels.

All of these grades and sub-scores are provided to the schools in a form that can be shared with students and parents. The providers all have report forms and systems that permit the users to aggregate up to the school and district level. Thus these systems will allow for reports to be generated for students, their parents, school faculty, districts, states, prospective employers and

college and university admissions officials in forms appropriate for each type of user. This includes the use by high schools of the sub-scores of students who do not pass their lower-division exams to construct a customized program for them addressed to the points on which their exam performance was weak, a key feature of our design.

In addition to the grades produced by the individual Board Examination System providers, the system we are proposing will generate data for every student about their performance relative to the pass points that we will set for the lower division exams. The reader will recall that these pass points will signal whether the student has actually demonstrated the levels of literacy in English and mathematics needed to succeed in the initial credit-bearing courses in the nation's open-admissions postsecondary institutions. These pass points will be comparable across all lower division exams offered in all states. That means that we will have a system for determining the success of every high school in our system with respect to getting their students ready for college or work, against the same measure, throughout the system.

All the data elements needed to operate a universal high school accountability system are therefore built into our assessment system. It will be able to report on college-and-work readiness, by school and by district, taking into account background variables such as the students' socio-economic status, and membership in a variety of protected-status groups. It will be able to report on the proportion of students achieving that status by the grade level at which they achieved that status. It will also be able to report on the success rates of high school students in upper division programs intended to prepare students for entrance into selective colleges, in STEM programs, and in Career and Technical Education programs intended to result in issuance of industry-recognized certificates of competence.

Because the system we have in mind will, at least at first, be voluntary for the students, it could not be used as the basis of a universal accountability system, because not all students would be covered by it. But, when most students have voluntarily enrolled in it, many states may choose to require student participation in the system, at which point it could be used as the basis of a universal accountability program.

We have given a lot of thought to the government's request that we consider how our system can be used to produce student growth data that can be used to make judgments about how much value individual teachers and principals add to the education of the students for whom they are responsible.

Growth reporting, by definition, requires a pre-measure of performance and a post-measure of performance that are both basically measuring the same learning domain. Our system is replete with usable post-measures. The challenge is to produce pre-measures which, when combined with the post-measures, can be used to calculate student growth in ways that are valid for the purposes for which they will be used.

At the outset we think it best to concentrate on mathematics and English at the lower division level, where we believe we have a good chance of coming up with pre-measures that might work for this purpose as in each subject there is the potential of learning progressing in a plausible continuous trajectory from year-to-year. This same sort of logical progression is much less certain in history, the sciences and the arts.

So it is at least possible that courses in mathematics and English will build on one another in a way that would plausibly permit the grade earned at the end of the preceding course in the sequence to be used as the pre-measure for the following course. This is especially true if the courses in these two subject areas are all set to the Common Core State Standards. Since we have pledged to set our lower division courses and examinations to the Common Core State Standards and the other consortia are also doing so for the lower grades, we can anticipate that it is likely that there will be close correspondence between what is measured by those tests at the end of the 8<sup>th</sup> grade and the curriculum the students will be studying at the beginning of the 9<sup>th</sup> grade in our states. The problem here is that assessments for mathematics and English language arts will be available only when the state consortia to be funded for that purpose by the Race to the Top Assessment Program produce them, which will not happen for several years.

The potential English providers of our lower division courses and examinations also supply examinations for the 8<sup>th</sup> grade in the relevant subjects. And the ACT and the College Board supply tests of general knowledge for the end of 8<sup>th</sup> grade designed to predict high school performance. But it seems impractical, especially in the current economic environment, to require our high schools to spend the sums that would be required to administer and score these measures.

Interim tests could also be used to produce a pre-score, but this strategy is likely to be contaminated by the coursework that precedes the use of the interim assessment.

The only remaining alternative that appears to be available is to rely for pre-test data on the grades that incoming high school students have received on their 8<sup>th</sup> grade state accountability

tests in mathematics and English, until the new assessments produced by the consortia just now forming become available. Of course, the current tests vary enormously in quality and content, and most are set to a standard far lower than the standard to which the beginning of our courses will be set. They are therefore very thin reeds on which to base a growth measure.

Methodologically, another approach is possible, however. We could try to identify a set of variables on which data could be collected that might enable us to systematically and reliably predict student performance in the ninth grade in our programs and in subsequent grades. Such data might include such things as student performance on whatever measures are available in the 7<sup>th</sup> and 8<sup>th</sup> grades in English and mathematics, socio-economic status, expenditure levels and so on. If this can be done, then classroom scores that vary from those that are predicted in this way can be assumed to vary as a result of the activities of the teacher.

Our TAC will define a set of variables that could be the basis for such a statistical procedure, will develop a set of plausible regression models to which the data can be fit and then use the data and the models to see if we can, over the period of the grant, use these models and the associated data to predict end-of-course scores of the students in our programs with reasonable precision. Since growth modeling and value-added interpretations are complex and controversial, the TAC will advise us as to the best and most defensible procedures based on the available research literature. As an example, multivariate regression analysis might be used to predict end-of-course scores for students in our programs, which might then be subtracted from actual scores to obtain a set of residuals. The residuals could be aggregated at the level of teachers and schools. The resulting teacher and school values would reflect actual student achievement relative to (that is, controlling for) the achievement level expected on the basis of prior performance, taking background variables into account. With increasing program size and improved alignment between pretests and end-of-course tests, the data should support application and testing of a range of more sophisticated models, evaluations of their sensitivity, and recommendations regarding valid interpretive uses.

**(d)(iv) Ensuring Scalable, Accurate and Consistent Scoring of Assessments, and Teachers Involvement in Scoring.** All of the organizations that are candidate providers of Board Examination Systems employ sophisticated methods (and large staffs of test and measurement professionals) for ensuring scalable, accurate and consistent scoring of their assessments. Several are themselves or are closely associated with the most admired

organizations in the world in test and measurement science. There is simply not space here to describe in any detail the variety of methods and procedures they use to approach the technical challenges associated with this kind of work. Nonetheless, our TAC will gather a great deal of data from all of the prospective providers to make sure that the methods they use for ensuring scalable, accurate and consistent scoring meet the highest professional standards here in the United States and elsewhere in the world.

All of these organizations train teachers whom they involve deeply in the scoring of their assessments. Because little of the scoring is done by computers, it must be done by humans. In every case, the preference of these organizations is to recruit classroom teachers who have experience with their curriculum and exams to do their scoring. All of them train the teachers who will do this work. That training typically lasts two days or more. Once scoring begins, these organizations use technology to monitor the scores given by each teacher-scorer. Those whose scores are found to be unreliable are dismissed and their work rescored. Outstanding teacher-scorers are invited back year after year. The most effective and reliable scorers are promoted to supervise others. Those who rise up through this system are often put in charge of teacher training worldwide, because they have the best understanding of the curriculum and exams.

**(d)(v) Accessibility for Broadest Range of Students, Including English Learners and Students With Disabilities, Including Appropriate Accommodations.** All of the providers we have identified address this set of issues. All provide a wide range of accommodations for which they have evidence that the fidelity of the intended construct is being maintained. Below, we summarize the requested information for three of the candidate providers. More information can be found in Appendix L.

Cambridge International Examinations offers two English language courses for non-native speakers, one in which the oral component counts toward the final grade and one in which it does not. A passing grade on these exams is recognized by almost all UK universities and those in many other countries as evidence of English proficiency for undergraduate study. Cambridge makes arrangements to allow students with substantial and long-term disabilities to take their examinations and demonstrate their achievement. Among those accommodations are an extra time allowance, provision of specially adapted exams, and assistance with reading and writing,

Among the accommodations provided by the College Board's Advanced Placement Program are large print, the provision of a reader, fewer items on a page, colored paper, use of a

highlighter, orally presented instructions, auditory magnification, Braille, Braille graphs, Braille device for written responses, tape recorder, large block answer sheets, frequent breaks, extended time, small group settings, private rooms, screens to block out distractions, and special lighting and acoustics.

Edexcel offers ELL students an English as a second language course, with an optional speaking test. For students with disabilities, they offer modified assessment materials (including modified print), assistance during the assessment (including a scribe, reader, a practical assistant or sign interpreter), changes to the physical testing environment, the provision of assistive technology (including mechanical and electronic aids such as computer software that scans but does not encode or interpret examination question papers), alternative ways of presenting responses (such as a word processor), and allowing extra time for an examination or for completion of course work.

#### **(B)(4) RESEARCH AND EVALUATION**

**(a) Research Plan.** The research plan is focused on three central objectives: assuring that the assessments meet prevailing professional standards for fairness, reliability and validity; determining that each exam system is compatible with the Common Core State Standards and roughly comparable one with the others; and establishing a defensible and empirically supported set of performance criteria for college readiness in mathematics and English literacy, and then setting cut scores for each examination using these criteria. This work will be overseen by a TAC composed of some of the most distinguished psychometricians, cognitive scientists and literacy experts in the world. It is chaired by Howard Everson of CUNY and Jim Pellegrino of the University of Illinois at Chicago. They are joined by Lloyd Bond of Carnegie Foundation for the Advancement of Teaching, Phil Daro of America's Choice, Richard Duran of the University of California-Santa Barbara, Ed Haertel of Stanford, Joan Herman of CRESST, Bob Linn of the University of Colorado, Catherine Snow of Harvard and Dylan Wiliam of the University of London (see biographical sketches in Appendix C).

*Assuring that all of the assessments meet prevailing professional standards for fairness, reliability and validity.* The most promising exam systems under consideration have emerged from different measurement traditions. The English have long had students write papers, what we would call essays, that are designed to emphasize a deep grasp of the subject matter and the

ability to apply it to unfamiliar situations. While their current tests often include some short answer items, in most subjects more weight is placed on students' essays when final scores are computed. Their examinations are highly dependent on human scoring and consequently they face reliability challenges that are addressed by instituting a host of procedures designed to ensure uniformity in awarding marks. All of this adds to the cost of administration, but they are willing to incur these costs to make sure that they are able to assess the kind of higher order thinking skills that matter most in a high wage country engaged in global competition.

K-12 testing in the United States has taken a very different path. When the American testing system in its current form was being developed, every district and school, indeed, to a remarkable extent, every teacher, developed their own courses (syllabi) and curriculum. So it was thought that the fairest sort of test would be one that was "curriculum neutral" that is, one that was insensitive to any particular curriculum. The practical effect was that teachers came to learn that these tests did not test what they thought was important to teach, and they came to detest such testing systems. Overall, as the American system became dominated by multiple-choice, computer scored tests, this country focused largely on assuring that its tests played to the strength of this testing methodology, demonstrating its devotion to validity through a strong commitment to reliability, coverage and comparability of scores as the first priority. As a result, more often than the US testing community would like to admit, students are reduced to trying to figure out which reasonable answer is the one the writer of the test had in mind.

Our aim is to take account of the strengths and weaknesses of the American and European systems in making a determination of the extent to which the lower division providers' Board Examination Systems are fair, reliable and valid. The process of making that determination begins with the collection of the relevant materials. The NCEE staff will gather basic descriptive, technical and performance information and data on the 9<sup>th</sup> and 10<sup>th</sup> grade English and mathematics examinations and syllabi offered by the qualified providers. This will include the following:

- Exam blueprints, instruments, rubrics, work samples and syllabi that will serve to reveal the content constructs and cognitive demand.
- Psychometric properties of the provider's examinations – including predictive validity studies, reliability evidence, results of test bias studies, and year-to-year score comparability studies.

- Development and operations of the provider systems – including scoring and grading standards, the reporting of results to students, teachers and colleges, and the moderation processes for incorporating course work into the grading process. In addition we will study: how test scores are combined into a grade classification; how test items are weighed; and the current distributions of scores on each exam, including performance of key subgroups.

NCEE has engaged a team from the National Center for the Improvement of Educational Assessment led by Scott Marion to conduct this critical task as part of the process of certifying Board Examination System providers. Marion will report his findings to the TAC, which will then decide whether the Board’s standards for fairness, reliability and validity of the lower division systems have been met.

*Determining that each of the lower division Board Examination Systems are compatible with the new Common Core State Standards and comparable each with the others.* The Board is committed to ensuring that each of the examination systems meets the Common Core State Standards in order for the states to have full confidence that students in Board Examination courses will be expected to attain these college-ready requirements. And to the extent they do not, the system providers with whom we have had preliminary discussions have committed to refining their syllabi and exams to bring them into conformance.

The TAC will advise NCEE on how best to design a careful and thorough comparison of each system with the new Common Core State Standards. This will include comparisons of the content and the cognitive demand of each system with the standards, including the syllabi and associated assessments. Two well-regarded methods for making such comparisons have been developed in the US in recent years, one by Norman Webb of the University of Wisconsin and the other by Andrew Porter of the University of Pennsylvania. However, for almost 200 years England’s leading universities have been comparing the curricula, exams and scoring systems they developed to help secondary schools prepare students for entry into their institutions and to assess their suitability for admission. Our initial reading suggests that those methods incorporate the virtues of the methods developed by Webb and Porter and may well go beyond them. This being so, the TAC will give a high priority to a close study of England’s approaches to the study of comparability and the application of those methods to the work at hand. To assist in this task,

the TAC has engaged Mike Cresswell, the recently retired director general of AQA, one of the three major awarding bodies of high school qualifications in England.

It should also be noted that a precursor to conducting several of the remaining technical studies specified below is the assurance that there exists some rough measure of comparability among the several lower division systems in both English and mathematics. To ascertain whether or not this is in fact the case, the TAC will conduct a comprehensive and integrated set of comparability analyses that will focus on the correspondence of each exam with its counterparts as well as each separately with the Common Core.

*Establishing a defensible and empirically supported set of performance criteria for college readiness in mathematics and English literacy, and then setting cut scores for each examination relative to these criteria.* What typically occurs in the US when an effort is made to set college ready criteria is that a group of subject-matter experts is brought together to pour over test specifications and student performances on the test and then they are asked to exercise their best judgment in deciding what level of student performance might suggest that a student would be successful in college. While this judgmental approach draws heavily on college faculty who teach these introductory courses (who are sometimes joined by high school teachers of the same subjects), it is deeply flawed. College and high school faculty often have quite different notions about what is required for a student to be well prepared to succeed in college. College teachers often set the standard at an “aspirational” level rather than what is actually necessary to succeed in their classes. And college teachers at less prestigious institutions, when sitting in the same room with colleagues from more prestigious institutions, often fail to admit that their standards are different from those of their colleagues.

Work in this arena also typically includes conducting statistical analyses that examine the relationship between high school performance, a host of contextual variables and college performance, such as course grades or GPA. While such predictive studies have the potential to elicit useful information, they also suffer from the key weakness of failing to identify the specific competencies that must be developed to assure college success.

And, lastly, it is patently obvious that being ready to succeed in Harvard or Stanford entails a different level of preparation than is required for success in the local community or technical college. But none of the efforts to determine college-readiness that we know of have distinguished among the various kinds of colleges for which one might be declared ready. Given

the design of our program, what is essential is to determine as accurately as possible what level of English and mathematical literacy is needed to succeed in the initial credit-bearing courses in the nation's 2-year and 4-year community colleges.

Doing that clearly entails an empirical examination of the content and cognitive demands of introductory courses in open-admissions colleges, something that, to our surprise, has never been done before. That means looking carefully and in detail at what math topics are actually taught in the initial credit bearing courses in degree programs typically offered in 2-year and 4-year colleges, the cognitive challenge associated with the textbooks typically used in those programs and the level of writing and mathematics that the teachers of those courses expect of their students. Once that is known, one would ask accomplished teachers and scholars what a student would have to know and be able to do on leaving high school in order to have a high likelihood of success in those initial credit-bearing courses. While this approach is not an airtight solution to this challenge, it has seemed much more promising than any of the other approaches that have been tried thus far. As you will see, though we intend to gather and to analyze a wide variety of relevant information, the strategy just described lies at the heart of our approach.

The research plan will therefore move through the following steps:

- *Investigate the Availability and Utility of Various Data Sets/Sources to Support the Development of College Ready Standards in English and Mathematics*
- *Conduct Analyses of the Relationship Between High School Performance and Initial College Success* - the Project Management Partner will commission a series of studies that might include: having first year community college students who have not had to take any remedial courses take the lower division Board examinations; and comparing the performance of IGCSE students (who immediately enroll in college) on their Cambridge or Edexcel examinations with their initial performance in college.
- *Understand the Nature and Functioning of the Most Widely Used Placement Tests* - Given the assumption that college placement tests are grounded in the competencies necessary for success in college, they have the potential to serve as guideposts in setting the cut scores for the *Move-On-When-Ready* policy even as we understand that the ways in which they are currently employed are highly varied and often use cut scores that are set in ways that reflect overtly political or economic goals.

- *Continue and Expand the Project Management Partner's Initial Work on English and Quantitative Literacy Requirements of Initial Credit-bearing Courses* - NCEE staff has been surveying all of the open enrollment colleges in ten of the initial Consortium states to determine the content and character of the curriculum in these courses. In each, school data have been collected on the initial math courses required in eight of the most heavily enrolled programs (e.g., business, nursing, early childhood education, IT). NCEE is analyzing these courses to determine which math topics are taught in each of them and the level of cognitive challenge associated with each. NCEE is also asking college faculty in these majors to identify the key textbooks they use for these courses and we are using several different tools to judge their cognitive challenge levels. Finally, NCEE is gathering graded papers from these classes to determine the expectations that teachers of these programs have for student writing. Once this process of cataloging the actual literacy requirements has been completed, a panel of teachers and scholars will be brought together to carefully assess the evidence and tell us what high school students will have to know and be able to do to succeed in the kinds of courses that we will have researched.
- *Develop a Methodology to Join these Disparate Kinds of Evidence to Create Cut Scores in English and Mathematics for the Move-On-When-Ready Policy* - In order to determine where on the English literacy and mathematics common reporting scales the *Move-On-When-Ready* cut scores should be set, the TAC will develop a process for weighing the varied evidence we will have developed. Each set of evidence will likely suggest a range of acceptable performance, which when laid one on top of the other should begin to suggest a set of narrowing boundary conditions. We will give the greatest weight to the findings with the strongest empirical support. This process will be repeated for each examination system to ensure the most appropriate fit with each examination scale. In this way whatever variations exist in the frameworks and scoring paradigms from system to system will not distort the setting of college ready performance levels. While this is not the standard approach for setting high stakes performance requirements, it is a much richer approach given the breadth, depth and diversity of measures that can be brought together, each adding to the legitimacy and credibility of the others. This approach is

similar to the National Assessment Governing Board’s current approach to judging the capacity of 12<sup>th</sup> grade NAEP to serve as a predictor of college readiness.

**(b) Evaluation Plan.** The University of Michigan’s Institute for Social Research (ISR) will conduct the independent evaluation for this grant. ISR’s team will be headed by Brian Rowan (PI) and include personnel with extensive experience conducting school-based research. Evaluation activities will occur over the *entire* period of the grant. As discussed below, we are submitting two evaluation budgets: (1) a “base plan” that assumes the Consortium does not receive an i3 award and requests \$4M for the evaluation; and (2) an “expanded plan” that assumes the Consortium does receive an i3 award and has a \$5.25m budget plan.

*Research Questions.* Both evaluations will be guided by a “logic model” that assumes that Board Examination System designs (i.e., curricula, materials, professional development), as well as NCEE, SEA, and LEA supports for implementation, affect program implementation success, where implementation success is defined by: (a) student enrollment in Board courses (including the STEM and CTE options); (b) the quality and rigor of instruction in Board courses; (c) the matriculation of enrolled students through Board curricula; and (d) passage of Board exams. The model further assumes that students enrolled in a well-implemented Board Exam program will experience reduced risk of dropping out of high school, increased odds of postsecondary enrollment, and higher scores on college entrance exams. Finally, the logic model assumes that both implementation success and final student outcomes are affected by school and community contexts.

This leads to the following research questions for the evaluation. **(RQ1) Support for Implementation:** What specific supports for program implementation are provided to schools by each Board Exam program, by NCEE, by SEAs and LEAs, and by community settings (e.g., urbanicity, labor markets, and local higher education institutions)? **(RQ2) Patterns of Program Implementation:** To what extent are Board Exam systems being implemented successfully (as defined above) in participating schools? And, does implementation success vary across Board examination systems, across SEAs and LEAs, or as a result of NCEE support activities? **(RQ3) Program Effectiveness:** How do final student outcomes (as defined above) compare across schools implementing and not implementing a Board exam system? Do program effects differ

by gender, socio-economic status, and prior achievement of students? Do they vary across states, different kinds of communities, or the Board Exam systems being implemented?

*Implementation Analysis.* In both evaluation plans, ISR will study patterns of implementation support and success in all schools adopting Board Exam systems. This will include analyzing data on school funding, staffing, enrollment, student composition, student achievement on state tests, and other data in state administrative databases. Each year NCEE will provide ISR with data on the number of students at each school enrolled in Board programs, course enrollments for these students, grades and BES scores. In the third operational year data on course enrollments and grades will also be collected on program students that have chosen to attend a postsecondary institution. Using these data, ISR's base evaluation plan will: (1) characterize all implementing sites in terms of implementation success, including the experience of college-going students in the final year of the pilot; (2) use quantitative analyses to determine if school and community characteristics predict implementation success; (3) identify the 10 highest- and 10 lowest-performing sites; and (4) conduct special studies of the characteristics of these sites using qualitative data from focus group interviews with NCEE facilitators and state education agency personnel, and telephone interviews with principals in these schools. The goal of this work is to understand how state education policies, implementation supports, community factors, student motivations, and administrative processes affect implementation outcomes in high and low implementing schools. In the expanded budget, ISR also will conduct additional analyses to identify the 2 highest performing STEM sites and the 2 highest performing CTE sites, with the same goal of trying to understand what accounts for successful implementation of these programs. The results of all these analyses will be reported twice annually for quality control and improvement.

*Program Effectiveness Analysis.* The base and enhanced evaluation plans also include a rigorous efficacy trial that will be designed to compare instruction and student outcomes across 30 treatment schools and 30 matched control schools (spread across the 10 Consortium states). In states where more schools are interested in joining the Board Exam pilot than resources permit, schools will be randomly assigned to treatment and control after matching on pre-treatment measures of school demographics and prior achievement. In states where only 10-12 schools want to join the pilot, matched random assignment will not be possible due to small numbers of potential treatment schools. So, in these states, the samples of treatment schools will

be matched to “comparison” schools using “nearest neighbor” matching on student demographics and prior achievement. In both the base and enhanced budget, efforts will be made to construct a sample in which about 40% of treatment and control schools serve higher poverty student populations.

Data collection for both the base and enhanced evaluations will occur in years 2-4 of the grant and focus on both lower and upper division students who begin the study period as either freshman or juniors. Importantly, although the unit of treatment in the efficacy trial is schools, in both treatment and control schools, we also will study samples of students who are carefully matched in terms of prior achievement, race/ethnicity, gender, and free lunch status. This student sampling allows us to make controlled comparisons among students who did and did not enroll in a Board Examination program (within treatment schools and across treatment and control schools). Using this strategy, we can make strong causal inferences about treatment effects under conditions discussed by Lu and Rosenbaum (2004) and Stuart and Rubin (2008). In the design, sample weights for students are used to achieve unbiased estimates of school-level means for use in school-level outcome comparisons. The difference between the base and enhanced studies is that in the enhanced studies, we will be able to afford a larger student sample size, which provides more statistical power to tease out the special experiences of students enrolled in the STEM and CTE options.

In both the base and enhanced studies, we will conduct parallel data collections in treatment and control schools, collecting four kinds of data over the course of the study: (1) Surveys will be administered to sampled students in Fall of their freshman/junior year and again near the end of their sophomore/senior year. The surveys will ask about students’ academic motivations, course/program enrollment decisions, and academic plans (using items drawn from NCES longitudinal studies). 2) Also, in the spring of year 2 of program implementation, we will survey samples of Board and non-Board Examination teachers of English, math and science, asking about professional development experiences and teaching practices (using items from teacher surveys included on PISA, TIMSS, and CCSR surveys). (3) At the beginning of the lower division students’ junior year and the upper division students’ first post-secondary year, we will locate students (no matter where they are located) and ascertain their program enrollment status in high school (Board system or not), and if in high school, their course enrollments. If not in high schools, we will ascertain if they are engaged in a postsecondary education program

(community college, 4-year institution), and if in postsecondary, their course enrollments. If not enrolled in any schooling, we will ascertain if students are employed or unemployed (and if employed, their occupation). (4) Finally, for all students in the samples, we will provide incentives for the current juniors to take the PSAT (regardless of enrollment status and location), and we will collect SAT or ACT scores for all post graduate students who took either test.

These data will be analyzed in two ways. First, school-level analyses will compare instructional practices and student outcomes across treatment and control schools. Using the program Optimal Design<sup>®</sup> (version 2.0), we estimate that this design has a power of .80 to detect an effect of  $\delta = .30$  on both teaching practices (e.g., “rigor of instruction”) and student performance on PSAT/SAT/ACT scores under the reasonable assumption that 15% of variance in these outcomes lies among schools. The design also provides power of .75 to detect differences in student drop out or enrollment statuses of as little as 5 percentage points. Although these school-level results are informative as “intent to treat” estimates of program effects, only a sub-sample of students in any treatment school will actually enroll in a Board program. Therefore, we also will conduct an analysis of the effects of “treatment on treated” at the student level using procedures discussed by Lu and Rosenbaum (2004) and Stuart and Rubin (2008). Here, the matching of student samples in treatment and control schools allows comparison of outcomes across students enrolled in a Board Exam program with outcomes for very similar students who were not enrolled in the program (both inside of treatment schools and across treatment and control schools). These analyses have strong statistical power (approaching 1.0) to detect treatment effects as small as  $\delta = .10$  for test scores and enrollment outcomes. Because the base study has a smaller sample, it can focus only on the outcomes of students in or not in Board Examination programs. With the larger sample of the enhanced study, we can also estimate effects for STEM and CTE program participation. A technical report of this efficacy trial will be issued in year 4, and research publications in year 5 of the grant assuming both an i3 grant and a RttT grant are awarded. If only a RttT award is made, all the publications will be completed by the close of the final grant year. These will be disseminated to study participants and to the education community broadly.

## **(B)(5) COURSE ASSESSMENT PROGRAM IMPLEMENTATION**

**(a) Promoting Participation.** The plan for supporting implementation of the proposed assessment program comes in two stages. The first stage is the plan for implementing the pilot program in 100 high schools in ten states. That is the pilot stage. The second stage is the stage at which the program goes statewide in the states in which the pilot took place, and then goes statewide in the other states that join our Consortium over the next several years. That is the operational stage.

*Pilot Stage:* Implementation during the pilot stage involves: 1) getting districts and high schools to agree to demonstrate the use of the Board Examination Systems and assessments in their high schools (See Appendix M for a chart of 80 LEAs supporting this project at the time of submission and their accompanying letters of support), 2) persuading parents and students to sign up for the program, 3) persuading the public 2-year and 4-year open admissions postsecondary education institutions to accept the pass scores recommended by the TAC and approved by the Board of Trustees of SCOBES for admission to their institutions without requiring them to take remedial courses, and 4) where necessary, making the promised changes in diploma requirements to enable the state to award a performance-based diploma to students who pass their lower division board examinations at the end of their sophomore year.

Taken together, these challenges require us to build a strong, broad base of support for the program in every participating state. Our Project Management Partner has already been meeting with a wide range of stakeholders in the states for that purpose, explaining the aims of the program, answering questions and building support for the work. These meetings will continue.

The next step, already underway, is for each chief state school officer to recruit key district personnel to statewide meetings so they in turn will solicit schools for the pilot program. To support this effort we will create materials describing the program that can be shared with districts and schools that have expressed interest in joining the pilot. These materials will be supplemented by materials from the Board Examination System providers.

No student will be required to participate in the program, but schools will have an incentive to participate, in the form of a subsidy provided by the program for the purchase of the materials and services needed from the Board Examination System providers.

On a related front we have formed a Higher Education Task Force to work with the TAC to make sure that the pass points set for the lower division examinations are acceptable to the higher education community. The Task Force will also work with their higher education

colleagues in their states to gain their active support for the program. The names of the members of the Higher Education Task Force can be found in Appendix N.

One state, Arizona, has just enacted legislation creating a new high school diploma meeting the criteria we stipulated for our program (the Grand Canyon Diploma). The state boards of education of two other states, New York and Pennsylvania, may have authority to issue the necessary diplomas, under the banner of the Keystone Diplomas in Pennsylvania and the Regents in New York. All states in the Consortium are committed to getting the necessary authority over the next year, if they do not already have it.

We stated above that 100 schools in ten states will participate in the pilot stage. That number assumes that we are successful in our application for an i3 grant. The i3 grant is intended to provide for the participation of 40 high schools serving high-need students. In the event that we are not awarded that grant, the funds from this grant will be distributed among 4 schools in each state, for a total of 40 high schools. That number of schools will still be sufficient to conduct the research and evaluation proposed here.

*Operational Stage:* The evaluation report will provide the information the states will need to make an informed decision as to whether to expand the program statewide. Our work with a wide variety of stakeholders in the pilot states will have enabled us to lay the base for the policy decision to expand the program so that all students have access to it.

We expect no loss in quality of implementation as we scale up. This is because the Board Examination System providers we will select are organizations with a global footprint, delivering courses, examinations, teacher training and scoring systems all over the world. The quality of the products and services will not suffer as we scale up. The same can be said of the rigor of the courses and exams. Nor will the standards suffer, because the pass points on the lower division exams will be based on the recommendations of our TAC and will be the same for all states.

Throughout and following the pilot stage, we will disseminate information about the program to professional educators, policy makers and the public by every means available as well as maintaining a rich presentation of our program as it is unfolding on the SCOBES website. Our aim will be to support statewide implementation in as many other states as possible. We will develop a comprehensive press strategy for this purpose, supplemented by presentations at the national meetings of all the major governance and education bodies and associations, and articles in the professional journals and presentations at meetings of the relevant professional

organizations. Throughout the pilot phase, we will be inviting states to join the SCOBES and, as members to begin piloting the program in their states before the pilot phase is over.

The Summary tables that follow provide a conservative set of estimates of how the program will grow over five school years beginning with 2013-14 as requested. After a planning year in 2010-11, implementation of Board Examination Systems will begin in Fall 2011 in the 9<sup>th</sup> and 11<sup>th</sup> grades in a minimum of ten demonstration schools in each state. Courses and examinations in grades 10 and 12 would be added in the 2012-13 school year. This level of participation will continue through the 2013-14 school year after which, with positive evaluation results, we would expect the number of participating schools in each of our ten initial states to grow at a rate of 50% each year. While we expect additional states to join the Consortium over this period, the rate at which this will occur and its effect on the number of students and schools participating is not reflected in these tables.

We expect that in each participating state a full suite of courses (English, mathematics, the sciences, history and the arts) will be operating from the outset, and that a set of career and technical education courses will come on-line in 2012-13. In each school we assume that, on average, 30 percent of 9<sup>th</sup> and 11<sup>th</sup> graders will enroll in the initial year a school begins offering one or more Board Examination Systems and that the rate of participation will increase by five percent in each succeeding year. The number of students projected to be taking exams each year is adjusted downward by our estimate of the number of students leaving after their sophomore or junior year for open enrollment colleges.

**Summary Table for (B)(5)(a)(i): High Schools Using**

State in Consortium	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
	#	%	#	%	#	%	#	%	#	%
Arizona	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%
Connecticut	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
Kentucky	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
Maine	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
New Hampshire	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%
New Mexico	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
New York	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
Pennsylvania	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
Rhode Island	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%
Vermont	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%

**Summary Table for (B)(5)(a)(ii): High School Course Assessments in Use**

State in Consortium	Course Assessments	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
		#	%	#	%	#	%	#	%	#	%
Arizona	English	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%

State in Consortium	Course Assessments	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
		#	%	#	%	#	%	#	%	#	%
	Grades 9-12										
	Mathematics Grades 9-12	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%
	The Sciences Grades 9-12	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%
	History Grades 9-12	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%
	The Arts Grades 9-12	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%
	CTE Grades 11-12	10	1.5%	15	2.2%	23	3.4%	35	5.2%	53	7.9%
Connecticut	English Grades 9-12	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
	Mathematics Grades 9-12	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
	The Sciences Grades 9-12	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
	History Grades 9-12	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
	The Arts Grades 9-12	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
	CTE Grades 11-12	10	3.8%	15	5.7%	23	8.8%	35	13.4%	53	20.3%
Kentucky	English Grades 9-12	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
	Mathematics Grades 9-12	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
	The Sciences Grades 9-12	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
	History Grades 9-12	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
	The Arts Grades 9-12	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
	CTE Grades 11-12	10	2.2%	15	3.2%	23	4.9%	35	7.5%	53	11.4%
Maine	English Grades 9-12	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
	Mathematics Grades 9-12	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
	The Sciences Grades 9-12	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
	History Grades 9-12	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
	The Arts Grades 9-12	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
	CTE Grades 11-12	10	6.5%	15	9.8%	23	15.0%	35	22.9%	53	34.6%
New Hampshire	English Grades 9-12	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%
	Mathematics Grades 9-12	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%
	The Sciences	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%

State in Consortium	Course Assessments	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
		#	%	#	%	#	%	#	%	#	%
	Grades 9-12										
	History Grades 9-12	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%
	The Arts Grades 9-12	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%
	CTE Grades 11-12	10	9.4%	15	14.2%	23	21.7%	35	33.0%	53	50.0%
New Mexico	English Grades 9-12	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
	Mathematics Grades 9-12	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
	The Sciences Grades 9-12	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
	History Grades 9-12	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
	The Arts Grades 9-12	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
	CTE Grades 11-12	10	4.3%	15	6.5%	23	10.0%	35	15.2%	53	23.0%
New York	English Grades 9-12	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
	Mathematics Grades 9-12	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
	The Sciences Grades 9-12	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
	History Grades 9-12	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
	The Arts Grades 9-12	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
	CTE Grades 11-12	10	0.9%	15	1.4%	23	2.2%	35	3.3%	53	5.0%
Pennsylvania	English Grades 9-12	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
	Mathematics Grades 9-12	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
	The Sciences Grades 9-12	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
	History Grades 9-12	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
	The Arts Grades 9-12	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
	CTE Grades 11-12	10	1.2%	15	1.8%	23	2.8%	35	4.3%	53	6.5%
Rhode Island	English Grades 9-12	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%
	Mathematics Grades 9-12	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%
	The Sciences Grades 9-12	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%
	History Grades 9-12	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%
	The Arts	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%

State in Consortium	Course Assessments	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
		#	%	#	%	#	%	#	%	#	%
	Grades 9-12										
	CTE Grades 11-12	10	13.3%	15	20.0%	23	30.7%	35	46.7%	53	70.7%
Vermont	English Grades 9-12	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%
	Mathematics Grades 9-12	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%
	The Sciences Grades 9-12	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%
	History Grades 9-12	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%
	The Arts Grades 9-12	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%
	CTE Grades 11-12	10	13.9%	15	20.8%	23	31.9%	35	48.6%	53	73.6%

**Summary Table for (B)(5)(a)(iii): High School Students Using**

State in Consortium	2013-2014		2014-2015		2015-2016		2016-2017		2017-2018	
	#	%	#	%	#	%	#	%	#	%
Arizona	1,770	0.6%	2,306	0.7%	3,610	1.1%	5,346	1.7%	8,075	2.6%
Connecticut	2,636	1.5%	3,434	1.9%	5,227	3.0%	7,962	4.5%	12,025	6.8%
Kentucky	3,331	1.7%	4,336	2.2%	6,298	3.2%	9,682	4.9%	15,183	7.7%
Maine	1,949	3.0%	2,543	3.9%	3,869	5.9%	5,893	9.0%	8,903	13.6%
New Hampshire	2,340	3.5%	3,050	4.6%	4,642	7.0%	7,071	10.6%	10,680	16.1%
New Mexico	1,701	1.7%	2,213	2.2%	3,369	3.4%	5,132	5.2%	7,750	7.8%
New York	2,917	0.3%	3,801	0.4%	5,785	0.7%	8,812	1.0%	13,309	1.6%
Pennsylvania	3,058	0.5%	3,986	0.7%	6,066	1.0%	9,239	1.6%	13,956	2.3%
Rhode Island	3,508	7.2%	4,568	9.4%	6,953	14.3%	10,591	21.9%	15,995	33.0%
Vermont	2,087	6.7%	2,697	8.7%	4,104	13.3%	6,250	20.2%	9,442	30.5%

**(b) Supporting teachers and administration.**

*Pilot Phase:* NCEE will deploy four Engagement Managers to support implementation in the field. Their duties will include support to state policymakers, state education department staff, and state level stakeholders. They will help LEAs and schools with plans and operations. An NCEE operations manager will coordinate all relationships between the schools in the field and the Board Examination Systems providers, making sure that any problems are resolved quickly.

But the primary support for teachers and school administrators will come from the Board Examination System providers. They provide a wealth of materials and services to support their programs. We will draw below on the exemplar providers and their offerings to illustrate this point, though the reader should bear in mind that the actual providers will depend on the outcome of the competitive procurement process specified above.

One of the English organizations that offer Board Examinations begins with introductory training sessions for the teachers of their courses. These can be supplemented by special two-day and three-day courses on particular topics. Another also offers a graduated set of certificate programs for teachers that extend all the way up to the opportunity to earn a Masters Degree in Education from the University of Cambridge. All of these programs are available to American teachers without them having to travel to England, principally through the Web. In addition, one provider offers access, through its website, to a wide range of papers (e.g., program descriptions, course syllabi, lesson plans, prior year examination questions, and examples of scored student work from prior years) as well as other teachers worldwide who have experience teaching the same courses and are willing to answer questions from and share craft knowledge with teachers with less experience, and examiners who are responsible for creating and grading the course examinations.

One American provider, ACT, has partnered with America's Choice (ACI), a member of the National Center on Education and the Economy's family of organizations. ACI offers participating schools a tiered set of instructional system modules and associated training and technical assistance. Each level of help provided to students and their schools is tied to the degree to which students fall short of the level of literacy they need to profit from their on-grade instruction. The most intensive level of assistance is intended to get students who are two or more years behind back up to grade level.

All three of the lower division programs we have offered as examples provide some form of instructional modules based on seventh and eighth grade on-grade materials that can be combined to create customized programs for students who come into the ninth grade Board Examination System programs with a level of English and mathematics literacy lower than it should be. In this way, the faculty in schools serving high-need students can get them to the point at which they can participate successfully in the Board Examination System programs they will offer to these students.

A key aspect of implementation during the pilot phase is the need for the states to meet the SCOBES requirements for a performance-based diploma. The Project Management Partner's policy team will be working with the states to help them frame the legislation or regulatory tools they will need to meet this requirement.

*Operational Phase:* All of the forms of assistance just described will be available to the states, districts and schools involved in the operational phase of the program. At that stage, however, some states will want to ask the Board Examination System providers to assist them in helping their schools of education offer programs of pre-service and in-service instruction for teachers that will prepare them to teach the Board Examination System programs well to students from a wide variety of backgrounds. The groundwork for this will be laid during the pilot phase of the work.

**Going to Scale.** The key issue for many states in taking programs to scale is the cost of sustaining them. But that will not be a problem for this program. As it grows, the rate at which money is saved due to high school students moving on to open-admissions colleges early exceeds the rate of increase of cost due to adding new students, and, after the third year of implementation, the net effect of the program is to create a fiscal dividend that can be reallocated to high-need students. We have included a cost analysis of these dynamics in Appendix O.

We believe the amount of the dividend that represents a saving for the locality should be ploughed back into the high schools to provide additional support for struggling students. The amount that represents a savings for the state could be used to provide the start-up investment for bringing new schools on board as the state rollout proceeds.

## **(B)(6) PROJECT MANAGEMENT**

### **(a) Project Management Partner and Key Personnel.**

*Quality, Qualifications, and Role of the Project Management Partner.* The National Center on Education and the Economy (NCEE) has been selected by the Consortium to be the Project Management Partner (see Appendix B for documentation). The organization was founded in 1987 to analyze the implications of changes in the international economy for American education, formulate an agenda for American education based on that analysis and seek wherever possible to accomplish that agenda through policy change and development of the resources educators would need to carry it out. In 1989, the organization began an intensive program of international benchmarking of the world's most effective education and training systems. These efforts continue to the present day and provide the substantive foundation for all of NCEE's programmatic activities. NCEE created the Commission on the Skills of the American Workforce. The Commission's 1990 report, *America's Choice: high skills or low wages!*, largely

based on policy lessons learned from high performing countries, was released the following year. Over the next decade, almost the entire agenda advanced in the report was enacted into legislation by the Congress and signed into law by the President, and many states also enacted policies designed to support the recommendations made at that level.

In 1992, NCEE invited the University of Pittsburgh, 26 states, six cities and three national foundations to join with it in creating New Standards, with the aim of doing the research and development needed to advance the state of the art in performance standards and high quality assessments. The New Standards initiative has long been widely regarded as some of the best work on standards and assessment done in the United States.

In 1998, NCEE created the America's Choice® School Design Program, based on the work of its National Alliance for Restructuring Education, begun several years earlier. Reflecting NCEE's study of best education practice in the nations with the most effective education systems, America's Choice produced designs for highly effective elementary, middle and high schools and continued the development work begun under the aegis of New Standards to create powerful, coherent instructional systems to support the work of the schools, districts and states served by America's Choice, concentrating its efforts on the lowest performing schools, typically serving highly disadvantaged students. America's Choice has literacy and math interventions (Ramp-Up Literacy® and Ramp-Up Mathematics®) that are complete instructional systems designed for middle and high school students who are more than two years behind. In addition, America's Choice created modular interventions (Mathematics Navigator® and Literacy Navigator®) for elementary, middle and high school students who are experiencing difficulty with specific topics. America's Choice has worked in over 2000 schools since its inception.

In 1999, NCEE was asked by Carnegie Corporation, joined by the Broad Foundation, the Stupski Foundation and the New Schools Venture Fund, to create a design for a new kind of national organization to train school principals to lead high performing schools. Three years later, NCEE announced the launch of the National Institute for School Leadership (NISL). Since its inception, NISL has served over 3,800 principals in 14 states; two states have adopted NISL as their primary school leadership program.

Independent research has found that both America's Choice and NISL are unusually effective at improving student achievement, attainment and retention. In 2009, the Consortium for Policy Research in Education released *School Improvement by Design: Lessons from a Study of*

*Comprehensive School Reform Programs*, which looked at the design and implementation of the nation's three leading school reform programs: America's Choice, Success for All, and Accelerated Schools. This study was the capstone report of CPRE's 13-year Study of Instructional Improvement. Over four years, the researchers collected data from 113 schools, 31 of which were America's Choice schools, to determine how practices in the three leading comprehensive school reform models differed from those in typical schools and whether these differences impacted academic achievement. The study focused on literacy achievement and schools in the study were chosen disproportionately from high and medium poverty districts. The report found the America's Choice program was the most successful of the three models studied at raising the performance of students on reading at the elementary level and the upper grades.

The Comprehensive School Reform Quality Center, funded by the USDOE's Office of Elementary and Secondary Education to provide reviews of the leading comprehensive school reform models, placed America's Choice in the highest category of its ratings. In a 2010 study of a NISL Program implementation in Pennsylvania, Old Dominion University researchers found that schools run by NISL-trained principals achieved statistically higher proficiency rates in English language arts (ELA) and mathematics than comparison schools at the elementary, middle and high school levels. In another 2010 quasi-experimental study of a NISL Program implementation in Massachusetts, Old Dominion University researchers found that 65 schools run by NISL-trained principals achieved statistically higher test scores on the state's mathematics exams than comparison schools.

The SCOBES program is consistent in several respects with NCEE's long-term mission and goals and is the latest in a series of complex programs NCEE has organized and managed. NCEE's core management team has successfully launched a number of large scale projects and institutions that have gone on to play an important role on the American education scene, including, in addition to those already mentioned, the National Board for Professional Teaching Standards (with a current annual budget of \$40 million). NCEE has cash reserves of several million dollars. The organization carries no debt. NCEE has the management capacity, the financial reserves and the experience to bring this program to scale.

*Key Personnel Assignments and Experience.* Terry Holliday, Commissioner of Education in Kentucky, chairs the SCOBES Board of Trustees. Dr. Holliday was elected to the Commissioner's position in July 2009 after having served as superintendent of schools in

districts in North Carolina and Pennsylvania. Under his leadership, the Iredell-Statesville District won the Malcolm Baldrige award for improvement in quality and productivity in 2008. NCEE, Project Management Partner for SCOBES, is led by Marc Tucker, President and Chief Executive Officer. Supporting Mr. Tucker are Betsy Brown Ruzzi, Deputy Director; David Mandel, Director of Research and Policy Development; Susan Sclafani, Director of State Services; Chief Financial Officer Rich Cannon and Director of Administration Suzie Sullivan. A leader of the standards-driven education reform movement, Tucker created NCEE and all of the programs described above. Early in his career, he was Associate Director of the National Institute of Education, directing all of the education policy research programs of the US government. Tucker will provide overall direction for the staff. Betsy Brown Ruzzi organized NCEE's international education benchmarking research over the last twenty years. She served as Associate Director of the *New Commission on the Skills of the American Workforce*, playing a leading role in organizing, supervising and analyzing its global research papers. Ruzzi is responsible for coordinating the work of NCEE's staff, managing the budget, public outreach and engagement, and all national-level work. David Mandel joined NCEE last year after serving as the executive director of the Carnegie Corporation-Institute for Advanced Study Commission on Mathematics and Science Education. Prior to that, he directed The National Academies' Mathematical Sciences Education Board, oversaw the design of the Clinton Administration's Voluntary National Tests in reading and mathematics, and the development of the National Board for Professional Teaching Standard's advanced standards for teaching. Mandel will be the research director for this effort. Susan Sclafani served in the Bush Administration as Assistant Secretary for Vocational and Adult Education from 2003-2005 and Counselor to the Secretary. Previously, she was Associate Superintendent and Chief of Staff for the Houston Independent School District. Sclafani will oversee work with the states. Jana Carlisle will be this project's Project Manager. As a senior program officer at the Bill and Melinda Gates Foundation, Carlisle was responsible for strategy and management for the foundation's education portfolio. At Gates, Carlisle also managed evaluations of the foundation's education investments in New York City, Texas and North Carolina. She was chief planning officer in the Rochester City School District and the Director of Education Services for the Rochester Business Alliance. Howard Everson, of the City University of New York, a leading psychometrician, and James Pelligrino, of the

University of Illinois at Chicago, a leading cognitive scientist, are co-chairs of our TAC (see the full TAC list in the section (B)(4) Research and Evaluation).

The engagement managers hired for this effort are experts in navigating the complicated and often rapidly changing world of education politics and policy at the state level. Lyonel Tracy was the former Commissioner of Education in New Hampshire and served as superintendent of schools in a number of jurisdictions in Maine, Vermont and New Hampshire. David Osborne was an Assistant Secretary of a large Cabinet agency in California state government. As Vice President for Communications and West Coast Director of Public Works LLC, a national public policy consulting firm, Osborne provided policy advice and technical assistance to policymakers in states all over the US. Tim Barnicle is serving as a Senior Policy Consultant. His career includes policy positions in the US Senate and House of Representatives and senior positions in the US Department of Labor, including Assistant Secretary of Labor for Policy and Budget and Assistant Secretary of Labor for Employment and Training.

Widmeyer Communications, our communications specialists, is a full-service public relations firm that for twenty years has been at the forefront of crafting effective messages, advancing issues and ideas and helping move agendas on education and training.

NCEE's CFO, Rich Moglia-Cannon, will oversee the management of project funds in conjunction with the newly created Finance Committee of the Consortium's Board of Trustees. Cannon, a former auditor and consultant for Price Waterhouse, has successfully managed NCEE's grants and contracts for 13 years. NCEE contracts with an outside firm to conduct an annual financial audit. To date, NCEE has had a record of clean financial audits.

NCEE's Director of Administration, Suzie Sullivan has served in that role and as NCEE's Corporate Secretary for 22 years, since the organization was founded.

Brian Rowan will serve as the evaluator for this project. Rowan is the Burke A. Hinsdale Professor in Education at the University of Michigan and Research Professor at Michigan's Institute for Social Research. A sociologist (PhD, Stanford), Dr. Rowan's scholarly interests lie at the intersection of organization theory and school effectiveness research. His recent work includes a large-scale, longitudinal study of the design, implementation, and effectiveness of three of America's largest comprehensive school reform initiatives. Dr. Rowan has been elected to the National Academy of Education, chaired the IES Technical Review Panel for Grants on

Teacher Quality, chaired the NAE’s Time and Learning Work Group and serves on multiple editorial boards of peer-reviewed journals.

**Summary Table for (B)(6)(a): Key Project Management Personnel**

<b>Names of Key personnel from Proposed Project Management Partner</b>	<b>Role Assigned</b>	<b>Percent of Time Dedicated to Project</b>	<b>Vita Attached</b>
Marc Tucker	Director	75%	✓
Betsy Brown Ruzzi	Deputy Director	60%	✓
David Mandel	Research Director	75%	✓
Susan Sclafani	State Services Director	75%	✓
Jim Pellegrino	Co-Chair, TAC	Contract staff	✓
Howard Everson	Co-Chair, TAC	Contract staff	✓
Jana Carlisle	Project Manager	100%	✓
Lyonel Tracy	Engagement Manager	100%	✓
David Osborne	Engagement Manager	100%	✓
Tim Barnicle	Senior Policy Advisor	Contract staff	✓
Brian Rowan	Evaluator	Contract staff	✓

See Appendix P for CVs of personnel.

**(b) Project Work Plan, Timeline, Major Milestones, Deadlines and Roles and**

**Responsibilities.** NCEE has allocated 8.6 FTEs to reach the project’s outcomes and milestones. The staff will be supplemented by a subcontractor for communications and public engagement.

The TAC (see Appendix C), will oversee the research teams that will be engaged to conduct the TAC-designed analyses, including the National Center for the Improvement of Educational Assessment (NCIEA). An NCIEA team, led by Scott Marion, is already at work. The TAC and the research teams will not be funded through this grant, but by other sources already in hand. This grant will support a third-party evaluation of the pilot high schools.

A Higher Education Task Force (see Appendix N for list) will advise the TAC on the college-ready standards to be used to set the pass points for the lower division examinations and will mobilize support for those standards in the states.

A STEM Task Force is being assembled by the Arizona State University to lead the work on the STEM curriculum and assessments.

A Career and Technical Education Task Force will be assembled from representatives of the United States Chamber of Commerce Institute for a Competitive Workforce, the National

Association of State Directors of Career Technical Education Consortium and the American Association of Community Colleges to oversee and direct our work designed to create a rigorous curriculum on Career and Technical Education, along with performance assessments (see letters in Appendix Q).

The Board of Trustees will make policy for SCOBES, including setting its goals and objectives, setting the criteria for admission of states to the consortium and for removing a state from membership (and thus defining the key irreducible features of the SCOBES program), setting the standards for certification of Board Examination System providers, approving the pass points on the lower division examinations, hiring the President and chief executive officer if needed, engaging the Project Management Partner and setting the budget for the organization.

NCEE responsibilities for the project include: supporting the Board of Trustees, overseeing the research program; engaging the evaluator; distributing grant funds to the LEAs and the states; providing substantive input into the procurement process, assuring the quality of the products and services of the Board Examination System providers, designing the provider certification process, supporting implementation in the field, coordinating the work of the Board Exam providers with the work in the schools; developing and disseminating outreach materials at the state and local level and coordinating and supporting the implementation of the program described in this proposal in all other respects.

The partner LEAs are responsible for recruiting teachers, students and parents to the program; organizing teacher training; working with NCEE to purchase the materials needed to implement the program; gathering and sharing necessary student data; attending project meetings; and reaching out to local stakeholder groups.

In addition to participating in the work of the Board of Trustees, which will set overall policy for the project, the state departments of education are responsible for coordinating a consistent, high quality rollout across the LEAs. They will have to work with policymakers, including the Governor's office, state legislature, and the state board of education. Among the key roles of the chief state school officers will be taking the lead in assuring that his or her state will be able to offer all students who pass their Board Exams, as early as the end of that student's sophomore year, a diploma entitling that student to leave high school and enroll in a public 2-year or 4-year open-admissions postsecondary institution, without having to take remedial courses. Each state's member of the Higher Education Task Force will be responsible for working with his or her

colleagues in the higher education community in that state to facilitate their acceptance of the program in the state.

The Board Exam providers will be responsible for delivering their products and services: syllabi, course materials, formative and summative assessment packets, scoring services, and teacher professional development at various levels of intensity to the participating schools. In addition, they will provide on-going online and telephone based teacher support throughout this project.

There are eight major deliverables for this project:

**Deliverable one: *Define roles and responsibilities and secure commitments of partners***

Milestones: 1) Develop project rollout plan for each state and its high schools, 2) Recruit remaining high schools, if necessary 3) Conduct a competitive process for selecting Board Exam Providers, 4) Conduct webinars for states, LEAs and high schools to provide a project overview, 5) Receive remaining MOUs from LEAs, 6) Draft LEA rollout plans

**Deliverable two: *Conduct initial research and analysis needed to implement Board Exams***

Milestones: 1) Convene TAC, 2) Evaluate the Board Exam programs in relation to the Common Core State Standards, 3) Judge their comparability one to the other, 4) Determine college-ready performance levels in English and mathematics, 5) Bring together empirical evidence to set cut scores (6) Make cut score recommendations to Board

**Deliverable three: *Reach key policy decisions to guide project***

Milestones: 1) Board determines and updates MOU policy (which defines the key features of the program consortium-wide), 2) Board adopts criteria for certifying Board Examination Systems, 3) Board approves selection of Board Examination System providers, 4) Board determines policy on course offerings, 5) Board determines criteria for states' Move-On-When-Ready program, 6) Board approves cut score for lower division exams

**Deliverable four: *Implement Board Exam programs in the participating high schools***

Milestones: 1) Negotiate with providers for materials and services, 2) Recruit teachers and students, 3) Conduct teacher training, 4) Deliver materials to schools, 5) Arrange logistics to initiate rollout, 6) Maintain contact with schools and districts prior to pilot start date, 7) Provide on-going support during implementation phase

**Deliverable five: *Evaluate Board Exam programs' impact on student achievement, instructional quality, student motivation and college-going.***

Milestones: 1) Finalize evaluation plan, 2) Collect data required, 3) Analyze data and report results, 4) Share findings

**Deliverable six: *Communicate with key constituency groups and share results***

Milestones: 1) Create project website, 2) Develop communication materials including brochures and toolkit, 3) Develop outreach plans by state, 4) Disseminate project results to participating states and to the education community more broadly. (See timeline for details on the rollout in Appendix R).

**Deliverable seven: *Develop a rigorous STEM program, including courses and assessments, for the upper division of high school and publicize that program***

Milestones: 1) Assemble review committee of distinguished STEM experts, 2) Agree on aims and criteria, 3) Conduct review and decide on one or more STEM programs, 4) Publicize the results in appropriate media

**Deliverable eight: *Develop three rigorous upper division Career and Technical Education programs for the upper division of high school/community college two-year programs***

Milestones: 1) Assemble review committee from high school, community college and business communities, 2) Agree on aims and criteria, 3) Conduct review and decide on not less than three upper division/community college programs of study, including performance examinations, 4) Promote the use of the new programs by high schools, community colleges, and the recognitions of the awards by employers all over the United States.

**Summary Table (B)(6)(b): Project Workplan and Timeline**

<b>Major Milestones</b>	<b>Associated Tasks</b>	<b>Start Date</b>	<b>End Date</b>	<b>Responsible Entity</b>
<b>Define roles and responsibilities and secure commitments of partners</b>	Develop project rollout plan for each state and its high schools	Oct 2010	Dec 2010	Project Management Partner
	Recruit remaining high schools, if necessary	Oct 2010	Nov 2010	LEAs
	Conduct a competitive process for selecting Board Exam providers	Oct 2010	Dec 2010	Project Management Partner
	Conduct webinars for states, LEAs and high schools to provide a project overview	Oct 2010	Mar 2011	Project Management Partner
	Receive remaining MOUs from LEAs	Oct 2010	Nov 2010	Project Management Partner
	Draft LEA rollout plans	Nov 2010	Mar 2011	Project Management Partner and LEAs

<b>Major Milestones</b>	<b>Associated Tasks</b>	<b>Start Date</b>	<b>End Date</b>	<b>Responsible Entity</b>
<b>Conduct initial research and analysis needed to implement Board Exams</b>	Convene Technical Advisory Committee (TAC)	Oct 2010	Sept 2014	Project Management Partner
	Evaluate the Board Exam programs in relation to the Common Core State Standards	Oct 2010	Dec 2010	Project Management Partner /TAC
	Judge their comparability one to the other	Oct 2010	Dec 2010	Project Management Partner /TAC
	Determine college-ready performance levels in English and mathematics	Oct 2010	Apr 2011	Project Management Partner /TAC
	Bring together empirical evidence to set cut scores	Oct 2010	Apr 2011	Project Management Partner /TAC
<b>Reach key policy decisions to guide project</b>	Convene Board of Trustees	Oct 2010	Sept 2014	Project Management Partner
	States adopt Board Exam Systems	Nov 2010	Feb 2011	SCOBES
	Determine initial course offerings	Oct 2010	Dec 2010	SCOBES
	Determine criteria for states' Move-On-When-Ready program	Oct 2010	May 2011	SCOBES
	Approve cut score for lower division exams	Apr 2011	June 2011	SCOBES
<b>Implement Board Exam programs in the participating high schools</b>	Form and convene Higher Education Task Force	Oct 2010	Sept 2014	Project Management Partner
	Negotiate with providers for materials and services	Jan 2011	Mar 2011	Project Management Partner
	Recruit teachers and students	Oct 2010	March 2014	Project Management Partner and LEAs
	Conduct teacher training	June 2011	July 2014	LEAs and Board Exam Providers
	Order/Deliver materials to schools	June 2011	June 2014	LEAs and Board Exam Providers
	Arrange logistics to initiate rollout	Mar 2011	Aug 2011	LEAs and Board Exam Providers
	Maintain contact with schools and districts prior to pilot start date	Apr 2011	Sept 2011	Board Exam Providers
<b>Evaluate Board Exam programs' impact on student achievement, teacher and</b>	Provide on-going support during implementation phase	Sept 2011	Sept 2014	Board Exam Providers
	Finalize evaluation plan	Oct 2010	Jan 2011	Project Management Partner and Evaluator
	Collect data required	June 2011	Sept 2014	Project Management Partner and Evaluator

<b>Major Milestones</b>	<b>Associated Tasks</b>	<b>Start Date</b>	<b>End Date</b>	<b>Responsible Entity</b>
<b>principal value-added, instructional quality, student motivation and college-going</b>	Analyze data and report results	June 2011	Sept 2014	Evaluator
	Share findings	Sept 2012	Sept 2014	Project Management Partner and Evaluator
<b>Communicate with key constituency groups and share results</b>	Create project website	Nov 2010	Feb 2011	Project Management Partner
	Develop communications materials including brochures and toolkit	Nov 2010	Aug 2011	Project Management Partner
	Develop outreach plans by state	Nov 2010	Apr 2011	Project Management Partner and States
	Disseminate project results throughout the project	Sept 2012	Sept 2014	Project Management Partner and Evaluator
<b>Develop a rigorous STEM program, including courses and assessments, for the upper division of high school and publicize that program</b>	Assemble review committee of distinguished STEM experts	Oct 2010	Oct 2011	Project Management Partner
	Agree on aims and criteria	Oct 2010	Dec 2010	STEM Task Force/SCOBES
	Conduct review and decide on one or more STEM programs	Dec 2010	Apr 2011	STEM Task Force/ Project Management Partner /SCOBES
	Publicize the results in appropriate media	June 2011	Sept 2011	Project Management Partner
<b>Develop three rigorous upper division Career and Technical Education programs for the upper division of high school/community college two year programs</b>	Assemble review committee from high school, community college and business communities	Oct 2010	Oct 2012	Project Management Partner
	Agree on aims and criteria	Oct 2010	Dec 2010	CTE Task Force/SCOBES
	Conduct review and decide on not less than three upper division/community college programs of study, including performance examinations	Dec 2010	Mar 2012	CTE Task Force/ Project Management Partner /SCOBES
	Promote the use of the new programs by high schools, community colleges, and the recognitions of the awards by employers all over the United States	Mar 2012	Oct 2012	Project Management Partner

See detailed Timeline in Appendix R.

**(c) Adequacy of the Budget and Reasonableness of the Costs.** Please see the budget justification for a display of the projected costs associated with the program described in this proposal.

The grant for which we are applying is part of a larger funding package designed to support the whole Board Examination program. The Bill and Melinda Gates Foundation (Gates) provided an initial one-year planning grant to NCEE, in the amount of \$1.5 million, which ends in September 2010. That grant, combined with a gift to the program from NCEE's operating reserves of \$1.8 million, has enabled the Project Management Partner to hire a core staff, create the program plan and the research plan, recruit the initial group of states, launch the Board of Trustees and the TAC work and initiate the necessary research. At the end of May 2010, the Project Management Partner received an additional 2 years of funding in the amount of \$3.2 million from the Gates Foundation, primarily to support the continuing research program and provide modest support for the staff operation.

NCEE has applied for an i3 validation grant on behalf of the Consortium. In that proposal, the Consortium requested funds to support high-need and rural high schools committed to implementing the Board Examination System in ten states. The amount applied for was \$30 million. The budget for this proposal, also for \$30 million, is entirely for cost items that were not included in the i3 proposal. Thus the budgets for both this proposal and that proposal together come to \$60 million, not including the matching amount required for the i3 proposal. **No cost items appear in both of these proposals; they are complementary, not duplicative in costs.** But that means that, if NCEE does not win an award for the i3 program, it will only be able to accomplish half of what it will otherwise be able to accomplish. We have therefore submitted two budgets with this proposal. One shows what would be funded through the Race to the Top Assessment Program if we win the i3 grant, and the other shows what our budget request is if we do not win the i3 grant. Please see the budget justification section for a description of those activities described in this proposal that could be funded if we do and do not get the i3 grant.

The Government should be aware that, between the Gates grants shown in the budget justification and the subsidy for the program provided from NCEE's operating reserves, there is no danger that the program will fail if the i3 grant or the other sources of funds just named do not come through. The funds provided by Gates and NCEE are sufficient to assure the necessary

core funding. But they provide no support to the schools and districts to play their part, and they provide no funds for program evaluation. They would not support any work on STEM or Career and Technical Education. There would be little or no support for the schools or states. Given the current highly distressed fiscal condition of the schools, it would therefore be difficult for many, perhaps most, schools and districts to participate without substantial assistance. If they did not participate in substantial numbers, it is doubtful that the Board Examination System providers would be willing to make the changes in their product lines, including modifying them to align with the Common Core State Standards, that we are anticipating. Thus something would happen, but it would have nothing like the impact that we will have if the federal government funds the work described in this proposal.

**(d) Estimated Ongoing Costs to the States.** States in the Consortium have committed to making Board Examination courses and assessments available statewide after the end of the grant period if the evaluation of the instructional systems shows that they successfully prepare students for open admissions 2- and 4-year colleges without remediation. The cost of ongoing administration, maintenance, and enhancement for Board Examination programs includes, therefore, not just the cost of the assessments and their administration and scoring, but also the cost of the associated instructional material, teacher's materials, teacher training and teachers' access to a wide range of other resources. This is true of the core academic program we are proposing, as well as the Career and Technical programming and the STEM programs of study. We pointed out in the text above that the entire cost of the core academic program will be completely offset after the first three years implementation in a school by the reduction in high school costs produced by high school students leaving early to enroll in college after their sophomore or junior years. After that point, the implementation of our design, as we pointed out, actually creates a fiscal dividend that could be allocated to both provide more services in the schools to students who need extra services to succeed in the Board Examination System and to fund the costs of the increase in expenditures to bring new schools into the program. Thus the savings in the early adopter schools could be used to fund the process of bringing new schools on board until all the schools in the state are funded. In Appendix O, we illustrate the dynamics of the fiscal relationships involved.

It is impossible, at this time, to determine, by State, the replacement costs for assessment both because the cost depends in part on the choices that schools make among possible Board

Examination Systems and because any given State is replacing an entire curriculum, instruction and assessment program at the high school level, and no one has comprehensive data on these costs at any level of the system. SCOBES will explore these questions if a grant is made and will develop state-by-state plans for finding the seed funds necessary to scale up the system in the out years after the grant period ends. These plans, as just pointed out, could include the use of fiscal dividends from early adopters to provide the seed funds for those schools that enter the system later.

## **PART 1.I. COMPETITION PRIORITIES**

### **COMPETITIVE PREFERENCES PRIORITY 1: FOCUS ON PREPARING STUDENTS FOR STUDY IN STEM-RELATED FIELDS**

The State Consortium on Board Examination Systems (SCOBES), like the Department of Education, believes that Americans' achievement in the STEM areas will increasingly hold the key to competitiveness for our economy in the years ahead. Greatly expanding the number of students graduating from our high schools with strong STEM skills is not the only STEM strategy worth pursuing, but it is an indispensable component of a national strategy to achieve this goal.

Our approach to building a rigorous STEM curriculum builds directly on the core strategies on display in this proposal. The purpose of our lower division program is to create a very solid core curriculum for all our high school students. That curriculum will include good, solidly designed courses in mathematics and science, intended to lay a firm foundation for the upper division work to follow.

Our focus here is on the upper division program. Pearson/Edexcel and the University of Cambridge have a very ample catalogue of courses at the upper division level that is based on the English "A" levels, which the English like to call the "gold standard" of the English curriculum worldwide. Students taking "A" levels in England need present only three courses for their applications to England's leading universities, and so these courses end up being taken by their best students, and they are very demanding courses. They are offered at two different levels of challenge. The International Baccalaureate Diploma Program is designed at a similar level of rigor. Over the last few years, the College Board has been reviewing and rebuilding many of their courses in the STEM subjects to make them competitive with the best of the English exams

and courses.

The strategy we propose to use is simple. We have asked Dr. Michael Crow, president of Arizona State University, to take the lead in assembling a group of national STEM leaders to develop a rigorous program of STEM courses and assessments. (see Appendix S for a letter of support from President Crow). Under President Crow's leadership ASU has adopted his model of a New American University, that is, a university that consciously combines top intellectual leadership in the disciplines with a strong commitment to the application of new knowledge to the solution of the most important problems faced by our society. Two of the most important arenas for that work at ASU are the transformation of public education and advances in the STEM arena.

ASU is home to Nobel Prize winners and other leading researchers in the STEM disciplines who are committed to advancing the STEM agenda in the public schools. President Crow has agreed to assemble a group of such people at ASU and to reach out to others in our Consortium states and elsewhere to take the lead in creating a very strong STEM course of study, with the associated examinations. This team of leading STEM academics, augmented by high school teachers of these subjects, will go through the course and examination catalogues of the Board Examination System providers and select from each a group of upper division courses that would, in their judgment, constitute a demanding, rigorous and coherent program of study for upper division high school students anticipating a STEM career and preparing themselves for admission to a selective college. The architecture of each of these STEM programs might include some required courses and some options, and it will leave time in the student's schedule for non-STEM subjects.

Though this is a simple idea, it could have powerful ramifications. The elite high schools, public and private, probably don't need what we have just described. Most already offer a rich assortment of first-rate courses, and have a faculty that can make a judicious selection of them and the knowledge needed to guide their students through them in a way that accurately matches students' abilities and goals with the courses they should be taking to reach those goals.

But not every high school is Groton, Phillips Andover, Harvard-Westlake, Winnetka High, Scarsdale High or the Bronx High School of Science. In fact, very few are. For all the others, especially the vast majority of schools that will be piloting our program and then adopting it statewide, it will make an enormous difference to have a very clear map of the program that

students who have a serious interest and capacity in the STEM subjects should take to prepare themselves for a STEM career. Postsecondary institutions all over the US will be looking for students who have taken these programs and they will know how to evaluate their grades (given not by their high school teachers but by Board Examination System scorers). Students can take these programs with the confidence that they are taking courses that leaders in the STEM community say they ought to be taking to achieve their dreams. High school principals and faculty will be able to plan their curricula, order their materials and train their teachers based on clear guidance about what core courses their students should take in each one of these Board Examination programs. The idea is to use this opportunity to create a clear signaling system for students, high school teachers and college admissions staff.

Our plan calls for taking a year to complete this project. Thus the guidance produced by this task force will be available at the beginning of the first year of piloting the program.

## **COMPETITIVE PREFERENCE PRIORITY 2: FOCUS ON CAREER READINESS AND PLACEMENT**

We intend to design at least three rigorous career and technical offerings in the upper division of high school that result in industry-recognized credentials in three broad high-growth occupational areas. To be valuable to the student, these credentials must be industry-driven, standards-based, portable, and have connections to either a job or the next level of training.

As in the core academic areas, we will build on the best career and technical courses of study (with assessments) in English currently used around the world. We have already identified at least three systems of technical qualifications that can be adapted for use in the US as the basis of rigorous career and technical curriculum at the secondary level. One is Edexcel's multi-level system of BTEC qualifications, which offers programs of study at both the lower division (grades 9/10) and upper division (grades 11/12) of high school. Another is City and Guilds, also English, which offers a wide variety of qualifications in the trades. And another is the Applied "A" Level offerings of Edexcel and the University of Cambridge. All of these offerings are framed in a single coherent system of qualifications by OfQual, the British regulator, which functions in this arena as a national skill standards board for Britain. They are used in over 100 countries around the world. We will run a formal compete process to select the final providers.

One of the tasks is to identify broad, high-demand, high-wage occupational areas that are appropriate to introduce and certify at the secondary level. Several that appear promising are: 1) green jobs, including energy provision, 2) engineering, 3) media 4) IT and 5) healthcare. For example, students in media courses could take an introductory course as an elective in the lower division and then choose from a variety of areas in upper division such as: media productions, computer gaming, and web publishing. Students in engineering could study vehicle technology as a lower division elective and then broaden to aerospace, mechanical, operations engineering, and/or computer systems development in the 11th/12th grades. These career areas are likely to be of interest to the range of governing states as they allow high school students to explore and investigate many facets of these growing industries.

To determine the best sequence of courses, we propose a two-year development process. We have identified three national partners representing the business community (US Chamber of Commerce Institute for a Competitive Workforce), higher education (American Association of Community Colleges), and career and technical education experts at the state level (the State Directors of Career Technical Education Consortium). Each of these partners has committed to participating on a Career and Technical Education Task Force (CTETF) to help define the courses of study, reach out to network members, and generate information from the field. (See Appendix N for letters of support for CTETF).

Step One: We will review the best international career and technical assessments/qualifications systems to determine how they line up with current US career pathways and licensing requirements in the identified career areas. These systems offer not just assessments and certifications, but also rigorous instructional programs and performance-based assessments. With few exceptions, the US lags other advanced economies that have far more comprehensive national skill standards and credentialing systems.

The CTETF will recommend upper level programs of study (and suggest lower division introductory electives) in the occupational areas identified, based on a thorough review of the best available programs of study that result in industry-recognized, portable credentials. We realize that some adaptations may need to be made to fit the needs of American employers and educational providers. However, the benefit is that we are working from well-designed instructional systems and high-quality assessments rather than starting anew. These rigorous models will be designed to prepare students for technical certification examinations,

postsecondary education, and/or employment. The career and technical education programs of study will also be suitable for adoption by community colleges, technical colleges, and other 2-year and 4-year open enrollment postsecondary institutions.

Step Two: The career and technical courses of study will only be valuable if we have high schools and community colleges willing to offer them and employers that will recognize them. Therefore, our second, and very important, task is to work with the CTETF partners and their constituencies to promote these new courses and assessments so that college and schools will offer them and employers will employ students who earn certificates. Because we will be adapting qualifications that are highly regarded and well accepted in many other countries, we are confident that US colleges and businesses will be willing to adopt and honor them. Our partners on the CTETF have committed to publicizing the CTE courses of study.

**PART I.J. BUDGET**

**Budget Summary Table for Budget #1**

<b>Summary Budget Table</b>					
<b>Budget Categories</b>	<b>Project Year 1 (a)</b>	<b>Project Year 2 (b)</b>	<b>Project Year 3 (c)</b>	<b>Project Year 4 (d)</b>	<b>Total (e)</b>
1. Personnel	1,606,000	1,654,180	1,703,805	1,754,920	6,718,905
2. Fringe Benefits	321,200	330,836	340,761	350,984	1,343,781
3. Travel	369,826	327,826	306,826	306,826	1,311,303
4. Equipment	0	0	0	0	0
5. Supplies	0	0	0	0	0
6. Contractual	8,966,559	13,295,460	17,393,010	12,159,821	51,814,850
7. Training Stipends	0	0	0	0	0
8. Other	321,200	330,836	340,761	350,984	1,343,781
9. Total Direct Costs (add lines 1-8)	11,585,859	15,939,510	20,084,813	14,922,438	62,532,620
10. Indirect Costs	642,426	883,832	1,113,686	827,436	3,467,380
11. Total Costs (add lines 9-10)	12,228,285	16,823,342	21,198,498	15,749,875	66,000,000
12. Other Funds Allocated Toward this Work	6,669,974	9,176,368	11,562,817	8,590,841	36,000,000
13. Total Funds Requested (subtract line 12 from line 11)	5,558,311	7,646,974	9,635,681	7,159,034	30,000,000

All applicants must provide a break-down by the applicable budget categories shown in lines 1-10.  
Columns (a) through (d): For each project year for which funding is expended, show the total amount expended for each applicable budget category.  
Column (e): Show the total amount expended for all project years.  
Line 10: If you plan to request reimbursement for indirect costs, complete the Indirect Cost Information form at the end of this Budget section.  
Line 12: Show the total funding from other sources being used to offset the costs of this project, if any, and list all such funding sources in the budget narrative.

**Detailed Narrative:**

This is the first of two budgets that we have submitted with our Board Exam proposal. This first budget assumes that grants are secured for both of our grant applications to the Race to the Top Assessment Program and Investing in Innovation Program – i.e., \$66 million in total. With both budgets, we assumed that SCOBES would send all of the grant proceeds to NCEE in its role as Project Management Partner. This would allow us to avoid inefficient duplication between the SCOBES and NCEE, saving project funds. At the same time, NCEE leadership would work with the Finance Committee of the SCOBES Board of Trustees to insure that the funds were spent consistent with the grant provisions and for the benefit of the Consortium. Therefore, the budget assumptions described below that were used for calculating this budget, are based on NCEE’s cost structure.

**1) Personnel**

We plan to have 8.6 FTE’s working on this project for the four-year period. We estimate salary costs for these staff at \$6.7 million over the four-year project. This assumes an annual cost of living increase of 3% and annual performance bonuses of 5%. The individual staff members are listed in the table below. The “base salary” includes an estimated annual performance bonus.

<b>Staff</b>	<b>% FTE</b>	<b>Base Salary</b>	<b>Total</b>
Project Director: Marc Tucker will serve as President and Chief Executive Officer of SCOBES. He will provide overall direction to the staff as they carry out the policies established by the Board of Trustees. In addition, Tucker will take personal responsibility for providing guidance to the Engagement Managers as they work with state officials on policy matters in their states related to the SCOBES program.	75%		
Deputy Director: Betsy Brown Ruzzi will serve as Deputy Director of SCOBES, acting as Chief of Staff for the organization. She has responsibility for coordinating the work of staff and consultants, monitoring operations against the milestones and timelines and correcting course when	60%		

necessary, monitoring program against budget and maintaining liaison with all funding agencies.			
Project Manager: Jana Carlisle will serve as Deputy Director of State Services; as an Engagement Manager for the Western Region; as Project Manager for the i3 grant, and as Operations Manager, with responsibility for coordinating the needs of the schools in the system with the delivery of products and services by the Board Examination System providers.	100%		
Director of State Services: Susan Sclafani will have overall responsibility for the quality, timeliness and efficiency with which the staff delivers technical assistance to the states, districts and schools served by the program. In addition to supervising the work of the Engagement Managers, Sclafani will herself take responsibility for serving as Engagement Manager for the Southern Region, and for up to two states in the Middle States Region and Northeast Region.	75%		
Director of Research and Policy Analysis: David Mandel will oversee the work of all teams conducting the various research studies required by SCOBES, participate in the analysis of that data and serve as the organization’s liaison to the evaluation team, helping them to gain access to the data they need.	75%		
Engagement Manager: Lyonel Tracy will join David Osborne in an Engagement Manager team to serve the Northeast Region, providing a wide range of technical assistance to the states, districts and schools in that region.	100%		
Engagement Manager: David Osborne will join Lyonel Tracy in an Engagement Manager team to serve the Northeast Region, providing a wide range of technical assistance to the states, districts and schools in that region.	100%		

Senior Associate: Jackie Kraemer will provide staff support to the various research studies required by SCOBES, including the research necessary to define what is required to succeed in open-admission institutions. She will also support the various SCOBES Task Forces.	100%		
Executive Assistant: Carolyn Carey will provide administrative support to the members of the executive team.	75%		
Staff Assistant: Jennifer Crow will provide administrative support to the entire team.	100%		

## 2) Fringe Benefits

We estimate fringe benefits costs will total \$1.3 million. Fringe benefits will be pooled and charged to the project based on actual salary costs. The rate used for the proposal is 20% which is consistent with NCEE's recent experience.

## 3) Travel

Key Components of Travel Budget	# Trips	\$ per Trip	Total
Board of Trustees meetings	2 people/State x 12 States + 4 staff x 3 mtgs/yr	\$1,025/person	\$386,400
Higher Education Task Force: The Board Exam system needs to be accepted by colleges and universities as a legitimate high school graduation standard. We will work with a group of higher education officials to build that bridge in our member states.	24 members + 4 staff x 2 mtgs/yr	\$1,025/person	\$250,000
Engagement manager travel: These staff provide technical assistance and support to the 12 members of the Board Exam Consortium.	9 trips/yr x 12 states	\$875/person	\$378,000
Other staff travel: Staff will need to travel for various reasons including meetings with new potential states, Board Exam providers, etc.	5 staff x 1 trip/month	\$875/person	\$212,904
STEM Task Force: Will convene a group to support the creation of a STEM program	10 members + 2 staff x 3 meetings	\$750/person + \$1,000/trip	\$42,000

within the Board Exam project.	plus 1 trip monthly for coordinator		
CTE Task Force: Will convene a group of national business, higher education, and CTE experts to create a career and technical program within the Board Exam project.	3 meetings per year for two years plus 1 trip monthly for coordinator	\$3,000/meeting + \$1,000/trip	\$42,000

**4) Equipment**

None.

**5) Supplies**

None.

**6) Contractual**

Over \$51.8 million of the total project costs of \$66.0 million are included in contractual costs.

This includes the following:

- Board Exam System Costs for schools (\$35.3 million): Ten high schools will be piloting the Board Exam system across 10 states. We estimate that the cost to train teachers, purchase teacher and student materials and purchase student exams will be about \$353k per school over the course of the demonstration project.
- Supports for struggling students (\$4.4 million): We estimate that a significant number of students will come to the ninth grade behind grade level. Without additional support, these students would fail the rigorous curriculum that will be used at these demonstration schools. Therefore, for the 40 high-need schools that will be part of this pilot project, we have included \$81,000 per school to provide these schools with the resources to get these students ready to successfully complete the ninth grade curriculum. In addition, we expect a significant number of students to struggle to pass the board exams at the end of the second or third year of the project. We have budgeted \$14k per high-need school to provide the resources for the schools to help these students to get back on track to pass these exams. For the 60 other high schools that will participate in the pilot program, we have budgeted about \$9,700 per school to provide additional support for struggling students. It will take more than this to help all of the students at risk, but we believe these schools should be able to reallocate existing resources to meet these needs.

- State Coordination (\$2.7 million): We have budgeted \$270,000 per pilot state to provide the resources to coordinate the demonstration program. This includes the cost of staff time, travel, supplies and state-wide meetings. The state will be responsible for conducting project meetings of stakeholders, develop a state-wide roll-out plan, develop outreach materials, hold informational meetings, work with the project evaluator to obtain teacher and school data and resolve any pilot related issues in the schools.
- Evaluation (\$5.25 million): These funds will be used to support a team of researchers at the University of Michigan led by Professor Brian Rowan as they conduct an independent, third-party evaluation of demonstration high schools in the project. The budget includes personnel costs of \$1.9 million, \$1.2 million for examinations and incentives for respondents, \$1.9 million for indirect costs, and \$250k for other costs. See the Evaluation narrative in Section (B)(4) for a detailed description of the evaluation plan.
- Research (\$2.0): These funds will pay for the research necessary to drive the program's technical requirements including establishing a college-ready standard, equating the different vendor systems so that all are set to a common benchmark, and the significant number of other technical issues that have to be addressed to create a fair and reliable assessment system. These funds will support the work of the TAC.
- Procurement costs for Kentucky (\$750,000): The state of Kentucky has agreed to be the lead state for procurement for the pilot project. This budget covers their costs to play this role over the course of the project.
- STEM Task Force (\$120,000): To support the work of the STEM Task Force, we will pay \$3,000 to each of the 10 members for attendance and participation at three meetings. In addition, we will pay Gretchen Cheney (consulting staff member) a fee of \$90,000 to provide the research, technical, and support capacity for the Task Force.
- Career & Technical Education Task Force (\$480,000): We have recruited the American Association of Community Colleges, the US Chamber of Commerce, and the National Association of State Directors of Career and Technical Education to work with us on the CTE Task Force. We estimate the cost at \$100k per organization over the two-year effort. In addition, we will pay Gretchen Cheney (consulting staff member) a fee of \$90,000 per year to provide the research, technical, and support capacity for the Task Force.

- Tim Barnicle (\$200k): Mr. Barnicle supplements our engagement manager staff resources that provide technical assistance to the states.
- Outreach, Communications and Media Relations (\$530,000): A project that makes major changes in the way high schools operate will draw much interest. We have budgeted funds to pay for consultants to help us design and execute an effective communications strategy to educate parents and other education stakeholders on these changes and the benefits of participating in the demonstration program.
- Legal consulting on state contracting (\$50k): We will be consulting with a lawyer to identify and resolve procurement challenges that will be faced when trying to implement this pilot program.

## **7) Training Stipends**

None.

## **8) Other**

We estimate that other costs will equal \$1.3 million for this project. Other costs consist of office support costs like rent, supplies and copier leases. This amount was calculated as 20% of personnel costs (line 1) based on the historical experience of NCEE.

## **9) Total Direct Costs**

Total estimated direct costs for this project equal \$62.5 million.

## **10) Indirect Costs**

Total indirect costs for the project are estimated to be \$3.5 million. NCEE's negotiated indirect cost rate for FY'09 was 22.94%. Therefore we used this rate to calculate indirect costs for this project. The effective rate is much lower because NCEE only charges indirect costs on the first \$25,000 of contractual costs per year per vendor and this contract will have a significant amount of these "pass through" funds. We are prepared to negotiate a new indirect cost rate with the US Department of Education within 90 days of the awarding of this grant.

## **11) Total Costs**

The total estimated costs of this project are \$66 million over the four-year grant period.

## **12) Other Funds Allocated Toward this Work**

This budget assumes that we receive a grant from the i3 grant competition for \$30 million. The major areas that this would fund include the pilot in 40 high-need schools including the Board Exam curriculum, professional development and assessments (\$14.1 million), the costs to support the struggling students to meet the high standards (\$3.8 million), over half of the staff and travel costs (\$5.3 million), most of the evaluation costs (\$4.25 million), and a portion of the state coordination costs (\$1.1 million). We also have a commitment from the Gates Foundation to provide \$3.2 million for this project over the next two years. The key areas that this grant will cover include research costs (\$1.3 million), state coordination costs (\$480k), staff travel costs (\$379k), as well as a significant portion of the Board of Trustees, Outreach, and Higher Education Task Force for the next two years (\$473k). We are currently seeking the remaining funds from other foundations. If these funds are not secured from these efforts, NCEE is prepared to pay for the remainder of these costs from its own internal reserves. In this budget, the bulk of these costs would include \$500k for research, \$1.1 million for state coordination, and \$580k to support struggling students at the 60 additional pilot sites.

## **13) Total Funds Requested**

We are requesting \$30 million for this project over the four-year grant period.

**Budget Summary Table for Budget #2**

<b>Summary Budget Table</b>					
<b>Budget Categories</b>	<b>Project Year 1 (a)</b>	<b>Project Year 2 (b)</b>	<b>Project Year 3 (c)</b>	<b>Project Year 4 (d)</b>	<b>Total (e)</b>
1. Personnel	1,606,000	1,654,180	1,703,805	1,754,920	6,718,905
2. Fringe Benefits	321,200	330,836	340,761	350,984	1,343,781
3. Travel	332,326	290,326	269,326	269,326	1,161,303
4. Equipment	0	0	0	0	0
5. Supplies	0	0	0	0	0
6. Contractual	4,377,516	6,364,793	7,361,813	5,149,499	23,253,620
7. Training Stipends	0	0	0	0	0
8. Other	321,200	330,836	340,761	350,984	1,343,781
9. Total Direct Costs (add lines 1-8)	6,959,316	8,971,343	10,016,116	7,874,615	33,821,390
10. Indirect Costs	514,449	663,183	740,415	582,110	2,500,158
11. Total Costs (add lines 9-10)	7,473,765	9,634,526	10,756,531	8,456,726	36,321,547
12. Other Funds Allocated Toward this Work	1,600,000	1,600,000	1,560,774	1,560,774	6,321,547
13. Total Funds Requested (subtract line 12 from line 11)	5,873,765	8,034,526	9,195,757	6,895,952	30,000,000

All applicants must provide a break-down by the applicable budget categories shown in lines 1-10.  
Columns (a) through (d): For each project year for which funding is expended, show the total amount expended for each applicable budget category.  
Column (e): Show the total amount expended for all project years.  
Line 10: If you plan to request reimbursement for indirect costs, complete the Indirect Cost Information form at the end of this Budget section.  
Line 12: Show the total funding from other sources being used to offset the costs of this project, if any, and list all such funding sources in the budget narrative.

**Detailed Narrative:**

This is the second of two budgets that we have submitted with our Board Exam proposal. This second budget assumes that we do not win an Investing in Innovation grant and therefore, have to fund the program with the Race to the Top Assessment Program grant and funds we raise from other sources. With both budgets, we assumed that SCOBES would send all of the grant proceeds to NCEE in its role as Project Management Partner. This would allow us to avoid inefficient duplication between SCOBES and NCEE, saving project funds. At the same time, NCEE leadership would work with the Finance Committee of the SCOBES Board of Trustees to insure that the funds were spent consistent with the grant provisions and for the benefit of the Board Exam Consortium. Therefore, the budget assumptions described below that were used for calculating this budget are based on NCEE’s cost structure.

**1) Personnel**

We plan to have 8.6 FTE’s working on this project for the four-year period. We estimate salary costs for these staff at \$6.7 million over the four-year project. This assumes an annual cost of living increase of 3% and annual performance bonuses of 5%. The individual staff members are listed in the table below. The “base salary” includes an estimated annual performance bonus.

<b>Staff</b>	<b>% FTE</b>	<b>Base Salary</b>	<b>Total</b>
Project Director: Marc Tucker will serve as President and Chief Executive Officer of SCOBES. He will provide overall direction to the staff as they carry out the policies established by the Board of Trustees. In addition, Tucker will take personal responsibility for providing guidance to the Engagement Managers as they work with state officials on policy matters in their states related to the SCOBES program.	75%		
Deputy Director: Betsy Brown Ruzzi will serve as Deputy Director of SCOBES, acting as Chief of Staff for the organization. She has responsibility for coordinating the work of staff and consultants, monitoring operations against the	60%		

<p>milestones and timelines and correcting course when necessary, monitoring program against budget and maintaining liaison with all funding agencies.</p>			
<p>Project Manager: Jana Carlisle will serve as Deputy Director of State Services; as an Engagement Manager, with special responsibility for the Western Region; as Project Manager for the i3 grant, and as Operations Manager, with responsibility for coordinating the needs of the schools in the system with the delivery of products and services by the Board Examination System providers.</p>	100%		
<p>Director of State Services: Susan Sclafani will have overall responsibility for the quality, timeliness and efficiency with which the staff delivers technical assistance to the states, districts and schools served by the program. In addition to supervising the work of the Engagement Managers, Sclafani will herself take responsibility for serving as Engagement Manager for the Southern Region, and for up to two states in the Middle States Region and Northeast Region.</p>	75%		
<p>Director of Research and Policy Analysis: David Mandel will oversee the work of all teams conducting the various research studies required by SCOBES, participate in the analysis of that data and serve as the organization’s liaison to the evaluation team, helping them to gain access to the data they need.</p>	75%		
<p>Engagement Manager: Lyonel Tracy will join David Osborne in an Engagement Manager team to serve the Northeast Region, providing a wide range of technical assistance to the states, districts and schools in that region.</p>	100%		
<p>Engagement Manager: David Osborne will join Lyonel Tracy in an Engagement Manager team to serve the Northeast</p>	100%		

Region, providing a wide range of technical assistance to the states, districts and schools in that region.			
Senior Associate: Jackie Kraemer will provide staff support to the various research studies required by SCOBES, including the research necessary to define what is required to succeed in open-admission institutions. She will also support the various SCOBES Task Forces.	100%		
Executive Assistant: Carolyn Carey will provide administrative support to the members of the executive team.	75%		
Staff Assistant: Jennifer Crow will provide administrative support to the entire team.	100%		

## 2) Fringe Benefits

We estimate fringe benefits costs will total \$1.3 million. Fringe benefits will be pooled and charged to the project based on actual salary costs. The rate used for the proposal is 20% which is consistent with NCEE's recent experience.

## 3) Travel

Key Components of Travel Budget	# Trips	\$ per Trip	Total
Board of Trustees meetings	2 people/State x 12 States + 4 staff x 3 mtgs/yr	\$1,025/person	\$386,400
Higher Education Task Force: The Board Exam system needs to be accepted by colleges and universities as a legitimate high school graduation standard. We will work with a group of higher education officials to build that bridge in our member states.	20 members + 3 staff x 1 mtgs/yr	\$1,025/person	\$100,000
Engagement manager travel: These staff provide technical assistance and support to the 12 members of the Board Exam Consortium.	9 trips/yr x 12 states	\$875/person	\$378,000
Other staff travel: Staff will need to travel for various reasons including meetings with new potential states, Board Exam providers, etc.	5 staff x 1 trip/month	\$875/person	\$212,904

STEM Task Force: Will convene a group to support the creation of a STEM program within the Board Exam project.	10 members + 2 staff x 3 meetings plus 1 trip monthly for coordinator	\$750/person + \$1,000/trip	\$42,000
CTE Task Force: Will convene a group of national business, higher education, and CTE experts to create a career and technical program within the Board Exam project.	3 meetings per year for two years plus 1 trip monthly for coordinator	\$3,000/meeting + \$1,000/trip	\$42,000

#### 4) Equipment

None.

#### 5) Supplies

None.

#### 6) Contractual

Over \$23.3 million of the total project costs of \$36.3 million are included in contractual costs.

This includes the following:

- Board Exam System Costs for schools (\$14.1 million): Four high schools will be piloting the Board Exam system in each of the 10 partner states. We estimate that the cost to train teachers, purchase teacher and student materials and purchase student exams will be about \$353k per school over the course of the demonstration project.
- Supports for struggling students (\$1.0 million): We estimate that a significant number of students will come to the ninth grade behind grade level. Without additional support, these students would fail the rigorous curriculum that will be used at these demonstration schools. In addition, we expect a significant number of additional students to struggle to pass the Board Exams at the end of the third year of the project. We have budgeted \$25k per school to provide the resources for the schools to help these students to get back on track to pass these exams. It will take more than this to help all of the students at risk, but we believe the schools should be able to reallocate existing resources to meet these needs.
- State Coordination (\$1.6 million): We have budgeted \$160,000 per pilot state to provide the resources to coordinate the demonstration program. This includes the cost of staff time, travel, supplies and statewide meetings. The state will be responsible for conducting project meetings of stakeholders, develop a statewide roll-out plan, develop outreach

materials, hold informational meetings, work with the project evaluator to obtain teacher and school data and resolve any pilot related issues in the schools. This budget is \$1.1 million less than amount in the first budget. This reflects the fact that there are fewer schools involved in this version of the project (40 versus 100 schools).

- Evaluation (\$4.0 million): These funds will be used to support a team of researchers at the University of Michigan led by Professor Brian Rowan as they conduct an independent, third-party evaluation of demonstration high schools in the project. The budget included personnel costs of \$1.7 million, \$730K for examinations and incentives for respondents, \$1.4 million for indirect costs, and \$170k for other costs. See Section (B)(4) in the narrative for a detailed description of the evaluation plan.
- Research (\$1.4): These funds will pay for the research necessary to drive the program's technical requirements including establishing a college-ready standard, equating the different vendor systems so that all are set to a common benchmark, and the significant number of other technical issues that have to be addressed to create a fair and reliable assessment system. These funds will support the work of the TAC. To accommodate the lower budget, we will reduce the number of standard setting studies that we will conduct.
- Procurement costs for Kentucky (\$400,000): The state of Kentucky has agreed to be the lead state for procurement for the pilot project. This budget covers their costs to play this role over the course of the project. The lower amount in this version of the budget reflects the fact that there will be fewer schools involved in the demonstration (40 versus 100).
- STEM Task Force (\$120,000): To support the work of the STEM Task Force, we will pay \$3,000 to each of the 10 members for attendance and participation at three meetings. In addition, we will pay Gretchen Cheney (consulting staff member) a fee of \$90,000 to provide the research, technical, and support capacity for the Task Force.
- Career & Technical Education Task Force (\$196,000): To support the work of the CTE Task Force, we will pay \$6,000 to each of 10 members for attendance and participation at six meetings over a two-year period. In addition, we will pay \$35,000 over two years to the three organizations (American Association of Community Colleges, US Chamber of Commerce Institute for a Competitive Workforce and American Association of State Directors of Career and Technical Education) that now make up the CTE Task Force. We will also pay Gretchen Cheney (consulting staff member) a fee of \$91,000 over a

two-year period to provide the research, technical, and support capacity for the Task Force.

- Tim Barnicle (\$200k): Mr. Barnicle supplements our engagement manager staff resources that provide technical assistance to the states.
- Outreach, Communications and Media Relations (\$180,000): A project that makes major changes in the way high schools operate will draw much interest. We have budgeted funds to pay for consultants to help us design and execute an effective communications strategy to educate parents and other education stakeholders on these changes and the benefits of participating in the demonstration program. The reduction from the budget level described in the first budget would necessitate less media spots, a lesser number of brochures and a less sophisticated website.
- Legal consulting on state contracting (\$50k): We will be consulting with a lawyer to identify and resolve procurement challenges that will be faced when trying to implement this pilot program.

## **7) Training Stipends**

None.

## **8) Other**

We estimate that other costs will equal \$1.3 million for this project. Other costs consist of office support costs like rent, supplies and copier leases. This amount was calculated as 20% of personnel costs (line 1) based on the historical experience of NCEE.

## **9) Total Direct Costs**

Total estimated direct costs for this project equal \$33.8 million.

## **10) Indirect Costs**

Total indirect costs for the project are estimated to be \$2.5 million. NCEE's negotiated indirect cost rate for FY'09 was 22.94%. Therefore we used this rate to calculate indirect costs for this project. The effective rate is much lower because NCEE only charges indirect costs on the first \$25,000 of contractual costs per year per vendor and this contract will have a significant amount

of these “pass through” funds. We are prepared to negotiate a new indirect cost rate with the US Department of Education within 90 days of the awarding of this grant.

### **11) Total Costs**

The total estimated costs of this project are \$36.3 million over the four-year grant period.

### **12) Other Funds Allocated Toward this Work**

We have a commitment from the Gates Foundation to provide \$3.2 million for this project over the next two years. The key areas that this grant will cover include research costs (\$1.3 million), state coordination costs (\$480k), staff travel costs (\$379k), as well as a significant portion of the Board of Trustees, Outreach, and Higher Education Task Force for the next two years (\$473k). We are currently seeking the remaining funds from other foundations. If these funds are not secured from these efforts, NCEE is prepared to pay for the remainder of these costs from its own internal reserves. In this budget, the bulk of these costs would include \$2.3 million for staff costs.

### **13) Total Funds Requested**

We are requesting \$30 million for this project over the four-year grant period.