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APPLICATION FOR GRANTS UNDER THE

NATIONAL PROFESSIONAL DEVELOPMENT PROGRAM
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Closing Date: MAY 09, 2011

ABSTRACT

Math Sheltered English Teacher Training Project

The University of Mass Boston EL Teacher Training Program designed a Math Sheltered English Teacher Training Project to provide in-service training enrichment for EL and mainstream math teachers to enhance EL students' English language acquisition and math development. The project will also provide participants with the necessary EL competencies required by State standards for EL licensure. A cohort of 25 math in-service teachers will be recruited each year for a total of 125 over five years.

Applicant: University of Massachusetts Boston

Type of Program: Office of English Language Acquisition, Language Enhancement, and Academic Achievement for Limited English Proficient Students: National Professional Development Program

Number of Teachers Served each year: Year 1: 25; Year 2: 50; Year 3: 75; Year 4: 100: and Year 5: 125

Partners: Boston, Brockton, and Malden Public Schools

Priorities:

Eligible for **Competitive Preference Priority 2** – Enabling More Data-Based Decision Making
Eligible for **Competitive Preference Priority 3** – Promoting Science, Technology Engineering and Mathematics (STEM) Education
Eligible for **Invitational Priority 2** – Improving Preparation of All Teachers to Better Serve English Learners

Program Description:

The proposed Math Sheltered English Project is designed to provide in-service training to EL and mainstream teachers using math as content. EL students routinely perform in math due to English language barrier. The single greatest factor determining student achievement is the quality of the teaching[1]. One focus of this project will be to increase teachers' Specialized Content Knowledge (SCK), the mathematical knowledge and skill unique to teaching (Ball, Thames, & Phelps, 2008; Hill, Rowan & Ball, 2005). Research has shown that content knowledge for teaching has a significant impact on student achievement (Hill, Rowan, & Ball, 2005). In a previous project, research conducted on technology- based professional development found that a teacher's SCK scores proved to be a significant predictor of student success in algebra. For each one point gain on a teacher's post-test score at the end of the professional development sequence, their students achieved 0.448 higher points on the student post-test after

[1] National Comprehensive Center for Teaching Quality, 2005

A. QUALITY OF PROJECT DESIGN (40 points)

The proposed joint project with Boston, Brockton, and Malden Public Schools (henceforth consortium schools) is designed to increase the quality of EL and mainstream teachers who can use more effective methods of Sheltered English immersion instruction, a program required by Massachusetts law (See MGL Ch. 71A). "SEI is an instructional model for teaching grade-level content to ELs by integrating language and literacy development into content area instruction as it incorporates an array of teaching strategies that make the content (e.g., math, language arts) more comprehensible to ELs while promoting their language development." Along the same premise and as attested by research (Olson, Im, Slovin, Gilbert, Brandon, Yin, 2010), the UMass Boston Math Sheltered English Teacher Training Project will use SEI to incorporate math as content and to maximize English language development. The proposed Math Sheltered English Project is designed to provide in-service training to EL and mainstream teachers using math as content. EL students routinely perform poorly in math due to English language barrier. The single greatest factor determining student achievement is the quality of the teaching. One focus of this project will be to increase teachers' Specialized Content Knowledge (SCK), the mathematical knowledge and skill unique to teaching (Ball, Thames, & Phelps, 2008; Hill, Rowan & Ball, 2005). Research has shown that content knowledge for teaching has a significant impact on student achievement (Hill, Rowan, & Ball, 2005). Research conducted on technology-based professional development found that a teacher's SCK scores proved to be a significant predictor of student success in algebra (Hill, Rowan, & Ball, 2005). For each one point gain on a teacher's post-test score at the end of the professional development sequence, their students achieved 0.448 higher points on the student post-test after accounting for the influence from the other teacher variables (Olson, Im, Slovin, Olson, Gilbert, Brandon, Yin, 2010).

The conceptual foundation for SCK is based in the recognition that just as many professions require practitioners to possess skills that are distinctive to their work, teaching in elementary and middle school requires an understanding of mathematics that extends well beyond the surface characteristics of arithmetic. **This knowledge is even more essential for EL teachers**. Each day in the classroom, EL teachers use their SCK to recognize and then find a way to communicate to students how concepts, representations, procedures, and skills are mathematically interrelated and interconnected. As EL students' ability to understand and communicate in English is emerging, they are faced with the dual challenges of constructing mathematics as well as reading understanding. Through Math Sheltered English instruction both English language and math tasks unfold during both "regular" as well as EL instruction, but the unique increased demands placed on EL teachers highlight the necessity of possessing a high level of mathematics understanding since they are also charged to teach math as well as English. By increasing EL students' academic English achievement through the teaching of math as content, the Project will significantly reduce the high EL dropout rates as attested in Figure 1:

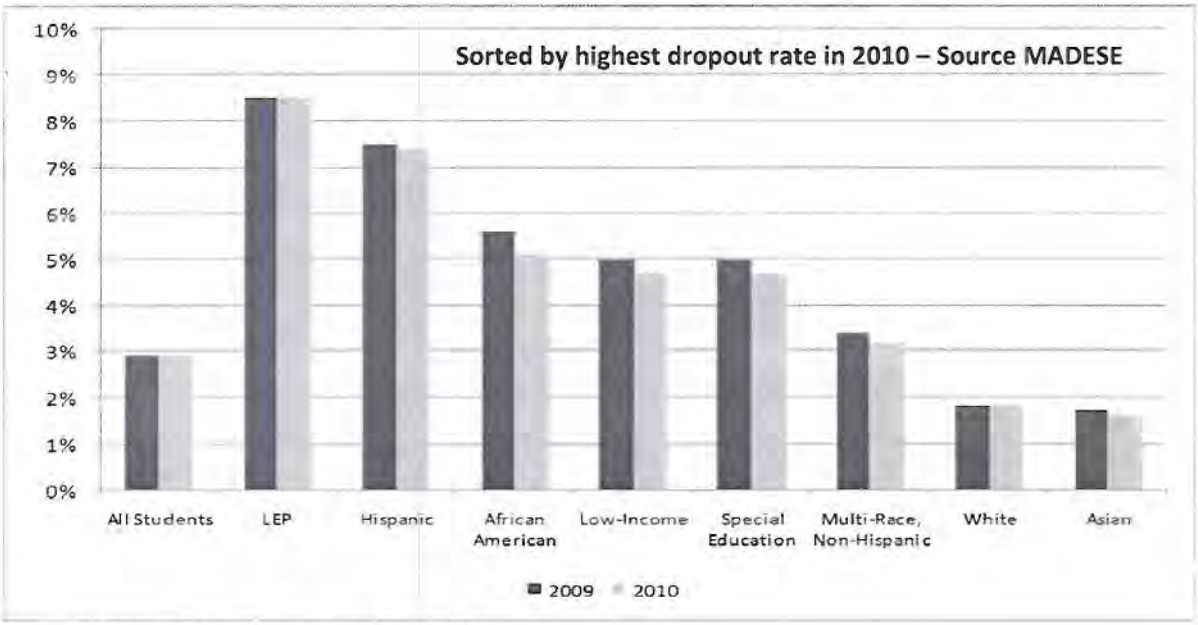


Figure 1 - DROPOUT RATES FOR 2009-2010

1. The extent to which the goals, objectives, and outcomes to be achieved ... are clearly specified and measurable. (35 points)

The purpose of the UMass Boston Math Sheltered English Teacher Training Project is to prepare **25** teachers (10 EL and 15 mainstream) each year in collaboration with consortium schools to specialize in Sheltered English immersion instruction through math for a total of **125** teachers during the five year duration of the project. The project is designed to provide in-service training enrichment **for mainstream, and EL teachers who lack adequate training in the teaching of English and math to EL students.** One cohort of **15** in-service mainstream teachers and one cohort of **10** EL in-service teachers will be selected each year **(total 25)** from a pool of candidates who work in the consortium schools for a total of **125** over five years, leading to endorsement in EL licensure in K-12. The UMass Boston Math Sheltered English Teacher Training Project has developed a course of study design to provide in-service training to consortium schools' teachers that leads to EL endorsement and affects the kinds of positive changes in academic English language and math achievement. The training includes courses in basic theoretical and applied linguistics, together with the teaching of Sheltered English immersion instruction via math, evaluation and assessment, the interdisciplinary areas of psycholinguistics and sociolinguistics; in cross-cultural education; in second language teaching methodology and first language maintenance. The program combines on-campus classroom work with on-site experience in EL classroom settings. The in-service training is credit bearing and is based on the identified needs of the consortium schools. The design is sequential, developmental and comprehensive as specified by goals, objectives, activities, and outcomes that are clearly specified within a time table and measurable.

Goal 1: To provide training for teachers who work with EL students in the effective use of for math instruction through Sheltered English Instruction. **Objective 1.1** *25 teachers from our consortium schools each year for a total of* ***125*** *over five years, will increase knowledge and skills and become highly qualified math teachers in effective use of Sheltered English instruction* **Activities 1.1** •Recruit and retain **25** teachers each year for a total of **125** over five years •Prepare and administer a pre-test to ascertain level of knowledge in technology in math teaching skills of participants; •Incorporate and teach a course of study in math education; •Establish a comprehensive in-service structure in the use of technology in EL math instruction; •Develop a EL math program of study that meets the State EL licensure standards; •Sequence the in-service training to comply with EL State licensure requirements that include competencies in math and methodologies; •Establish program articulation and agreement with designated consortium schools; •Create an Advisory Council comprised of respective school principals, state department personnel, parent/community representatives, university personnel. •Administer post-test to measure increase of knowledge in technology in math teaching skills of participants attained. **Documentation:** Certificates of Title III awards, GPA and satisfactory progress as certified by students' transcript, list of EL endorsed students and/or receipt of Math Education Certificate. List of students admitted to the project. Records of Math methods courses developed that infuse English lessons in math instruction. **Outcomes**: By summer 2017, **125** teachers in our consortium schools will have earned an EL endorsement with a Math Education Certificate through the UMass Boston Math Sheltered English Teacher Training Project. **Objective 1.2:** *Expand the capacity and commitment for continuing the Project after federal funding is no longer available.* **Activities 1.2:** •Review program capacity and commitment for continuing the collaboration between the University and consortium schools; •Implement gap

analysis of the capacity and commitment to continue program elements at each stage of the program; •Conduct ongoing action-planning sessions with the Advisory Council and respective consortium schools •Make necessary modifications as needed on advice of the Advisory Council. •Implement capacity building plan. Introduce TI-Navigator classroom connectivity system to enhance peer-and –self assessment and classroom management. **Documentation:** Minutes of planning sessions with the Advisory Council; certification of specific plans to expand and institutionalize the project; list of new courses designed and integrated in the university general course offerings; documentation of math infuse curriculum; certification of State approval of EL licensure. **Outcomes:** By 2017 a well articulated in-service curriculum in the use of technology in EL math teacher program that includes State mandated licensure competencies will be fully implemented. **90%** percent of participating teachers and school administrators will rate the quality and capacity of the project as very successful; **90%** of consortium teachers trained will work directly with EL students.

Goal 2: To improve the academic success of EL students in Boston, Brockton and Malden Public Schools by increasing the capability and skills in Sheltered English immersion Math instruction of EL and mainstream classroom teachers to meet EL language and math students' needs. **Objectives 2.1** *As a result of participating in the Math Sheltered English , **25** teachers from the consortium schools (15 EL and 15 mainstream) each year for a total of **125** over five years will acquire an endorsement in EL license*; **Activities 2.1** •Establish a comprehensive in-service structure in Math Sheltered English immersion instruction; •Sequence the in-service training to comply with State licensure requirements and competencies in second language acquisition and methodologies; •Establish program articulation and agreement with designated Boston, Brock, and Malden schools; •Create an Advisory Council comprised of respective

school principals, state department personnel, parent/community representatives, university personnel. **2.1 Expected Outcome**: By Summer 2017, **125** teachers in Boston, Brockton, and Malden Public Schools will have earned an EL endorsement through the UMass Boston EL Teacher Training Program as well as a Math Certificate.

Goal 3: Train Boston, Brockton and Malden EL and mainstream teachers in Sheltered English immersion instruction through math as content area so as to increase EL students' English academic English scores. *Objective 3.1 Infuse the Sheltered English immersion instruction with math content activities to enhance EL students' academic English achievement by 25% as measured by LAS Reading and Writing Standardized test and the State required MCAS test.*

Activities 3.1: •Design a sequence of courses and activities to train teachers to infuse content area in English language instruction; •Develop through content instruction a sequential plan that will help mainstream EL students gradually by stressing their talents; •Create content activities designed to lower the affective filter of students while increasing their motivation; •Prepare teachers to capitalized on math content lessons as a means to strengthen both reading, writing, and pronunciation in English; •Highlight to teachers how content area instruction enhances and reinforces natural and unconscious acquisition of English (Krashen, 1981). **Outcome 3.1:** At the end of each year, at least **85%** of EL students who were taught English through math content will increase their academic English scores by **25%** as measured by the State required MCAS test and the standardized LAS Reading and Writing Test.

The UMass Boston Math Sheltered English Teacher Training Program has as its major goal the professional development of EL and mainstream teachers who can effectively address the needs of an ever-increasing number of EL students enrolled in Boston, Brockton and Malden Public Schools. This project proposes to offer additional training to mainstream and EL

teachers which will enable them to utilize math content in the instruction of English to students with limited English speaking ability as a means to increase EL students' academic English and math achievement Existing and proposed course offerings intend to develop requisite competencies in Sheltered English immersion instruction. **Since Sheltered English immersion instruction is interdisciplinary and not a standalone methodology,** the program design relies on other competencies as required by the Massachusetts EL framework standards that include competencies in second language acquisition, linguistics, applied linguistics of English and the interdisciplinary areas of psycholinguistics and sociolinguistics.

In order to meet the stated goals and objectives of this proposal and to effectively address the specified objectives, participants pursuing an M.A. degree will follow a course of study that consists of 3 components for a total of 30 credit hours. **1. Core Requirements** (Students are required to take 4 courses): APLING 601; APLING 621 Psycholinguistics; APLING 603 Cross-Cultural Perspectives; APLING 623 Sociolinguistics. **2. EL Component** (Students are required to take 3 courses and 1 practicum): APLING 605 ESL Theories & Principles; APLING 618 ESL Methods and Approaches; APLING L669 Writing Theories in ESL; APLING L673 Reading in Bil/ESL Classroom; APLING 698 Practicum. **3. Math Component** (Students must take 3 courses: EDCS 684 Mathematics for Teaching K-6: Content Knowledge for Teaching; EDCG 685 Understanding High School Mathematics from a Teaching Perspective; EDCG 686 Advanced Strategies in Teaching Mathematics to EL students.

The UMass Boston Math Sheltered English Teacher Training Project has as its major goal the professional development of ESL teachers and mainstream math teachers who teach EL students The proposed project will improve the preparation of new teachers in the use of technology in math education, and it will ensure that every teacher has the opportunity to take

online learning courses. It will also improve the quality and consistency of teacher education through measurement, accountability and increased technology resources. Finally, it will ensure that every participant in the project knows how to use data to personalize instruction. **This is marked by the ability to interpret data to understand student progress and challenges to drive daily decisions and design instructional interventions to customize instruction for every EL student's unique needs.**

Existing and proposed course offerings intend to develop the required competencies in EL pedagogy, and math and educational technology. The goals, objectives, and outcomes are clearly defined. The evaluation section demonstrates the extent to which the goals and objectives are measurable. The proposed project design is based on student outcomes written as competencies as required by the State Dept. of Education EL and Math licensure. The objectives of the project are directly related to the purpose of the program to the extent that it will increase substantially the **number of highly qualified EL and math personnel** who can effectively address the English language, academics, and cultural needs of the EL student population.

The training objectives are clear and specific to the necessary competencies based on a set of guidelines for EL teacher preparation developed by the Center for Applied Linguistics and the Massachusetts State EL Framework. These competencies are acquired through course offerings listed at the end of this section. The specified objectives are measurable with stated expected outcomes to conform to the evaluation activities that will provide timely, accurate, and relevant information to program personnel and participants about the success of the training activities and how they respond to the participants' teacher preparation needs (see Section D, Evaluation Plan) which identifies specific measures for the competencies listed). The objective to complete the training of **25** teachers each year for a total of **125** in five years (10 EL and 15

mainstream teachers) is directly related to the need for EL teachers in Massachusetts, in general, and with the needs of Boston, Brockton and Malden Public Schools, in particular. The course offerings are intended to develop the EL competencies as proposed by the Center for Applied Linguistics and competencies required by The Massachusetts Department of Education competencies for EL license. The math competencies were developed by the Center of Science and Mathematics in Context (COSMIC) at the University which is designed to deliver technology-based mathematics professionals. The list of competencies is given in Table II, cross-referenced with course offerings designed to achieve the necessary EL competencies as required by the Massachusetts State Bureau of Teacher Licensure. The courses listed bellow have all been approved by the State Department of Education as meeting EL teachers' competencies.

TABLE II COURSE OFFERINGS CROSS-REFERENCED WITH COMPETENCIES

COMPETENCIES 100% of students will:	COURSES OFFERED TO MEET COMPETENCIES
1. Understand, speak, read and write the English language and the students' language.	APLING 620 Linguistics and Contrastive Analysis APLING 663 Structure of the English Language APLING 351 Comparative Roman Languages
2. Provide content instruction (in math, health, social studies, etc.) through the medium of both English and the students' language	APLING 642 Sheltered English Immersion Instruction APLING 661 ESL Methods and Approaches APLING 671 Testing in the Bil/ESL Classroom APLING 698 ESL Practicum
3. Understand the basic nature of language, language change, and the relation of language to society and culture	APLING 620 Linguistics and Contrastive Analysis APLING 621 Psycholinguistics APLING 351 Comparative Roman Linguistics
4. Demonstrate a knowledge of the psychological, grammatical, and semantic characteristics of English and the students' language	APLING 621 Psycholinguistics APLING 663 Structure of the English Language
5. Understand the basic stages/processes of first and second language acquisition	APLING 621 Psycholinguistics APLING 697 Second Language Acquisition
6. Understand the concepts of culture and cultural relativity, and the basic principles of social and cultural analysis	APLING 622 Cross Cultural Perspectives APLING 648 Capeverdean Culture APLING 650 Haitian Culture APLING 652 Asian Cultures

	APLING 653 Hispanic Civilization
7. Demonstrate an awareness of the cultural diversity of the U.S.	APLING 648 Capeverdean Culture APLING 650 Haitian Culture APLING 652 Asian Cultures APLING 653 Hispanic Civilization
8. Identify significant aspects of the mainstream culture to aid in reorganizing similarities and differences	APLING 622 Cross Cultural Perspectives
9. Demonstrate a knowledge of the culture of the students	APLING 648 Capeverdean Culture APLING 650 Haitian Culture APLING 652 Asian Cultures APLING 653 Hispanic Civilization
10. Apply appropriate methods for developing first and second language skills, including listening, speaking, reading and writing	APLING 640 Sheltered English Immersion Instruction APLING 660 ESL Theories and Principles APLING 662 ESL Materials Development APLING 662 Materials Development in ESL
11. Effectively incorporate students' culture in the curriculum	APLING 661 ESL Methods and Approaches APLING 662 Materials Development in ESL
12. Utilize appropriate classroom management techniques, especially those which relate to individualizing instruction	APLING 660 ESL Theories and Principles APLING 661 ESL Methods and Approaches APLING 662 Materials Development in ESL
13. Formulate objectives and evaluation strategies	APLING 661 ESL Methods and Approaches APLING 670 Testing in the Bil./ESL Classroom
14. Evaluate instructional material in terms of the students' linguistic, cultural, and intellectual characteristics	APLING 661 ESL Methods and Approaches APLING 662 ESL Materials Development APLING 665 Writing Theories in ESL
15. Create or modify instructional materials to meet students' needs	APLING 642 Curriculum Development in Bil. Ed. APLING 661 ESL Methods and Approachs APLING 671 Reading in the Bil/ESL Classroom
16. Work effectively with parents and the community	APLING 669 Bilingual Parent Involvement
17. Create learning strategies through the use of Mathematical as a Second Language (MSL	APLING 685Teaching English Through Subject Math EDCS 684 Mathematics for Teaching K-6: Content Knowledge for Teaching;
18. Infuse mathematical concepts in EL instruction	EDCG 684 Mathematics for Teaching K-6: Content Knowledge for Teaching
19. Use MSL to help EL students have access to mathematical concepts	EDCG 688 Mathematics as a Second Language: Strategies and methods

Existing and proposed course offerings intend to develop the required competencies in EL pedagogy, and math and educational technology. The goals, objectives, and outcomes are

clearly defined. The evaluation section demonstrates the extent to which the goals and objectives are measurable. The proposed project design is based on student outcomes written as competencies as required by the State Dept. of Education EL and Math licensure. The objectives of the project are directly related to the purpose of the program to the extent that it will increase substantially the **number of highly qualified EL and math personnel** who can effectively address the English language, academics, and cultural needs of the EL student population. As part of the EL or math endorsement, all students are required to do a student teaching practicum. Students spend a minimum of 300 hours in a classroom under the guidance of a licensed classroom teacher and supervised by the university supervisor. Work arrangements are made that allow participants to take part in a full range of experiences, responsibilities, and learning opportunities apart from their duties as an instructional assistant. Fifty-five hours of documented contact, observation and interaction to build rapport enable the participant to become familiar with their cooperating teacher and students, as well as classroom and school procedures and curriculum. A minimum of 245 hours of full classroom responsibility is required after that. During this time the participant will be responsible for planning and implementing of instruction in consultation with the cooperating teacher. During the Practicum, participants will also complete and implement Work Sample I. The cooperating teacher will observe the participant on a regular basis and will provide ongoing feedback regarding performance. The cooperating teacher will complete the Final Student Teaching Evaluation Portfolio.

2. The extent to which the design of the proposed project reflects up-to-date knowledge from research and effective practice. (5 points)

Not only does the course work required by the program reflect cutting edge issues regarding the education of EL students, the program incorporates recent research

recommendations that include a greater emphasis on the quality of teaching and clinical experiences. Students are required to critically evaluate recent research in EL education that include, for example, works by H.D. Brown, (2000), J. Cummins (1989, 1994, 2002, 2005), N.C. Ellis, (2003), S. Krashen, (1994, 2005), B. McLaughlin, (1990), J. Schumann, (1996), L. Wong-Fillmore, (1991, 2003), among others. In addition, our program incorporates latest research in second language teaching and sheltered English instruction in the content areas as proposed by J. Echevarria and M. Vogt, and D. Short (2008), Short (1991, 2000), F. Genesee (1994), L. Bartolomé (2010) and R. Mitchell and L. Myles (2004). The program also embraces the overarching consensus among educators, supported by available research, that the fundamental difficulty with mathematics among EL students is based in issues with reading and language. Further, studies indicate professional development marked the difference between teachers using technology to emphasize critical-thinking and problem-solving skills versus those who employed skill and drill (Wenglinsky, 1998; Brannigan, 2002). The standards-based emphasis on word problems to teach and assess mathematical knowledge underscores the need for language and reading support and the use of technology to enhance both English language acquisition and access to mathematical concepts. In addition, EL students need intensive, explicit instruction in basic mathematics concepts, skills and the language of mathematics (Francis, Rivera, Lesaux, Kieffer, Rivera, 2006).

The proposed project incorporates the latest recommendations from education reform efforts in the State of Massachusetts included in the published Framework for EL teacher preparation as well as practices supported by current research concerning the best practices in ELL teaching and learning as suggested by Douglas H. Brown in his book Principles of Language Learning and Teaching (2010) and recommendations for curriculum design and

program development as proposed by Carlos Ovando and Virginia Collier (1985). As the project design illustrates, the curriculum is not only comprehensive but it is also rigorous to ensure high academic standards. The close coordination with Boston, Brockton and Malden and Public Schools speaks to the comprehensive nature of the project design and the required rigor that support a high standard in both teaching and learning. The design also incorporates best practices in English language teaching through content areas as discussed by Carlos Ovando and Virginia Collier (1985), Stephen Krashen (1985), Macias and Kelly (1997), among others. EL students routinely perform poorly in math due to English language barrier. The single greatest factor determining student achievement is the quality of the teaching. One focus of this project will be to increase teachers' Specialized Content Knowledge (SCK), the mathematical knowledge and skill unique to teaching (Ball, Thames, & Phelps, 2008; Hill, Rowan & Ball, 2005). Research has shown that content knowledge for teaching has a significant impact on student achievement (Hill, Rowan, & Ball, 2005). Research conducted on technology- based professional development found that a teacher's SCK scores proved to be a significant predictor of student success in algebra (Hill, Rowan, & Ball, 2005). For each one point gain on a teacher's post-test score at the end of the professional development sequence, their students achieved 0.448 higher points on the student post-test after accounting for the influence from the other teacher variables (Olson, Im, Slovin, Olson, Gilbert, Brandon, Yin, 2010). The program also embraces the overarching consensus among educators, supported by available research, that the fundamental difficulty with mathematics among EL students is based in issues with reading and language. Further, studies indicate professional development was the difference between teachers using math problem solving to emphasize critical-thinking skills versus skill and drill (Wenglinsky, 1998; Brannigan, 2002). By infusing math in Sheltered English instruction

provides EL students with greater access to mathematical concepts ... [and] ... help students study in greater depth [as they] are exposed to more complex vocabulary and complicated concepts (Gee, 2005).

In addition, the project incorporates current recommendations that emphasize field-based experiences for all teachers in training. Many of the courses in the program require field- work activities. For example, the Practicum is a laboratory course of one full semester, providing full-time student teaching in EL programs. Trainees are also encouraged to enroll in field-based courses. Faculty members assigned to coordinate field activities supervise all field-based activities. These individuals have a lot of experience and good working relationships with sponsoring schools.

B. QUALITY OF PROJECT PERSONNEL (10 points)

The extent to which the applicant encourages applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability.

The UMass Boston Math Sheltered English Teacher Training project has sought faculty members who have, in addition to ESL and math expertise, the ability to work effectively with culturally diverse students. It is important to note that eight of the nine faculty members participating in the project hold doctoral degrees, seven are full-time employees of the University, and all nine are speakers of Capeverdean, French, Portuguese, and Spanish. Three are members of ethnic minority groups. The University of Massachusetts has encouraged the recruitment of faculty members from the various linguistic groups it serves. The University's policy in reference to recruitment of new faculty members for the Math Sheltered English Teacher Training Project is to encourage applications for employment from persons who are

members of groups that have been traditionally underrepresented. When positions become available, the UMass Boston Minority Recruitment Office, as well as the Affirmative Action Program, is contacted to help the program recruit qualified minority candidates. The final pool of candidates and the finalists must be approved by the Affirmative Action Director before a contract is issued. In addition, the Program widely advertises in a) local newspapers, b) local service agencies, and c) newspapers targeted for racial and ethnic minority groups, women, and disabled candidates.

1. The qualifications, including relevant training and experience, of the project director or principal investigator. (5 points)

Name: Dr. Donaldo Macedo, Tenured – Director of the Program - 25% time

Dr. Macedo received an Ed.D. in Applied Psycholinguistics and Second Language Teaching and a Ph.D. in Language Behavior from Boston University. He holds a M.A. in Spanish Literature from New York University. Professionally he has been teaching at the university level as a linguist and bilingual educator for over twenty five years. He has been honored in the field, including the Distinguished Professorship in Liberal Arts and Education and the 1999 University President's Awards. Dr. Macedo has published extensively. He is the author of *Issues in Portuguese Bilingual Education*, for which he is the contributing editor. He co-authored with Paulo Freire the book, *Literacy: Reading the Word and the World.* His other publications include Literacy *of Power*: *What Americans Are Not Allowed to Know; The Hegemony of English* (co-authored with P. Gounari). Dr. Macedo has also presented numerous papers dealing with linguistics and bilingual education in major national and international conferences. With his teaching experience and his scholarship in the field, Dr. Macedo has directed the Bilingual/ESL Studies Program at UMass Boston since 1983. He has also directed

many grants, including Title VII. Dr. Macedo speaks Capeverdean, Portuguese, Spanish, and English. He gives **25%** of his time to the project.

2. The qualifications, including relevant training and experience, of key personnel. (5 points)

Dr. Mary Cazabon—Sheltered English Specialist and Coordinator—100% time

Dr. Mary Cazabon received her doctorate from the University of Massachusetts Boston in Urban Leadership focusing on EL and linguistic minority students. She also holds an M.A. in Bilingual and ESL education from the same university. She received her B.A. from the Boston University in Spanish language and literature. Dr. Cazabon has been a bilingual and EL teacher from many years in K-12 education. She also has extensive experience in teacher bilingual, foreign language, and EL teacher training at the university level including Sheltered English instruction at graduate level. Dr. Cazabon was the Director of EL and bilingual education in Cambridge Public Schools for over 15 years. She has a solid background in curriculum development, implementation, and testing. She collaborated for many years with the late Wallace Lambert from McGill University who was a pioneer in bilingual, English/French immersion, and English/Spanish immersion programs both in Canada and the United States. As a result of their collaboration, Dr. Cazabon published extensively. She also has presented her research findings in major national and international conferences. Dr. Cazabon will devote **100%** of her time to the project.

Name: Fabián Torres-Ardilla – Math Specialist – 50% time

Fabián Torres-Ardilla received his Ph.D. from Boston University in Mathematics and Statistics. He holds an M.A. in Mathematics from Universidad de los Andes, Bogotá, Colombia. He also received his BS in Physics and Education from Universidad Pedagógica Nacional, Bogatá,

Columbia. He teaches courses in Mathematics for Life and Social Sciences and math and technology education. Mr. Torres-Ardilla has extensive experience in development of teaching material using tablet PCs for the improvement of teaching math. He has designed curriculum to increase student participation in math classes and developed computer network allowing for real time student-student and instructor collaboration. Mr. Torres-Ardilla has numerous publications in refereed journals and has spoken in major national and international conferences. He speaks English and Spanish. He works **100%** for the project.

Name: Dr. Lilia Bartolomé – Associate Professor, Tenured – 50% time

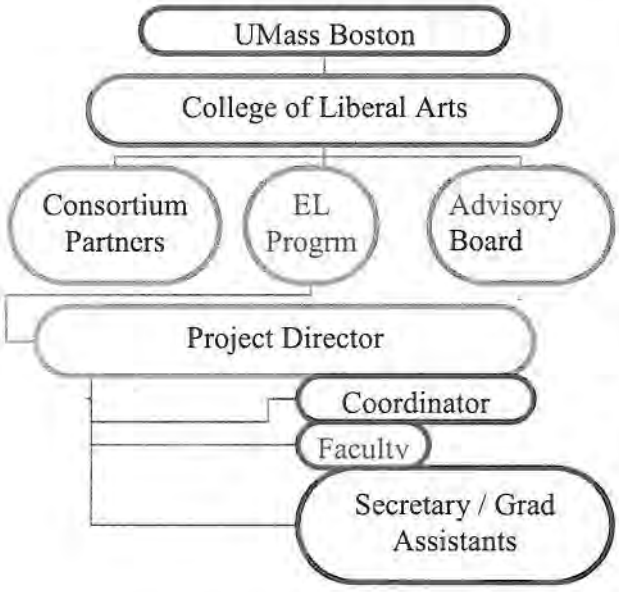
Dr. Bartolomé received her Ph.D. in Language Education, Literacy and Culture from Stanford University. She holds a M. Ed. from Harvard University in Reading. Dr. Bartolomé was an elementary bilingual teacher specializing in teaching reading. She was an Assistant Professor of Reading at Harvard Graduate School of Education where she also directed the Title VII Bilingual Fellowship Program and the Reading Certification Program. She is the author of *The Misteaching of Academic Discourses* published by Westview Press (1998), *Dancing with Bigotry* (with Donaldo Macedo), published by Palgrave Press (1999), and *Immigrant Voices* (with Henry Trueba), published by Rowman & Littlefield Publishers, (2000), and *Ideologies in Education* published by Peter Lang Publications, (2008). Dr. Bartolomé speaks English and Spanish. She works **50%** of her time for the project.

Name: Dr. Michael Gilbert – Math Education - Assistant Professor – 50% time

Dr. Gilbert received his Ph.D. from the University of Washington in Curriculum and Instruction. He holds an M.A. in Mathematics Education from the same university. He also received his B.A. in Mathematics and Secondary Education from Arizona State University. He teaches courses in methods and content area mathematics courses at UMass. Dr. Gilbert has extensive

experience working with K-12 students. He designed an instrument to assess and measure content knowledge for teaching mathematics at the secondary level. He is the lead author for the 2008 revision of the Hawaii Content and Performance Standards, and Principal Investigator for the MSP project Designing Algebra Resources for Teaching. In addition, Dr. Gilbert has published 15 papers in major journals. He has spoken extensively at major national and international conferences. Among many awards, he is the recipient of the National Technology Leadership Award, 2011. Dr. Gilbert will work **50%** time for the project.

C. QUALITY OF THE MANAGEMENT PLAN (20 points)



The flow chart under Figure 3 demonstrates responsibilities of each stake- holder are designed to ensure that each objective is met in accordance to its own timeline and the relationships among key collaborating units. The collaborative design maximizes administrative effectiveness while opening channels for communication and feedback. This provides the Director and Project staff with opportunities to make in-course adjustments so that each objective will be successfully accomplished given the continuous feedback inherent in the project design to effect in-course improvements. Dr. Donaldo Macedo will serve as the Director of the project. He will be responsible for the overall administrative and academic requirements of the project that, in turn, will be overseen by Dr. Donna Kuizenga, the

Dean of the College of Liberal Arts. In financial matters, Dr. Macedo will initiate and sign check requests in order for the University comptroller to release funds. The university grants accountant provides the Math Sheltered English Teacher Training Project with a formal chart of accounts. At the beginning of the fiscal year, the grants accountant also provides monthly printouts of each account activity. Dr. Mary Cazabon will be responsible for supervision of in-service training at the consortium schools. She will conduct observations of classroom teacher progress. As program liaison, she maintains the flow of communication between UMass Boston and consortium schools on a regular basis regarding the needs and progress of program activities. Our close coordination with our consortium schools enables us to receive feedback on the extent to which each participant we have trained achieves the desirable success in meeting the needs of EL students. The feedback is received mainly through a questionnaire designed to ascertain the effectiveness level of the teachers we train. This questionnaire is sent out by the Project Evaluator, Dr. Jack Levy, to local schools at the end of every school year. The data of the completed questionnaires and feedback from local schools are used to strengthen our curriculum.

1. The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks. (15 points)

The management plan below describes how the objectives are achieved on time, including defined responsibilities, and timelines. Discussion regarding how the management plan proposes to achieve the objectives within budget and the milestone for accomplishing project task will follow the management charts below:

Management Plan

Goal 1: To provide training for teachers who work with EL students in the effective use of math instruction through Sheltered English Instruction.

Project Timeline
Fall semester, Spring semester, Summer Session

Person/People Responsible: Dr. Cazabon and Project Staff	**Year 1**			**Year 2**			**Year 3**			**Year 4**			**Year 5**		
	F	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**
Objective 1.1 *25 teachers from our consortium schools each year for a total of **125** over five years, will increase knowledge and skills and become highly qualified math teachers in effective use of Sheltered English instruction*															
Objective 1.2 *Expand the capacity and commitment for continuing the Program after federal funding is no longer available*															

Goal 2: To improve the academic success of EL students in Boston, Brockton and Malden Public Schools by increasing the capability and skills in Sheltered English immersion Math instruction of EL and mainstream classroom teachers to meet EL language and math students' needs.

Project Timeline

Fall semester, Spring semester, Summer Session

Person/People Responsible: Dr. Mary Cazabon and Project Satff	**Year 1**			**Year 2**			**Year 3**			**Year 4**			**Year 5**		
	F	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**
Objectives 2.1 *As a result of participating in the Math Sheltered English , **25** teachers from the consortium schools (15 EL and 15 mainstream) each year for a total of **125** over five years will acquire an endorsement in EL license;*															

Goal 3: Train Boston, Brockton and Malden EL and mainstream teachers in Sheltered English immersion instruction through math as content area so as to increase EL students' English academic English scores.

Project Timeline
Fall Semester; Spring semester; Summer session

Person/People Responsible: Dr. Cazabon and Project Staff	**Year 1**			**Year 2**			**Year 3**			**Year 4**			**Year 5**		
	F	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**	**F**	**Sp**	**S**
Objective 3.1 Infuse the Sheltered English immersion instruction with math content activities to enhance EL students' academic English achievement by 25% as measured by LAS Reading and Writing Standardized test and the State required MCAS test.															

Math Sheltered English Teacher Training Project

The following Table II lists the milestones to be accomplished, the timeline for targeted completion, and the staff person(s) responsible for each milestone.

Milestones	**Date**	**Responsible Parties**
Recruit and admit 25 students each year for a total of 125	September 1, 2011-2016	Project Director, Coordinator; Project staff
25 participants each year will receive training in Sheltered English and math training	September 1, 2011-2016	Director and Project staff
25 participants each year will receive State license as EL teachers for a total of 125	June 20, 2011-2016	Director; Project staff
At least 80% of Project licensed EL teachers each will secure full employment in our partner schools	September 1, 2011-2016	Director; Consortium schools EL directors: Partner school human resources
At least 80% of EL students taught by Project trained teachers will show 25% academic English score increase as measured by MCAS test	On-going	Director; Project staff; Evaluator
Institutionalization of the Project by the assumption of costs by the University	June 30, 2016	Director; College Dean: Vice-President Academic Affairs

Within budget Each objective is clearly related to the budget item that supports it. The costs are reasonable for the area in which the university operates. It should be noted that personnel costs might appear to be high in comparison to the student costs such as tuition. However, this is due to the fact that the university is supported with state tax dollars, and therefore, tuition costs are relatively low in comparison with private universities. Each item in the project is covered by the budget with realistic budget amounts.

2. The extent to which the time commitments of the project director and other key project personnel are appropriate and adequate to meet the objectives of the proposed project. (5 points)

Dr. Macedo will devote **25%** and he will be responsible for the overall implementation of the program, including day-to-day administration and supervision of project activities. Dr. Mary Cazabon will work **100%** time coordinating project activities with our consortium schools as well as teaching. Dr. Lilia Bartolomé will devote **50%** to the project teaching and advising students. Dr. Fabian Torres-Ardilla will work **50%** of his time in the project. Dr. Michael Gilbert will work **50%** time for the project. The project is well designed to ensure that it will be implemented and carried out on predetermined timelines. Four other UMass Boston ESL Teacher Training faculty members not listed here will devote 15% to the project.

D. QUALITY OF THE EVALUATION PLAN (30 POINTS)

1. The extent to which the methods of evaluation are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project.

The evaluation design will accommodate both formative and summative data collection and analysis. The evaluation activities will be continual and on-going using both objective and subjective data. The focus of the evaluation activities will be to provide timely, accurate, and

other relevant information to project personnel and participants about the success of the training activities and how they respond to the participants' teacher preparation training needs. The Project will incorporate a multi motel evaluation approach designed to **a)** determine the status of the project objectives dealing with 1. Capacity Building; 2. Course Development; 3) Recruitment Activities; 4) Course Evaluation, **b)** The implementation of EL Pre- and Post-Test designed to address the acquisition of identified EL and Math Competencies and ensure quantifiable measurements of outcomes in accordance with *the Government Performance and Results Act (GPRA),* and **c) The project's built-in longitudinal plan to conduct research to measure the resulting change to participating teachers and the achievement of their EL students in both math and English language proficiency as measured by the Massachusetts Comprehensive Assessment System (MCAS)**. Math and academic English scores from EL students taught by Project-trained teachers will be compared each year with the math and academic English scores from EL students who were taught by teachers who did not receive any project training. The Project will be evaluated by Dr. Jack Levy who has over 30 years of experience teaching, administering, and evaluating both Title VII and Title III pre-service, in-service, and doctoral programs.

The Project will use the CIPP (Context, Input, Process and Product) Evaluation Model (Stufflebeam, 2000) which is a product/process model that will be used for evaluation purposes. The model is a "comprehensive framework for guiding evaluators of programs, projects, personnel, products, institution and systems." The CIPP Evaluation checklist will be used to evaluate contractual agreements, context, input, process, impact, effectiveness, sustainability, transportability, and meta-evaluation and final synthesis report. The evaluation design will accommodate both formative and summative data collection and analysis. The evaluation

activities will be accomplished under the direction of the project evaluator using both on-going objective and subjective data. The focus of the evaluation activities will be to provide timely, accurate, and relevant information to project personnel and participants about the success of the training activities and how they respond to the participants' teacher preparation training needs.

The following program evaluation activities will be conducted to determine the status of the program objectives, specifically those dealing with capacity building, course development, recruitment activities, and course evaluation. **1. Capacity Building** The evaluative documentation will specify the meetings held to initiate with other related disciplines within the University, commitment of the University to institutionalize the training program, and other pertinent activities. **2. Course Development** The evaluative data will describe the appropriateness of the course developed to respond to the training needs of the targeted linguistic-cultural groups, the appropriateness of the course content, and the qualifications of the course instructors. **3. Recruitment Activities** The evaluative documentation will identify the recruitment activities conducted to encourage participation in the training program and determine the appropriateness of these activities. **4. Course Evaluation** The "Course Evaluation Questionnaire" will be administered to collect data vis-à-vis the appropriateness of the course content, the level of responsiveness of the course instructor to the students' needs and the areas of course refinement/ change/addition to make the course more appropriate to the training needs of the targeted populations. In relation to the program participants' evaluation, instrumentation used and data analysis conducted will directly reflect those competencies in ESL education specified under course offerings/competencies given in Section A of this proposal. The data analysis will focus on the level of attainment that the program participants have achieved, determined by established competency-based criterion levels.

2. The extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible. (10 points)

Each objective has a clear statement of the intended outcome(s). Data will be gathered on an ongoing basis that indicates if the objective is on track to achieve the intended outcome or not. Both **quantitative** data as well as **qualitative** data is gathered. Qualitative data is gathered on ongoing basis by collecting samples of participant work, soliciting open ended survey questions from participants regarding the quality and usefulness of the information they are receiving, reflection papers, and through test analysis. The methods of evaluation include objective performance measures that are clearly written and related to learning outcomes written as competencies. This permits administrators to closely monitor the degree to which the actual outcomes of the program parallel the intended outcomes. On-going comparisons lead to a) a continuation of the actual practice or activity, b) modification of the same, or c) their abandonment in favor of more effective activities and practices. Formative evaluation ferrets out ineffective, inefficient, and inappropriate practices/activities and replaces them with the ones which produce intended results. The methods are not only designed to document the number of students trained each year, but these methods also measure clearly the quality of the training that students receive in the program. In fact, the pre-post tests are designed to prioritize quality in ways in which competencies are clearly measured. The following is a discussion of tests used to determine ESL teacher competency. **EL Teacher Competency Test: Pre-Test:** This instrument, to be administered during the first semester, will assess the program participants' competencies in the area of ESL training, related to the use of technology in language learning. The analysis of the data will be used to refine the ESL competencies included in the course

offerings. **EL Teacher Competency Test: Post-Test:** This instrument, to be administered after each semester, will assess the actual competency that the program participants have mastered. **EL Math Test: Pre-Test**: This instrument, to be administered during the first semester, will assess the project's participants' competencies in the area of Math training, related to the use of multiple approaches in math learning. **EL Math Test: Post-Test:** This instrument, to be administered after each semester, will assess the actual competency that the program participants have mastered in Math competencies. Those competencies not yet mastered, as determined through data analysis of the EL Teacher Competency Test, will be incorporated in the other EL education courses required by the program. The following evaluation activities will be conducted in order that the design of the program, course offerings, scheduling, and field assignments might directly relate to the reality and needs of the program participants. **1.** Conduct semester evaluation sessions with the teaching staff, program participants, and field personnel to determine success, relevancy and maintenance/deletion of course activities and/or field activities. **2.** Conduct monthly evaluation sessions with teaching staff to refine/ redefine/ delete and add program objectives related to student competencies and field experiences. **3.** Administer the Course Evaluation Questionnaire to determine the appropriateness of the course materials style of teaching of the instructor, sequencing of materials/readings, and availability of the instructor to provide tutoring. **4.** Maintain the Student Achievement Profile on all program participants to provide for data (a) on success or non-success of different courses taken by students, and (b) for advising of program participants. **5.** Conduct evaluation of related program sponsored activities such as the visiting lecturer series, curriculum development by program staff, materials/course development, staff meetings and field activities of the program staff and participants. The

timeline below identifies the above evaluative activities and projects for the implementation/administration of each task.

TIMELINE 2011-2016	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Capacity Building					✓			✓				✓
Course Development	✓				✓							
Recruitment Activities	✓	✓	✓	✓								
Course Evaluation				✓				✓	✓			✓
Evaluation Sessions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Course Evaluation Questionnaire				✓				✓				
EL Teacher Competency: Pre-Test	✓				✓					✓		
EL Teacher Competency: Post-test				✓					✓			✓
EL Math Competency: Pre-Test	✓				✓					✓		
EL Math Competency: Post-Test				✓					✓			✓

3) The extent to which the methods of evaluation provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. (10 points)

To document the effectiveness of the Math Sheltered English Teacher Training Project, the evaluator will examine mean scores and score variability in several measurable perceived student outcomes: Participants' competencies determined by pre/post assessments, successful completion of program, participants' judgments of the effectiveness of the faculty advising program, EL students' math and academic English scores as measures by MCAS, and the input of the collaborating districts as well as evaluations of the strengths and limitations of the Math Sheltered English course of study. All surveys use Likert-type scales that ask students to express the extent of their agreement with each scale item by marking a point between non-agreement to definite agreement. Overall triangulation of data will be tied into successful program completion.

Longitudinal panel time series survey progression. This design calls for collecting information on the same set of variables from the same teachers at two or more points in time. Each distinct occasion when data are collected from the sample members is referred to as a "wave" or round of data collection (Tourangeau, Zimowski & Ghadialy, 1997). Data collection will begin in year 2011 for the first cohort of teacher participants and will continue to add a new wave or cohort for each subsequent year for a total of 5 waves at the completion of the project in 2015-2016. Feedback from the evaluator at the end of each year will guide program implementation and potentially necessitate improvements to the project along the way.

In addition to the annual performance report submitted to the United States Department of Education, monthly progress reports (formative evaluations) will be done by the Student Services Specialist and reviewed with the Vice President of Academic Affairs to take an in-depth look at the participants' progress and program effectiveness so that changes in activities can be adjusted accordingly to ensure that all program objectives are met.

In order to provide data on the progress of the Math Sheltered English Training Project, the achievement of project goals and objectives will be continuously monitored. Not only will the Project monitor the fulfillment of goals and objectives (i.e., the 'numbers' are being met) but also the quality of services provided in support of those objectives. Although the process is important, outcomes are the key to success of Project. The Project Director along with the other project staff, including the Evaluator assigned to the project, will make sure that the following outcomes are achieved.

The project implementation strategies consist of a significant amount of prior planning to ensure the preparatory steps have been fully implemented by the time participants enroll. Each objective outlines activities to be carried out for the objective to be successfully implemented. The evaluation gathers data on each step of the implementation to ensure that it is developed on schedule and the services will be ready for the participants at the appropriate time

A detailed outline of how the quantitative and qualitative measures were described in the narrative above which addressed each specific objective of the project. The evaluation and the analysis of these measures will provide both performance feedbacks for the ongoing formative evaluation of project management and achievement as well as for the summative assessment of progress toward outcomes accomplished. The evaluation gathers data on each step of the implementation to ensure that it is developed on schedule and the services will be ready for the participants at the appropriate time and it is of high quality.

Math Sheltered English Teacher Training Project

TABLE OF CONTENTS

Page

A. Quality of the project design **1**

1. The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable..... 3

2. The extent to which the design of the proposed project reflects up-to-date knowledge from research and effective practice..... 11

B. Quality of personnel..... **14**

1. The Qualifications, including relevant training and experience, of the project director or principal investigator..... 15

2. The Qualifications, including relevant training and experience, of key project personnel..... 16

C. Quality of the management plan..... **18**

1. The adequacy of the management plan to achieve the objectives of the proposed project on time and within the responsibilities, timelines, and milestones for accomplishing project tasks..... 19

2. The extent to which the time commitments of the project director and other key project personnel are appropriate and adequate to meet the objectives of the proposed project..... 24

D. Quality of the project evaluation..... **24**

1. The extent to which the methods of evaluation include the methods are thorough, feasible, and appropriate to the goals, objectives, and outcomes of the proposed project..... 24

2. The extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible..... 27

3. The extent to which the methods of evaluation provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes..... 29

Project Narrative

Other Narrative

Attachment 1:
Title: Pages: Uploaded File: **1242-AppendixBrocktonAgrmt.pdf**

Attachment 2:
Title: Pages: Uploaded File: **1243-AppendixMaldenAgrmt.pdf**

Attachment 3:
Title: Pages: Uploaded File: **1244-AppendixDESENotification.pdf**