SPECIAL EDUCATION RESEARCH GRANTS

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PART I GUIDE TO THE RFA

IES is presenting grant opportunities in a new format this year. To make it as easy as possible and less time consuming for the reader/applicant, this section identifies the major differences from last year's format and describes the consequent organization of information in this year's three (3) Requests For Applications (RFA's).

In FY2006, the Institute of Education Sciences (IES) held a larger number of formal grant competitions, each one addressing a distinct topic area and each with its own RFA. For example, there were separate RFA's for Reading and Writing, Mathematics and Science Education, etc. Both the National Center for Education Research (NCER) and the National Center for Special Education Research (NCSER) offered multiple, single-topic competitions. The National Center for Education Statistics (NCES) also offered a National Assessment of Educational Progress (NAEP) secondary analyses grant competition last year.

In FY2007, IES is holding fewer formal grant competitions but addressing more topics. There are three competitions: one addressing education research (through NCER); one addressing special education research (through NCSER); and one addressing NAEP secondary analyses (through NCES). The education and special education competitions each encompass multiple, specific topic areas.

Last year each topic-specific RFA was self-contained. This year the NCER and NCSER RFA's are organized into sections that contain information that is common to all topics and sections that contain topic-specific information. The NAEP RFA remains self-contained.

This RFA (IES-NCSER-2007-01) describes the special education research competition. There are eleven (10) separate topics described in this RFA. Applications for five (5) of these topics have an application transmittal deadline of July 27, 2006, and will be reviewed in the fall of 2006. Applications for five (5) topics have an application transmittal deadline of November 16, 2006, and will be reviewed in the late winter (February or March) of 2007.

Also new this year are the forms for submitting applications electronically. Highlights of the forms will available on the web no later than April 11, 2006.

Information on education research topics may be found in the IES-NCER-2007-01 RFA, and information on NAEP secondary analyses may be found in the IES-NCES-2007-01 RFA. Topic-specific application transmittal deadlines are specified within these RFA's as well (note, there is only one "topic" and transmittal date for the NAEP RFA).

Suggested options for reading this RFA:

You may download the entire RFA as a .PDF file or you can navigate to particular sections of the RFA on line.

We suggest that prospective applicants begin by reading Parts I & II (introductory sections), followed by Part IV (common information on all five research goals for all topics); then read Part III (topic-specific information), and finally Part V (common application and submission information for all topics). Again, notice the differing application transmittal deadlines by topic. Also, pay careful attention to the

differing requirements for the five research goals in general. There is a decision tree provided in Part IV to help confirm which goal is appropriate for your application. In addition, in this RFA, detailed goal-related requirements are included in the topic-specific sections.

Of course, this RFA may be read start to finish, or you may want to start with a specific topic of interest (topic-specific sections are shown in the RFA table of contents that precedes this guide).

PART II GENERAL OVERVIEW

1. REQUEST FOR APPLICATIONS

In this announcement, the Institute of Education Sciences (Institute) describes the research programs that are funded through its National Center for Special Education Research. Separate announcements are available on the Institute's website that pertain to discretionary grant competitions funded through the Institute's National Center for Education Research (http://ies.ed.gov/ncer) and National Center for Education Statistics (http://ies.ed.gov/nces).

The Institute of Education Sciences (Institute) invites applications for research projects that will contribute to its Special Education Research Grants Programs on Early Intervention, Early Childhood Special Education and Assessment; Mathematics and Science; Reading, Writing, and Language Development; Serious Behavior Disorders; Assessment for Accountability; Individualized Education Programs and Individualized Family Service Plans; Secondary and Transition Services; the Quality of Teachers and Other Service Providers for Students with Disabilities; Autism Spectrum Disorders; and Response to Intervention. For the FY 2007 competition, the Institute will consider only applications that meet the requirements outlined below under the sections on Topics with July 27, 2006 Transmittal Deadline; Topics with November 16, 2006 Transmittal Deadline; and Requirements of the Proposed Research.

For the purpose of this Request for Applications (RFA), a student with disabilities is defined in Public Law 108-446, the Individuals with Disabilities Education Act of 2004 (IDEA), as a child "(i) with mental retardation, hearing impairments (including deafness), speech or language impairments, visual impairments (including blindness), serious emotional disturbance (referred to in this title as 'emotional disturbance'), orthopedic impairments, autism, traumatic brain injury, other health impairments, or specific learning disabilities; and (ii) who, by reason thereof, needs special education and related services" (Part A, Sec. 602). An infant or toddler with a disability is also defined in IDEA as, "an individual under 3 years of age who needs early intervention services because the individual (i) is experiencing developmental delays, as measured by appropriate diagnostic instruments and procedures in 1 or more of the areas of cognitive development, physical development, communication development, social or emotional development, and adaptive development; or (ii) has a diagnosed physical or mental condition that has a high probability of resulting in developmental delay" (Part C, Sec. 632).

2. OVERVIEW OF THE INSTITUTE'S RESEARCH GRANTS PROGRAMS

The Institute's over-arching priority is research that contributes to improved academic achievement for all students, and particularly for those whose education prospects are hindered by inadequate education services and conditions associated with poverty, race/ethnicity, limited English proficiency, disability, and family circumstance.

With academic achievement as the major priority, the Institute focuses on outcomes that differ by periods of education. In the infancy and preschool period, the outcomes of interest are those that enhance readiness for schooling, for example, language skills, and for infants and toddlers with disabilities, developmental outcomes. In kindergarten through 12th grade, the core academic outcomes of reading and writing (including reading and writing in the disciplines), mathematics, and science are emphasized, as well as the behaviors and social skills that support learning in school and successful

transitions to employment, independent living, and post-secondary education. At the post-secondary level, the focus is on enrollment in and completion of programs that prepare students for successful careers and lives. The same outcomes are emphasized for students with disabilities across each of these periods, and include the functional outcomes that improve educational and transitional results. The acquisition of basic skills by adults with low levels of education is also a priority.

In conducting research on academic outcomes, the Institute concentrates on conditions within the control of the education system, with the aim of identifying, developing, and validating effective education programs, practices, policies, and approaches as well as understanding the factors that influence variation in their effectiveness, such as implementation. Conditions that are of highest priority to the Institute are in the areas of curriculum, instruction, assessment (including the identification of students with disabilities), the quality of the education workforce, and the systems and policies that affect these conditions and their interrelationships (for example, accountability systems, delivery mechanisms including technology, and policies that support the ability of parents to improve educational results for their children through such means as choice of education services and provision of school-related learning opportunities in the home).

In this section, the Institute describes the overall framework for its research grant programs. Specific information on the research topics described in this announcement may be found in the sections pertaining to each special education research program:

- Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities
- Individualized Education Programs and Individualized Family Service Plans
- Mathematics and Science Education
- Reading, Writing, and Language Development
- Secondary and Transition Services
- Serious Behavior Disorders
- Quality of Teachers and Other Service Providers for Students with Disabilities
- Autism Spectrum Disorders
- Response to Intervention
- Assessment for Accountability

The Institute addresses the educational needs of typically developing students through its Education Research Grants Programs and the needs of students with disabilities through its Special Education Research Grants Programs. Both the Education Research and the Special Education Research Grants Programs are organized by outcomes (e.g., reading, mathematics), type of education condition (e.g., curriculum and instruction; teacher quality; administration, systems, and policy), grade level, and research goals.

A. Outcomes

The Institute's research grants programs focus on improvement of the following education outcomes: (a) readiness for schooling (pre-reading, pre-writing, early mathematics and science knowledge and skills, and social development); (b) academic outcomes in reading, writing, mathematics, and science; (c) student behavior and social interactions within schools that affect the learning of academic content; (d) academic and functional outcomes, as well as skills that support independent living for students with

significant disabilities; and (e) educational attainment (high school graduation, enrollment in and completion of post-secondary education).

B. Conditions

In general, each of the Institute's research grants programs focuses on a particular type of condition (e.g., curriculum and instruction) that may affect one or more of the outcomes listed previously (e.g., reading). The Institute's research programs are listed below according to the primary condition that is the focus of the program.

a. *Curriculum and instruction*. Several of the Institute's programs focus on the development and evaluation of curricula and instructional approaches. These programs include: (a) Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities, (b) Mathematics and Science Special Education Research, (c) Reading, Writing, and Language Development Special Education Research, (d) Serious Behavior Disorders Special Education Research, (e) Secondary and Transition Services Special Education Research, (f) Autism Spectrum Disorders, and (g) Response to Intervention.

b. *Quality of the education workforce*. A second condition that affects student learning and achievement is the quality of teachers and education leaders (e.g., principals, superintendents). The Institute funds research on how to improve teacher quality through programs such as Quality of Teachers and Other Service Providers for Students with Disabilities.

c. *Administration, systems, and policy*. A third approach to improving student outcomes is to identify systemic changes in the ways in which schools and districts are led, organized, managed, and operated that may be directly or indirectly linked to student outcomes. The Institute takes this approach in programs including (a) Assessment for Accountability, and (b) Individualized Education Programs and Individualized Family Service Plans Special Education Research.

Applicants should be aware that some of the Institute's programs cover multiple conditions. Of the programs listed above, these include (a) Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities, (b) Individualized Education Programs and Individualized Family Service Plans Special Education Research, (c) Secondary and Transition Services Special Education Research, (d) Research Program on the Quality of Teachers and Other Service Providers for Students with Disabilities, (e) Autism Spectrum Disorders, and (f) Response to Intervention.

C. Grade Levels

The Institute's research programs also specify the ages or grade levels covered in the research program. The specific grades vary across research programs and within each research program, and grades may vary across the research goals. In general, the Institute supports research for (a) pre-kindergarten and kindergarten, (b) elementary school, (c) middle school, (d) high school, (e) post-secondary education, (f) vocational education, and (g) adult education. In addition, the Institute supports research on infants with disabilities.

D. Research Goals

The Institute has established five research goals for its research programs. Within each research program one or more of the goals may apply: (a) Goal One – identify existing programs, practices, and policies that may have an impact on student outcomes, and the factors that may mediate or moderate the effects of these programs, practices, and policies; (b) Goal Two – develop programs, practices, and policies that are theoretically and empirically based and obtain preliminary (pilot) data on the relations (associations) between implementation of these programs, practices, or policies and the intended education outcomes; (c) Goal Three – establish the efficacy of fully developed programs, practices, or policies that either have evidence of a positive correlation between implementation of the intervention and education outcomes *or* are widely used but have not been rigorously evaluated; (d) Goal Four – provide evidence on the effectiveness of programs, practices, and policies implemented at scale; and (e) Goal Five – develop or validate data and measurement systems and tools.

For a list of the Institute's FY 2007 research grant topics—including research grant competitions through the Institute's National Center for Special Education Research, National Center for Education Research, and National Center for Education Statistics, please see Table 1 below. Funding announcements for these competitions may be downloaded from the Institute's website at http://ies.ed.gov.

Table 1: FY 2007 Research Grant Topics:

Special Education Research on

1 Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities
2 Individualized Education Programs and Individualized Family Service Plans
3 Mathematics and Science Education
4 Reading, Writing, and Language Development
5 Secondary and Transition Services
6 Serious Behavior Disorders
7 Quality of Teachers and Other Service Providers for Students with Disabilities
8 Autism Spectrum Disorders
9 Response to Intervention
10 Assessment for Accountability

Education Research on

11 Reading and Writing
12 Interventions for Struggling Adolescent and Adult Readers
13 Mathematics and Science Education
14 Teacher Quality – Reading and Writing
15 Teacher Quality – Mathematics and Science Education
16 Education Leadership
17 Education Policy, Finance, and Systems
18 Cognition and Student Learning
19 High School Reform
20 Postsecondary Education

21 Research Training Grants

National Assessment of Education Progress

22 Secondary Analysis of Data from the National Assessment of Educational Progress

PART III RESEARCH GRANT TOPICS

For the Institute's FY 2007 special education research grant programs, there are two sets of topics; one set has a transmittal deadline of July 27, 2006, and the other has a transmittal deadline of November 16, 2006. In this section, the Institute first describes the topics for the July 2006, transmittal deadline, followed by the topics for the November, 2006 transmittal deadline.

3. TOPICS WITH JULY 27, 2007 TRANSMITTAL DEADLINE

A. Early Intervention, Early Childhood, and Assessment for Young Children with Disabilities

a. Purpose. Through its Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities Research Grants Program, the Institute intends to contribute to the improvement of cognitive, linguistic, social, emotional, adaptive, and physical outcomes of infants, toddlers, and young children (from birth through 5) with disabilities or to prevent the development of disabilities by: (a) identifying interventions, curriculum, and instructional practices that are potentially effective for improving cognitive, linguistic, social, emotional, adaptive, and physical needs of infants, toddlers, and young children with disabilities and their families; (b) developing new, or modifying existing, interventions, programs and curricula, including research on appropriate personnel preparation and professional development, to address the cognitive, linguistic, social, emotional, adaptive, and physical needs of infants, toddlers, and young children with disabilities or at risk for disabilities and their families; (c) establishing the efficacy of existing interventions, programs, curricula, personnel preparation, and professional development to address the cognitive, linguistic, social, emotional, adaptive, and physical needs of infants, toddlers, and young children with disabilities or at risk for disabilities and their families; (d) providing evidence on the effectiveness of interventions, programs, curricula, personnel preparation, or professional development that are implemented at scale and designed to address the cognitive, linguistic, social, emotional, adaptive, and physical needs of young children with disabilities or at risk for disabilities and their families; and (e) developing and validating assessment tools that can be used by practitioners to identify, monitor, or assess the progress and outcomes of infants, toddlers, and young children with disabilities or at risk for disabilities and their families or assess the performance of early intervention and early childhood special education practitioners. Interventions appropriate for development and/or evaluations under this program are interventions intended to improve cognitive, linguistic, social, emotional, adaptive, and physical outcomes of children (birth through five) with disabilities or at risk for disabilities. Interventions may be school-based interventions or occur in natural settings (e.g., home-based, child care settings, family focused interventions). The long-term outcome of this program will be an array of tools and strategies (e.g., assessment tools, curricula, programs, services, interventions) that have been documented to be effective for cognitive, linguistic, social, emotional, adaptive, and physical needs of infants, toddlers, and young children with disabilities or at risk for disabilities and their families.

b. Background. Research on early intervention for young children with or at risk for disabilities conducted prior to 1986 (Guralnick, 1988) revealed an unremarkable but important finding: Children and families who received early intervention services and supports were better off than children and families who received essentially no early intervention services and supports. Subsequent research has focused more strategically on the design and implementation of early intervention programs, practices, and techniques for young children with or at risk for disabilities (Guralnick, 1997) and employed more

mature research methodology designed to address a more complex set of questions across a broader array of developmental, familial, social, cognitive, curricular, and pedagogical dimensions. However, as the National Research Council's Committee on Integrating the Science of Early Childhood Development noted, even this research has suffered from important methodological limitations: "…the empirical knowledge base on the efficacy of early childhood intervention is relatively uneven…Most important in this regard is the extent to which a large proportion of studies that address questions of causality have suffered from inappropriate research designs, inadequate analytic approaches, or both…" (Shonkoff & Phillips, 2000, p. 342).

In the context of this limited research base, the Institute is interested in expanding its special education research program on early intervention, early childhood special education, and assessment of infants, toddlers, and young children with disabilities. This program will support the development and evaluation of interventions, programs, and curricula intended to address the cognitive, linguistic, social, emotional, adaptive, and physical needs of infants, toddlers, and young children with disabilities, or at risk for disabilities, and their families. The Institute encourages researchers to modify or adapt existing interventions, programs, or curricula (including family focused interventions) to meet the needs of infants, toddlers, and young children with disabilities, or at risk for disabilities, and their families and support the development of children's school readiness skills. Researchers may consider, for example, what levels of *intensity* (e.g., high intensity includes daily levels of frequent and distributed practice on selected concepts or topics), *specificity* (e.g., highly specified instruction includes explicit teacher scaffolding of verbal support and prompting), or *content emphasis* (e.g., basic language concepts, basic gross and fine motor skills,) are necessary to ensure high threshold levels of progress and performance on a range of cognitive, social, functional or developmental outcome measures. Other questions that require attention include, for example: What is the differential effectiveness of selected intervention programs or models delivered in classroom, home, or other natural settings within or across the full range of infants, toddlers, and young children with or at risk for disabilities on a range of cognitive, language, developmental or social measures at different points in children's growth and development? What features and levels of personnel preparation or professional development (e.g., high and continuous professional development support versus low and incidental professional development support) on what specific pedagogical (e.g., structured and teacher directed vs. unstructured and child-centered), curricular (e.g., vertical coverage vs. horizontal coverage of content), and instructional dimensions (e.g., number of modeled examples; small group vs. 1-to-1), at what points in the year, and for what children are most effective in promoting the high quality implementation of curriculum programs for infants, toddlers, and young children with or at risk for disabilities?

In addition, the Institute encourages researchers to develop and/or validate early screening and progress monitoring instruments that can be used by practitioners to identify and monitor infants, toddlers, and young children who are in need of early intervention. Finally, researchers are encouraged to develop and/or validate outcome measures that can be used not only for measuring infants', toddlers', and young children's development and achievement but also for determining program areas that need improvement and for providing data for Federal accountability purposes.

B. Mathematics and Science Special Education Research

a. Purpose. The Institute intends for the Mathematics and Science Research Grants Program to fulfill five goals: (1) identifying curriculum and instructional practices that are potentially effective for

improving mathematics or science outcomes for students with identified disabilities and students at risk for disabilities, as well as mediators and moderators of the effects of these practices; (2) developing new effective interventions and approaches to mathematics and science education for students with identified disabilities and students at risk for disabilities that will eventually result in improving mathematics and science achievement; (3) establishing the efficacy of existing interventions and approaches to mathematics and science education for students with identified disabilities and students at risk for disabilities; (4) providing evidence on the effectiveness of mathematics and science interventions implemented at scale; and (5) developing and validating assessments of mathematics and science learning for students with identified disabilities and students at risk for disabilities. Mathematics and science interventions may be for students from preschool through high school. The long-term outcome of this program will be an array of tools and strategies (e.g., curricula, programs) that have been demonstrated to be effective for improving mathematics and science learning and achievement.

b. Background. Students with disabilities lag behind their peers without disabilities in both math and science achievement. For example, in the 2003 National Assessment of Educational Progress (NAEP) mathematics assessment, 49 percent of Grade 4 students with disabilities and 20 percent of Grade 4 students without disabilities scored below the basic level. Among Grade 8 students, 71 percent of students with disabilities and 27 percent of students without disabilities scored below the basic level. In the 2000 NAEP science assessment, 65 percent of the Grade 4 students with disabilities and 35 percent of the Grade 4 students without disabilities scored below basic. At Grade 8, 74 percent of the students with disabilities and 38 percent of the students without disabilities scored below basic in the science assessment.

The NAEP results and the findings of the National Research Council (1998) reveal that students with disabilities are not gaining access to the content in mathematics and science when compared with students without disabilities. However, students with disabilities can be taught academic content if provided with appropriate and effective instructional interventions, and research is needed to expand the range of available interventions. Research is also needed to develop assessments of math and science learning for students with disabilities.

Yet, teaching math and science to students with disabilities is complex, because it sits at the intersection of numerous varied systems, each unforgiving in complexity, including, for example: (a) a complex symbolic system (i.e., Arabic numeration system), (b) an all-inclusive administrative system (i.e., preschool, elementary, middle, and high schools), (c) an elaborate expert knowledge system (i.e., teacher knowledge about how to teach math and science skills), (d) a multi-faceted measurement system (i.e., assessing math and science), (e) an intricate neurological and biological system that is naturally invoked in the act of engaging in math and science content (i.e., the human brain), (f) content knowledge comprised of highly specialized information and vocabulary unique to science and mathematics, and (g) a group of learners who have unique instructional design and delivery needs (i.e., students with disabilities or at risk for disabilities).

To improve the math and science skills of students with disabilities and those at risk for disabilities, an ambitious and comprehensive program of research is required to examine the efficacy of interventions, curriculum programs, instructional practices and assessment tools in math and science in the context of these selected systems. Questions to be addressed in this program of research include, for example, what levels of *instructional intensity* (e.g., high intensity includes daily levels of frequent and distributed

practice on specific math skills or science concepts), *specificity* (highly specified instruction includes explicit teacher scaffolding of verbal support and prompting), or *emphasis* (e.g., basic vocabulary, concepts and facts vs. word problem solving activities) are necessary for improving the math and science skills of students with cognitive disability? What are the critical math or science concepts and the particular routines that should be taught and learned, at what particular points in a student's individual growth and development beginning in preschool through high school, for what specific social, developmental, and academic purposes and contexts, and to what criterion levels of performance? Which interventions, strategies, instructional practices are most effective for increasing the math problem solving skills of students with disabilities or at risk for a disability and closing the achievement gap between students with disabilities and their peers?

C. Reading, Writing, and Language Development Special Education Research

a. Purpose. Through its Special Education Reading, Writing, and Language Development Research Grants Program, the Institute intends to contribute to the improvement of reading, writing, and language skills for students with identified disabilities and to prevent the development of disabilities among students at risk for disabilities by (1) identifying curriculum and instructional practices that are potentially effective for improving reading, writing, or language outcomes for students with identified disabilities and students at risk for disabilities as well as mediators and moderators of the effects of these practices; (2) developing interventions for teaching reading, writing, or language skills to students with identified disabilities or students at risk for disabilities; (3) establishing the efficacy of existing interventions and approaches for teaching reading, writing, or language skills to students with identified disabilities or students at risk for disabilities; (4) providing evidence on the effectiveness of reading, writing, or language interventions implemented at scale; and (5) developing and validating reading, writing, or language assessments that can be used in instructional settings. Interventions appropriate for development and/or evaluation under this program are interventions intended to improve reading/pre-reading, writing/pre-writing, or language outcomes of students with disabilities and students at risk for disabilities. Interventions may be for students from kindergarten through grade 12. The long-term outcome of this program will be an array of tools and strategies (e.g., assessments, instructional approaches) that have been documented to be effective for improving reading, writing, or language outcomes for students with identified disabilities and students at risk for disabilities.

b. Background. Students with disabilities do not attain the same performance thresholds as their peers on a range of language, reading, writing, and state outcome measures. For example, the 2005 National Assessment of Educational Progress (NAEP) report indicates that, in fourth grade, 66 percent of students with disabilities who participated scored below basic level in reading achievement in contrast to 33 percent of students without disabilities. Reading below the basic level means that when reading grade appropriate text, these students cannot extract the general meaning of text, make obvious connections between the text and their own experiences, or make simple inferences from the text. In other words, approximately two-thirds of fourth grade students with disabilities who take the NAEP cannot understand what they have read. In writing, a similar picture emerges. The 2002 NAEP writing assessment report indicated that, in fourth grade, 43 percent of students with disabilities who participated scored below the basic level in contrast to 11 percent of students without disabilities. The NAEP results make it very clear that students with disabilities are not gaining comparable access to symbolic systems (e.g., alphabetic writing system) as students without disabilities

Several noteworthy and comprehensive reading research reviews conducted in the last fifteen years (Adams, 1990; National Research Council, 1998; National Reading Panel, 2000) now make conspicuously apparent the role of oral language (e.g., oral vocabulary) in reading and writing. In the early preschool and primary years, oral language "far outstrips written language" (Kamil & Hiebert, 2005). However, written language quickly takes on an increasingly larger role in literacy than does oral language (Kamil & Hiebert, 2005) as children move from "learning to read" to "reading to learn" (Chall, 1983; Kame'enui, Adams, & Lyon, 1990). The demands of unfamiliar language in both oral and written form exact a range of consequences on the productive (speaking or writing) and receptive language knowledge (listening or reading) of students with disabilities.

Equally important is the simple and well-established empirical proposition that students with disabilities can be taught the essential skills for gaining access to words, the world of ideas, and life-long literacy opportunities. Yet, teaching reading, writing, and language skills to students with disabilities is complex, because it sits at the intersection of numerous varied systems, each unforgiving in complexity, including, for example: (a) a complex symbolic system (i.e., alphabetic writing system), (b) an all-inclusive administrative system (i.e., elementary schools), (c) an elaborate expert knowledge system (i.e., teacher knowledge about how to teach reading, writing, and language skills), (d) a multi-faceted measurement system (i.e., assessing reading, writing, and language), (e) an intricate neurological and biological system that is naturally invoked in the act of reading, writing, and language (i.e., the human brain), and (f) a group of learners who have unique instructional design and delivery needs (i.e., students with disabilities or at risk for disabilities).

To improve the reading, writing, and language skills of students with disabilities and those at risk for disabilities, an ambitious and comprehensive program of research is required to examine the efficacy of interventions, curriculum programs, instructional practices and assessment tools in reading, writing, and language in the context of these selected systems. Questions to be addressed in this program of research include, for example, what levels of *instructional intensity* (e.g., high intensity includes daily levels of frequent and distributed practice on specific reading skills), *specificity* (highly specified instruction includes explicit teacher scaffolding of verbal support and prompting), or *emphasis* (e.g. phonics vs. vocabulary instruction) are necessary for improving the reading, writing, or language skills of students with cognitive disability? What are the number of words and the particular words that should be taught and learned, at what particular points in a student's vocabulary growth and reading development beginning in kindergarten through high school, for what specific social and academic purposes and contexts, and to what criterion levels of performance? Which interventions, strategies, instructional practices are most effective for increasing the reading skills of students with disabilities or at risk for a disability that are also English Language Learners? Which interventions, strategies, or instructional practices are most effective for increasing the reading comprehension skills of students with disabilities or at risk for a disability and closing the achievement gap between students with disabilities and their peers?

Through the Reading, Writing, and Language Development Special Education Research Grants Program, the Institute intends to address the range of problems contributing to reading, writing, and language difficulties through the development and evaluation of reading, writing, or language interventions that target the needs of students with identified disabilities and students at risk for developing disabilities and the development and validation of reading, writing, and language assessments for students with disabilities.

D. Serious Behavior Disorders Special Education Research

a. Purpose. The purpose of the Serious Behavior Disorders Research Grants Program is to contribute to the improvement of the behavioral and social skills and concomitantly, the developmental and academic outcomes of infants, toddlers, children and youth with disabilities (hence referred to as "children") by: (a) either identifying interventions that target the behavior and social difficulties of children with disabilities and the conditions that mediate and moderate the effects of such interventions, or identifying practices that have an impact on student discipline or special education referrals for behavior problems and the factors that may mediate or moderate the effects of these practices; (b) developing positive behavioral interventions that target the behavior and social difficulties of children with disabilities; (c) establishing the efficacy of existing positive behavioral interventions that address the behavior and social difficulties of children with disabilities while examining the moderating variables that interact with the intervention; (d) evaluating the effectiveness of positive behavioral interventions implemented at scale and under a variety of conditions; and (e) developing and validating assessment tools and procedures, including the "functional behavioral assessments" stipulated in IDEA [Sec. 615 (k) (1)], for use in home, instructional, and non-instructional settings to identify or diagnose social skill deficits or behavior problems, and to monitor the behavior of children with disabilities. Interventions appropriate for development and/or evaluation under this program are interventions intended to improve social and behavioral outcomes of children with disabilities or children at risk for disabilities. Interventions may be school-based interventions or home-based interventions. School-based interventions should be integrated with a system of positive behavioral support intended to enable children's success in school. The long-term outcome of this program will be an array of tools and strategies (e.g., assessment tools and behavioral interventions) that have been documented to be effective for improving the behavioral and social skills, and likewise, the developmental trajectory and academic performance of children with disabilities ages 0-21.

b. Background. Research on the efficacy of positive behavioral interventions and supports designed to manage, control, and prevent a range of behavior and antisocial problems (e.g., violence toward peers or adults, self-injury, noncompliance, bullying, withdrawal, truancy) in a range of settings (e.g., school, general and special education classrooms, home, work, community) is historically robust (Baer, Wolf, & Risley, 1968; Becker, Madson, Arnold, & Thomas, 1967; Itard, 1962; Safran & Oswald, 2003; Sugai, et al., 2000). The extant research on positive behavioral interventions and support provides practitioners with a reasonable set of tenets derived from applied behavior analysis to guide the selection, application, and extension of positive behavior interventions and supports for students with disabilities, including, for example: (a) the clear and incontrovertible proposition that punishment and exclusion are ineffective when used singularly and in the absence of a proactive positive behavioral support system (Sugai & Horner, 2002); (b) an emerging but steady convergence of empirical support for the proposition that problem behaviors can be reduced with the high quality implementation of explicit and systematic instruction designed and delivered to meet the needs of students with disabilities (Colvin, Kame'enui, & Sugai, 1993; Kame'enui & Darch, 1995); (c) the well established reliance on functional assessment strategies that emphasize ongoing, direct measurement of socially important behavior (Carr, et al., 2002); (d) the comprehensive development, adoption, and promotion of a systemic, proactive approach to managing problem behaviors marking a significant departure from traditional use of aversive, reactive, crisis-response strategies as the primary intervention to problem behaviors (Carr, Robinson, Taylor, & Carlson, 1990). Moreover, there appears to be general agreement among advocates,

policymakers, stakeholders, researchers, and practitioners alike on the importance and need for the development and implementation of a "comprehensive research agenda" that emphasizes prevention of problem behavior and the "development of the emotional and coping competencies that minimize problem behaviors," while also promoting a "commitment to improved quality of life" and the "reduction of dangerous, destructive, and harmful behaviors" (Horner, Dunlap, Beasley et al., in press, p. 5).

Although current research literature appears to provide the field with important and promising guidance on positive behavioral interventions and support, much "mopping up" (Kuhn, 1962) remains to be done in order to understand and advance the application, scalability, and sustainability of a range of behavioral interventions and supports. For example, the gaps in research on positive behavioral interventions and supports for children with disabilities suggest the need for a rigorous, developmental program of research that, for example, documents the nature and essential elements of behavioral interventions and supports that address a range of (a) ages and disabling conditions among children with or at risk of behavior problems, (b) settings (e.g., home, school, community) and contexts (e.g., classroom, school building, playground), (c) demand conditions (e.g., social, familial, academic), and (d) intervention agents. Research funded through this program must account for a range of technically sound criterion performance measures (e.g., developmental milestones, academic achievement outcomes, prosocial behavior outcomes, progress monitoring of academic performance, proactive communication protocols) employing multiple response forms (e.g., choice, production, physical responses) across multiple levels of implementation (e.g., high vs. low implementation models) and tiers of prevention (i.e., primary, secondary, tertiary) with an explicit and systematic focus on evaluating the maintenance and generalization of outcomes to scalable levels and systems (e.g., school-wide vs. district-wide vs. state-wide). In addition, such a program of research must describe patterns of strengths and weaknesses in positive behavioral interventions and supports for selected groups of children with disabilities.

The Institute encourages researchers to consider, for example, what levels of *intervention intensity* (e.g., high intensity includes daily levels of frequent and distributed behavioral interventions in a range of problem contexts), *specificity* (e.g., highly specified behavioral interventions includes explicit and precise delineation of stimulus-response-reinforcing contingencies), or *emphasis* (e.g., developmental or academic objectives and outcomes vs. social objectives/outcomes vs. developmental, academic and social objectives/outcomes) are necessary to ensure high threshold levels of performance on a range of academic, social, behavioral or developmental measures. What components, elements, or "active ingredients" of positive behavioral intervention and supports when implemented as part of a comprehensive system of prevention (e.g., primary, secondary, tertiary) in a range of complex but typical settings (e.g., home, school) by a variety of intervention agents are experimentally linked to enhancing, promoting, and sustaining positive social and academic outcomes for school-aged students with disabilities? How can functional behavioral assessments be designed, conducted and used to develop and monitor the effectiveness of positive behavioral interventions? What are appropriate positive behavioral interventions for infants and what are the conditions for their use? What are the critical social skills that function as mediators or moderators for negative in-school outcomes such as disciplinary actions, restrictive placement decisions, or grade retention? How can these skills best be taught in school?

E. Assessment for Accountability

a. Purpose. Through its program of Special Education Research on Assessment for Accountability, the Institute intends to address questions of how assessments for accountability can best be designed and used to capture and represent proficiency and growth for children with disabilities. The long-term outcome of this program will be an array of assessment instruments, tools, programs, practices, and systems for accountability that are documented to be reliable and valid for students with disabilities.

For the FY 2007 Special Education Research Grants Program on Assessment for Accountability, applicants must submit under Goal Five, "Measurement" and must focus on outcome assessments used for large-scale accountability purposes, such as meeting the assessment and accountability requirements of NCLB. Research projects on assessments used for other purposes to the exclusion of accountability (e.g. screening, identification and placement, diagnosis) are not eligible for funding under this program. Research on assessments to monitor student progress toward proficiency on state accountability tests may be funded, provided there is a clear link to academic standards and assessments for accountability and outcome goals.

Intervention research using accountability assessments as outcome measures, or research intended to demonstrate improved performance on outcome assessments is not eligible for funding under this program, unless there is a clear and methodologically sound design for studying and/or improving the valid use of assessments for accountability with students with disabilities.

Applicants may propose to: (a) develop and validate new regular or alternate assessments, (b) modify and validate existing regular or alternate assessments, (c) determine the effects on the reliability and validity of different test accommodations for students with disabilities, (d) determine the validity of accountability assessments for students with disabilities, (e) investigate approaches for designing accountability assessments to be more accessible to students with disabilities, or (f) conduct other activities relevant to the purposes of this program.

Applications that focus on development, refinement or validation of a specific state assessment program are not appropriate for this competition unless the findings have clear and compelling benefits for other states. Other federal and state funds may be available to support individual states in enhancing or improving their state assessments, and the purpose of the Special Education Research Grants Program on Assessment for Accountability is to support research and innovation of general relevance and benefit.

The Institute is also interested in applications to conduct research on the use of individual student growth models for accountability purposes with students with disabilities. The Institute is particularly interested in research related to inclusion of students with disabilities in growth models that might be used for NCLB accountability.

b. Background. Recent educational policies emphasize high expectations and accountability for results for all students, including students with disabilities. Special education programs that are based on individualized services to meet unique student needs must now provide these services within a framework of challenging general education standards and expectations. For school-aged children, this process is largely governed by the statutes and regulations of the No Child Left Behind Act (NCLB) and the Individuals with Disabilities Education Act (IDEA). Given the range of individual student needs,

these laws and regulations provide a variety of options for students with disabilities to participate in assessments for accountability. Students with disabilities can participate in regular assessments, with or without accommodations, in alternate assessments based on grade-level achievement standards, alternate assessments based on alternate achievement standards for students with the most significant cognitive disabilities, and (pending the finalization of recently-proposed regulations) in assessments based on modified achievement standards.

For preschool children with disabilities, birth through age five, there is no consistent structure for assessments and accountability that parallels the system NCLB requires for school-aged children. However, there is a recognized need to hold preschool programs for children with disabilities accountable for results and to maintain challenging standards and expectations.

Research is needed to determine the best programs, practices, instruments, tools, and systems for using assessments for accountability with students with disabilities. Historically, research on this topic has focused on assessment accommodations and alternate assessments, two approaches that are mentioned specifically in federal statutes.

Research on accommodations has studied such topics as the effects of assessment accommodations on validity, the selection of appropriate accommodations for individual students with disabilities, and logistical factors in the delivery of accommodations. This research has produced significant findings, such as the importance of preparing teachers to select appropriate accommodations, the need for safeguards to ensure that the correct accommodations are delivered in an appropriate manner, and specific techniques for guiding the selection of accommodations (Shriner & DeStefano, 2003; Fuchs, Fuchs, Eaton, Hamlett, Binkley, & Crouch 2000; Clapper, Morse, Thompson, & Thurlow, M. L., 2005). However, there have been relatively few conclusive findings on the effects of accommodations on validity (Hollenbeck, 2005; Sireci, Scarpati, & Shuhong, 2005).

Recent efforts have focused on developing assessments that are more accessible for students with disabilities, thus minimizing the need for accommodations and reducing validity threats when accommodations are used (Thompson, Johnstone, & Thurlow, 2002). Two National Accessible Reading Assessment Projects (NARAP) are currently conducting research on accessible reading assessments. Information on these projects is available on their website (http://www.narap.info).

Research on alternate assessments has focused on a variety of issues such as the development of assessment techniques for students who present special assessment challenges, the reliability and validity of alternate assessments, the alignment of alternate assessments with regular academic content standards through the mechanism of alternate achievement standards, and the effects of alternate assessments on students' access to and progress in the general curriculum. This research has uncovered a number of challenges. For example, there is a general absence of information on the technical quality of alternate assessments; alignment with regular academic standards is undocumented and inconsistent, and the benefits of alternate assessments have not been established (Browder, Spooner, Algozzine, Ahlgrim-Delzell, Flowers, & Karvonen, 2003). However, current research is developing approaches for ensuring and documenting technical quality and alignment. For example, the National Alternate Assessment Center (NAAC) is conducting a program of research on these issues and information is available on its website (http://naacpartners.org).

Recently proposed federal regulations have introduced a new variation on accountability assessments for students with disabilities, namely assessments based on modified achievement standards. Depending on the final form these regulations take, research will be needed on a variety of topics. If final regulations are published in time, applicants for the FY 2007 Special Education Research Grants Program on Assessment for Accountability may propose research on assessments based on modified achievement standards.

The U. S. Department of Education has announced a program whereby a limited number of qualified states may develop and pilot growth-based accountability models for use in determining AYP. Growth models give schools accountability credit for student improvement over time, but must conform to the basic provisions of the No Child Left Behind Act. Growth models hold particular promise for students with disabilities, but considerable research is needed on such topics as methods for establishing growth standards, vertical scaling, analyzing and interpreting growth data, validating growth models, aligning individual growth models with standards and accountability, maintaining technical adequacy for individual or system accountability, etc.

4. TOPICS WITH NOVEMBER 16, 2006 TRANSMITTAL DEADLINE

A. Individualized Education Programs and Individualized Family Service Plans

a. Purpose. Through its program of Special Education Research on Individualized Education Programs and Individualized Family Service Plans (IEP/IFSP Research), the Institute intends to contribute to the improvement of education for infants, toddlers, children, and students with disabilities by (1) identifying practices, programs, or systems designed to improve the creation, implementation, and monitoring of appropriate and effective individualized education programs (IEPs) and individualized family service plans (IFSPs) for infants, toddlers, children, and students with disabilities; (2) developing practices, programs, or systems designed to enhance the abilities of education practitioners, administrators, and service providers to create, implement, and monitor appropriate and effective IEPs and IFSPs for infants, toddlers, children, and students with disabilities (3) determining the efficacy of practices, programs, or systems designed to improve the use of IEPs and IFSPs through efficacy or replication trials; and (4) providing evidence on the effectiveness of practices, programs, or systems designed to improve the use of IEPs and IFSPs when implemented at scale. The long-term outcome of this program will be an array of programs, practices, and systems that have been documented to be effective for providing services for infants, toddlers, and children in natural environments (including the home) and community settings in which children without disabilities participate as well as ensuring that students with disabilities access, participate in, and progress in the general education curriculum in the least restrictive environment.

For the purpose of this research program, an "individualized education program" is defined and fully specified in Part B, Section 614(d) of the "Individuals with Disabilities Education Act," and an "individualized family service plan" is defined and fully specified in Part C, Section 636 of the "Individuals with Disabilities Education Act."

b. Background. The Individuals with Disabilities Education Act requires that IEPs and IFSPs be developed by education practitioners and service providers, in collaboration with parents (and older students), for each infant, toddler, child, or student with a disability in order to meet the child's unique

needs, or, in the case of an IFSP, the child and family's unique needs. IEPs and IFSPs are viewed as the foundation for ensuring that the particular needs of infants, toddlers, children, and students with disabilities who require special education or early intervention services are met in the classroom (for IEPs) or natural settings (for IFSPs) through a range of evidence-based instructional, curricular, social, and behavioral strategies, interventions, and programs. While the concept of IEPs and IFSPs is simple and straightforward – to ensure that infants', toddlers'; children's, students' and families' (for IFSPs) unique needs are met on a daily basis -- the development and implementation of appropriate and meaningful IEPs and IFSPs for infants, toddlers, children, and students with disabilities in classrooms, schools, and natural settings are extraordinarily complex. Meaningful IEPs are based on (a) accurate assessments of the child's present levels of academic achievement and functional performance; (b) measurable academic and functional goals that are linked to state and local academic standards; (c) clear descriptions of how and when the child's progress toward meeting the annual goals will be measured; and (d) an informed understanding, based on the best available information, of the special education and related services and supplementary aids that will enable the child to reach those goals. IFSPs contain content similar to that of IEPs; however, they includes statements regarding: (a) the infant or toddler's present levels of development in multiple domains; (b) the family's resources, priorities, and concerns related to enhancing the development of the infant or toddler; (c) measurable results and outcomes for the infant or toddler and his or her family; (d) the features of the natural environments in which services will be provided; (e) timelines for providing services; (f) the identification of the service coordinator; and (g) steps to support transition to preschool or other appropriate services. Given the complexity of IEP and IFSP content, the full range of disabilities and developmental delays, and the unique needs of each child and/or family, the enormity of the task faced by IEP and IFSP teams is clear.

Although the challenges to the development, implementation, and evaluation of appropriate and effective IEPs and IFSPs for infants, toddlers, children, and students with disabilities are substantial, the research base to support the development and implementation of IEPs and IFSPs is relatively thin. It is in this context that the Institute has launched its IEP/IFSP Research program. The Institute encourages proposals to develop and evaluate practices, programs, or systems to improve IEP and IFSP development, implementation, and evaluation; include meaningful family and student involvement in this process; and facilitate collaboration among school leadership and personnel (e.g., general educators, special educators, school psychologists, etc.). For example, applicants might consider professional development that focuses on assessment, curriculum and service planning, intervention strategies, and goal setting that target specific disabilities and developmental delays, promote skill acquisition, and bring to bear the best evidence in these areas. Such professional development might address issues such as: (a) the type of instruction and interventions required to meet the infant's, toddler's, child's, or student's unique needs and ensure that services to infants, toddlers, and children are provided natural environments and community settings and that students with disabilities access and participate and progress in the general education curriculum in the least restrictive environment; (b) strategies for addressing specific academic and functional goals that are linked to state and local academic standards; and (c) the frequency with which progress should be monitored. In-service training might also help members of the IEP or IFSP team to better understand research on intervention, the current research literature on a targeted disability, and the unique needs of the infant, toddler, child, or student and his or her family. In addition, applicants might develop and test systems for managing and monitoring the IEP and IFSP processes. Such systems might include (a) strategies for improving the decision-making process in the development and specification of components of the IFSP or IEP, including standards-based or standards-referenced goals; (b) approaches for promoting the active and meaningful

engagement of parents in the development and implementation of IEPs and IFSPs; and (c) ways to assess the fidelity of the implementation of the IEP or IFSP. Applicants might examine the extent to which frequent monitoring of infant, toddler, child or student progress (e.g., once a week, twice a month) and the reporting of results to parents or guardians on an equally frequent basis improves performance and progress on state outcome measures and the overall development and validation of the IEP and IFSP.

The Institute also encourages proposals to develop and validate templates for IEPs and IFSPs that are appropriate for specific disabilities and developmental delays yet flexible for individualizing the IEP or IFSP according to the unique needs of each infant, toddler, child, or student with a disability. The templates would provide prototypical IEPs and IFSPs for infants, toddlers, children, and students with specific disabilities or developmental delays and who test within a specified range on relevant assessments. For example, a template for a third grade student with a learning disability who is greater than 2 years behind grade level standards in reading may identify: (a) appropriate goals, including those that are tied to state achievement standards under No Child Left Behind, and from which users could select those most relevant to the target child, (b) short-term objectives or benchmarks for each goal, including suggestions for measures for monitoring progress and for the timing and frequency of such assessments, and (c) strategies or services for enabling the child to reach each goal, including suggestions for how those services will be provided (e.g., settings in which such services could be provided). The goal would be to provide IEP and IFSP teams with clear guidelines that are based on the most current special education and early intervention research and that would serve as the foundation for developing tailored IEPs and IFSPs for individual children.

For all interventions, applicants should bear in mind that the ultimate purpose is to determine whether or not implementation of the intervention leads to improved infant, toddler, child, and student outcomes.

B. Secondary and Transition Services

a. Purpose. The overarching purpose of the Special Education Research Grants Program on Secondary and Transition Services is to contribute to the improvement of secondary and transition programs and outcomes for secondary (middle school and high school) students with disabilities. These outcomes include the behavioral, social, communicative, functional, occupational, and academic skills that enable young adults with disabilities to obtain and hold meaningful employment, live independently, and obtain further education and training. Through the Secondary and Transition Services Research Grants Program, the Institute intends to support research to: (a) identify curricula, instructional approaches, transition services, programs, or systems that are potentially effective for improving the academic or functional skills of students with disabilities in secondary (middle school and high school) settings as well as mediators and moderators of the effects of these practices; (b) develop interventions that improve the education and transition outcomes of students with disabilities in secondary settings; (c) establish the efficacy of existing interventions for improving the education and transition outcomes of students with disabilities in secondary settings; (d) provide evidence on the effectiveness of interventions for improving the education and transition outcomes of students with disabilities in secondary settings; and (e) develop and validate measures that assess skills predictive of successful education and transition outcomes for students with disabilities in secondary settings. Interventions appropriate for research under this program are secondary-school-based interventions and home-based or community-based interventions that are integrated and intended to support adolescents' abilities to

hold competitive employment, obtain further education and training, and successfully transition to independent living. The long-term outcome of this program will be an array of tools and strategies (e.g., intervention programs, strategies, approaches) that have been documented to be effective in improving the secondary education and transition outcomes for students with disabilities.

b. Background. Education practitioners and policymakers face considerable challenges in improving secondary and transition outcomes for students with disabilities. According to recent reports from the National Longitudinal Transition Study-2 (Wagner, Marder, et al., 2003; Wagner, Newman, et al., 2005), a study of a nationally representative sample of adolescents with disabilities, students' grade-level equivalent performance on standardized achievement tests was on average about 3.6 years behind grade level in reading and mathematics. Among those individuals who were no longer in school, about 28 percent had dropped out prior to receiving a diploma. In addition, a significant minority experienced social and behavioral problems (e.g., about 17 percent were reported to have difficulty controlling their behavior in class; about 13 percent had been arrested). In the first years after high school, individuals with disabilities were much less likely to attend postsecondary education than were individuals without disabilities. About 21 percent of youth with disabilities were not engaged in their community either through postsecondary education, job training, or work in the first years after high school.

The Institute's Secondary and Transition Services Research Grants Program is intended to address the challenges for improving the secondary and transition outcomes of students with disabilities. This program of research includes research targeted in middle and high schools designed to determine the effectiveness of education interventions or programs for students with disabilities as well as efforts to support and promote the effective transition from high school to the world of work, independent living, and further education and training. Within middle and high schools, the Institute is interested in research that addresses topics such as, but not limited to (a) the use of assistive, electronic, and information technologies to improve instruction; (b) the design and implementation of differentiated instruction; and (c) the adoption and implementation of secondary education curricula and materials that feature universal designs and architectures which permit meaningful access to the rigorous and challenging academic and vocational content. Within the topic of transitions, the Institute is interested in research that addresses topics such as, but not limited to (a) the development and evaluation of secondary-school-based interventions that promote functional skills that would allow young adults with disabilities to obtain and hold jobs and to live independently; (b) systemic interventions to improve transitions for students with disabilities that increase collaboration between school and community agencies, provide professional development for both, and implement a range of strategies to facilitate the transition for youth with disabilities to the world of work or to post-secondary education and training; (c) the development and evaluation of effective community-based programs that promote daily living and employment skills for students with disabilities; and (d) the development and validation of measures of social, behavioral, functional, and cognitive skills that are predictive of successful post-secondary transitions for secondary students with disabilities. Of particular interest is the study of effective transition strategies and programs for low incidence disabilities, as well as the explicit focus on transition as a goal for high incidence disabilities.

C. Quality of Teachers and Other Service Providers for Students with Disabilities

a. Purpose. The general purpose of the Research Grants Program on the Quality of Teachers and Other Service Providers for Students with Disabilities is to identify effective strategies for preparing future

teachers and other service providers of students with disabilities, or for improving the performance of current teachers and service providers of students with disabilities, in ways that increase student learning and school achievement. In this Request for Applications, the term *personnel preparation* refers to pre-service training, and the term *professional development* refers to in-service training. Teachers and other service providers include special education teachers, regular education teachers who work with students with disabilities, and related service providers. Applicants proposing research on personnel preparation or professional development for early interventionists or preschool personnel working with children with disabilities aged birth through 5 should apply under the Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities topic.

For the purposes of this grant competition, related services are as defined in IDEA as "transportation, and such developmental, corrective, and other supportive services (including speech-language pathology and audiology services, interpreting services, psychological services, physical and occupational therapy, recreation, including therapeutic recreation, social work services, school nurse services designed to enable a child with a disability to receive a free appropriate public education as described in the individualized education program of the child, counseling services, including rehabilitation counseling, orientation and mobility services, and medical services, except that such medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a child with a disability to benefit from special education, and includes the early identification and assessment of disabling conditions in children. The term does not include a medical device that is surgically implanted, or the replacement of such device." (Part A, Sec. 602). (Adaptive physical education is considered a special education service and not a related service under IDEA.)

The Institute intends for the Research Grants Program on the Quality of Teachers and Other Service Providers for Students with Disabilities to fulfill five goals: (a) identifying programs and practices for personnel preparation or professional development that are potentially effective for improving learning and school achievement of students with disabilities, as well as mediators and moderators of the effects of these programs and practices; (b) developing new effective programs and practices for personnel preparation or professional development that will improve professional practices and thereby improve student learning and achievement for students with disabilities; (c) establishing the efficacy of programs and practices for personnel preparation or professional development for improving professional practices and thereby improving student learning and achievement for students with disabilities; (d) providing evidence of the effectiveness of personnel preparation or professional development programs that are implemented at scale and intended for improving professional practices and thereby improving student learning and achievement for students with disabilities; and (e) developing and validating new assessments, or validating existing assessments of the quality of teachers and other service providers for students with disabilities.

Long term outcomes of the Research Grants Program on the Quality of Teachers and Other Service Providers for Students with Disabilities will be an array of tools and strategies (e.g., pre-service and in-service programs, policies, assessments) that have been demonstrated to be effective for improving and assessing the performance of special education teachers, regular education teachers who work with students with disabilities, and other service providers in ways that are linked to increases in academic achievement for students with disabilities.

b. Background. The Institute's Research Grants Program on the Quality of Teachers and Other Service Providers for Students with Disabilities is intended to improve the learning and achievement of students with disabilities by improving the knowledge and skills of the professionals who work with them. Students with disabilities are served by professionals from a wide range of disciplines, including special educators, regular educators, and related service providers. The roles of these professionals in serving students with disabilities are challenging and frequently reshaped by changes in policies, new research findings, and shifts in student populations.

Special educators must now help prepare students with disabilities to attain challenging academic standards and succeed in the general curriculum, as well as to make successful transitions to adult life. The increased expectations for students have likewise increased the expectations for special educators, but special educators are not alone in facing these challenges. Most students with disabilities (approximately 96%) attend regular schools; around 75% of these students spend 40% or more of their time in regular classrooms, and almost half are in regular classrooms for most or all of the school day (U.S. Department of Education, 2003). Despite the important role of regular educators, a national survey of teachers in regular public schools (U.S. Department of Education, 2001) found that only 32 percent of teachers whose classes included students with disabilities felt very well prepared to address the needs of students with disabilities. Related services professionals also play a key role in the learning and achievement of students with disabilities, and the expectations placed upon them vary widely in content and scope. For example, a recent study found that 40% or more of the schools reported providing one or more of the following services to students with disabilities: speech or language therapy, occupational therapy; family training, counseling and other support; nursing service/health service; psychological service; physical therapy; special transportation; social work services; one-to-one paraeducator/assistant; assistive technology service/device; tutoring; adaptive physical education; and service coordination/case management (U.S. Department of Education, 2003).

Research is needed to determine the most effective preservice and inservice strategies for preparing, equipping, and mobilizing professionals to meet the needs of students with disabilities, including rigorous research evidence to determine *what content* should be delivered, and *how to deliver* the content in order to improve learning and achievement of students with disabilities. Also needed is research evidence on *how to assess* the appropriate professional knowledge and skills that are predictive of student achievement.

(i) *What the content should be.* A major criticism of current personnel preparation and professional development programs is that many of their required courses do not teach practices and strategies that are evidence-based and link to state academic standards. Another criticism is that content and pedagogy taught in required courses are inadequate, in that content courses do not prepare future professionals how to teach specific content, and pedagogy courses typically focus on generic, rather than content-specific instructional strategies. The Institute is interested in examining personnel preparation and professional development programs that are designed to develop different types of knowledge and skills. These include, but are not limited to, programs designed to develop knowledge about teaching a specific academic content area (e.g., mathematics, reading) to students with disabilities, and programs designed around a specific, evidence-based curriculum or program, where the intent is to provide teachers with specific skills, strategies, and perhaps lesson plans for delivering this specific program.

(ii) *How content should be delivered.* We have little reliable evidence about how to improve personnel preparation and professional development programs; how to appropriately balance content, pedagogy, and clinical training experiences; who should deliver the content or courses (e.g., discipline-based departments, like mathematics, or departments of teacher education); and what the most effective delivery vehicles are for building, promoting, enhancing, and sustaining the capacity of personnel preparation and professional development that has a reliable impact on improving student achievement (e.g. collaborative teaching and co-teaching). Furthermore, it is unclear if certain programs of preparation (e.g., separate or discrete general education and special education programs, dual programs, merged programs) produce teacher candidates that are not only highly qualified under NCLB, but are also effective at increasing academic outcomes for students with disabilities. Similarly, although experts commonly believe that most current professional development offerings are not very effective, very little reliable research exists that allows for clear causal interpretations of the impact of specific professional development programs on student achievement, or for knowing which elements of professional development programs (e.g., mentoring or coaching) are critical or relatively more important than others.

(iii) *How teacher knowledge should be assessed.* Also needed is reliable research to guide the development of practical assessments of content, pedagogical, or clinical knowledge and skills, and research to validate these assessments (or existing assessments) against measures of student learning and achievement. Understanding which skills and knowledge make a teacher or other service provider effective and methods for identifying potential practitioners who have these skills and knowledge is critical to developing a highly qualified professional workforce.

Ideally such assessments would not only predict student learning and achievement but also be practical and cost-effective to administer. Although some existing tests of pedagogical knowledge and subject matter knowledge have been correlated with the test takers' SAT or ACT scores (e.g., Gitomer, Latham, & Ziomek, 1999), validation of existing tests against measures of student learning and achievement remains to be accomplished. Hence, the Institute is interested in proposals to validate existing assessments against measures of student learning and achievement, as well as proposals to develop and validate new measures.

D. Autism Spectrum Disorders

a. Purpose. The purpose of the Autism Spectrum Disorders Research Grants Program is to contribute to the improvement of cognitive, communicative, academic, social, and behavioral outcomes of children identified with autism spectrum disorder (ASD) in preschool through middle school by (a) identifying comprehensive pre-school and school-based interventions that improve cognitive, communicative, academic, social, and behavioral outcomes of children identified with ASD in preschool through middle school and the factors that mediate and moderate the effects of such interventions; (b) developing new, or modifying existing comprehensive pre-school and school-based interventions to address the cognitive, communicative, academic, social, and behavioral needs of children identified with ASD in preschool through middle school; (c) establishing the efficacy of existing comprehensive pre-school and school-based interventions for children identified with ASD in preschool through middle school; and (d) developing and validating measures in cognitive, communicative, academic, social, and behavioral skills that can be used in instructional and non-instructional settings to monitor progress and evaluate outcomes for children identified with ASD in preschool through middle school.

Interventions appropriate for development and/or evaluation under this program are comprehensive pre-school and school-based interventions intended to improve the cognitive, communicative, academic, social, and behavioral outcomes of children identified with ASD in preschool through middle school. Interventions appropriate for research under this research program are comprehensive pre-school and school-based interventions and home-based or clinic-based interventions that are integrated with comprehensive pre-school and school-based interventions and intended to enable and promote children's success in academic and non-academic settings. The long-term outcome of this program will be an array of tools and strategies (e.g., intervention programs, strategies, approaches) that have been documented to be effective for improving the cognitive, communicative, academic, social, and behavioral needs of children identified with ASD in preschool through middle school.

b. Background. The prevalence rate of children identified with an ASD has increased dramatically over the last decade. In 1992, approximately 15,302 children between the ages of 6 and 21 were identified with autism. In 2004, approximately 165,662 children between the ages of 6 and 21 were identified with autism (U.S Department of Education, n.d.). The unprecedented increase in reported incidence rates within the past decade has created an extraordinary demand on schools to provide interventions that meet the unique educational needs of children identified with ASD. However, the highly variable cognitive and behavioral phenotype associated with ASD creates a significant challenge in developing and implementing effective interventions in a pre-school and school-based setting. For example, research has demonstrated that children identified with ASD have markedly different outcomes and response profiles to different intervention programs (Bryson, Rogers, & Fombonne, 2003; Lord & McGee, 2001; Sherer & Schreibman, 2005). To date, there is not a clear understanding of how child, family, and other environmental variables mediate and moderate the effects of an intervention. Such information is critical in order to "match" a child to an appropriate and effective intervention designed to maximize a child's academic and functional outcomes. To add to the complexity of developing and implementing interventions to address the unique needs associated with ASD, secondary diagnoses are usually present such as mental retardation or a speech and language disability.

Components of an intervention that facilitate the development of skills in children identified with ASD (e.g., opportunities to interact with peers without disabilities to promote social learning) have advanced over the last decade, yet a significant amount of work remains. From the extant research literature, several conclusions can be drawn about interventions for children identified with ASD. First, interventions have not been rigorously evaluated (Bryson et al., 2003; Lord & McGee, 2001; Wolery, 2000; Volkmar, Lord, Bailey, Schultz, & Klin, 2004). Methodological issues such as ambiguous inclusion and exclusion criteria, lack of outcome measures for generalized treatment effects, and inadequate information regarding fidelity of implementation have made prior intervention studies difficult to evaluate, replicate, and synthesize. Therefore, it is difficult to determine from the existing research what intervention works for whom, at what levels of intensity, for how long, and under what kinds of instructional or organizational conditions. Second, despite the methodological issues with prior research, there is consensus among experts that intervention programs implemented as early as possible can lead to significantly improved outcomes, both short and long term, in a variety of academic and functional domains (Bryson et al., 2003; Dawson, & Osterling, 1997; Lord & McGee, 2001; Volkmar et al., 2004). Third, the effectiveness of a particular intervention cannot be ascribed to a particular pedagogical or theoretical perspective or orientation. Rather, effective intervention programs all appear to have common "key" elements, such as standardized curriculum, transition planning, and highly supportive teaching environments with generalization strategies (Dawson, & Osterling, 1997; Lord &

McGee, 2001; Sherer & Schreibman, 2005; Volkmar et al., 2004). However, further research is needed to identify, define, and evaluate these "key" elements across development of children with ASD. Finally, and perhaps most critical, is that many interventions that have demonstrated promise in improving outcomes for children with ASD have been developed and implemented in specialized settings. It is not known whether such interventions can be translated and demonstrate similar improved outcomes for children with ASD in a non-specialized setting (e.g., public school).

In the context of this limited research base, the Institute initiates its ASD Special Education Research Grants Program. This program will support the development and evaluation of comprehensive school-based interventions intended to address the cognitive, communicative, academic, social, and behavioral needs of children identified with ASD in preschool through middle school. The Institute encourages researchers to develop or adapt existing interventions to meet the needs of children identified with ASD in preschool through middle school. Researchers may consider, for example, what levels of *intensity* (e.g., number of functional and developmentally relevant opportunities for active response), *specificity* (e.g., highly specified instruction includes explicit teacher scaffolding of support and prompting), or *emphasis* (e.g., academic outcomes vs. academic/functional outcomes) are necessary to ensure high threshold levels of performance on a range of cognitive, academic, social, behavioral, or developmental outcome measures. Other questions that require attention include, for example: What child (e.g., developmental age, language skills), family (e.g., perceived support), and/or environmental (e.g., structured, natural) variables mediate and moderate an intervention? What are the key components or elements of an intervention program in a range of complex but typical settings (e.g., home, school) that are experimentally linked to enhancing, promoting, and sustaining functional and academic outcomes for children with ASD? In addition, the Institute encourages researchers to develop and/or validate cognitive, communicative, academic, social, and behavioral measures or measurement systems designed to monitor progress and/or evaluate outcomes, particularly generalization and maintenance, for children identified with ASD in preschool through middle school.

E. Response to Intervention

a. Purpose. The purpose of the Response to Intervention (RTI) Research Grants Program is to contribute to the improvement of instruction for students with disabilities and to the prevention of inappropriate identification of specific learning disabilities by: (1) identifying RTI practices, programs, or systems that are potentially effective for improving instruction for students with disabilities and preventing the inappropriate identification of students with specific learning disabilities as well as mediators and moderators of the effects of these practices, programs, or systems; (2) developing RTI practices, programs, or systems for improving instruction for students with disabilities and preventing the inappropriate identification of students with specific learning disabilities; (3) determining the efficacy of RTI practices, programs, or systems designed to improve instruction for students with disabilities and prevent the inappropriate identification of students with specific learning disabilities through efficacy or replication trials; (4) providing evidence on the effectiveness of RTI practices, programs, or systems designed to improve instruction for students with disabilities and prevent the inappropriate identification of students with specific learning disabilities when implemented at scale; and (5) developing and validating RTI assessment tools and procedures that can be used to evaluate instruction, measure student initial and ongoing performance and progress, and accurately identify students eligible for special education. Proposed practices, programs, and systems may involve students from preschool (ages 3-5) through high school. The long-term outcome of this program will be an array

of RTI practices, programs, and systems that have been documented to improve instruction for students with disabilities and to prevent the inappropriate identification of students with specific learning disabilities.

b. Background. Recent Federal initiatives, such as the President's Commission on Excellence in Special Education report and the Office of Special Education Programs' (OSEP) Learning Disabilities Initiative, have articulated the growing dissatisfaction with the ability-achievement discrepancy method for identifying students with specific learning disabilities and have recommended the use of a Response to Intervention (RTI) approach. Moreover, the recent reauthorization of the Individuals with Disabilities Education Act (IDEA, 2004) contains authority that allows local education agencies to discontinue use of the ability-achievement discrepancy method and to use RTI as part of the evaluation procedure for identifying students with specific learning disabilities [PL 108-446, Part B, Sec 614(b)(6)(b)]. In contrast to the ability-achievement discrepancy method, RTI has the potential to (1) identify students with specific learning disabilities earlier and more reliably, (2) reduce the number of students who are referred inappropriately to special education, and (3) reduce the overidentification of minority students placed in special education (National Joint Committee on Learning Disabilities, 2005).

RTI holds significant promise when it is conceptualized as a multi-tiered (typically three-tiers) systems approach that integrates general and special education. The tiers are typically designed to improve instruction for all students in the classroom and provide interventions and supports to students who are struggling in schools. In recognition of prevention goals and priorities to promote the health, education, and well being of children, Caplan and Grunebaum (1967) first advanced the formulation of levels of prevention by differentiating between primary, secondary, and tertiary levels of prevention (Simeonsson, 1994). When adapted and applied to children's well being in school systems and the prevention of school failure, Tier 1, primary level, is conceived of as including a scientifically based core curriculum that is provided to all students in general education. It also involves an initial screening of academic skills and ongoing progress monitoring of all students to determine whether students are reaching critical benchmarks that are predictive of future success in a particular domain and whether instructional modifications are needed. Tier II, secondary level, is designed to addresses the needs of students who are not making adequate progress in the general education classroom but are experiencing some success, as indicated through frequent (i.e., weekly or biweekly) progress monitoring, and require more targeted and differentiated supplemental instruction and support that enhance the Tier 1 core curriculum. Tier III, tertiary level, targets individual students who require intervention that is more intensive than the support provided in Tier II (i.e., more opportunities to respond that may require small group instruction outside of the classroom, often 5 days per week). In addition to reducing the number of new cases (incidence) of students with specific learning disabilities, the multi-tiered model reduces the duration (prevalence) of and complications associated with existing cases (Simeonsson, 1994).

Despite the preference for RTI, the empirical research to support its application to district and school practices and systems is very limited, particularly in areas other than beginning reading. Therefore, many questions concerning the application of RTI in a three-tiered systems model at the classroom, school building, and district levels including key issues regarding its operationalization and implementation require a systematic program of research. It is in this context that the Institute launches its' RTI Special Education Research Grants Program. The Institute encourages applicants to consider which features of instruction are most effective for improving students' learning trajectories and determining whether a student is unresponsive and requires further evaluation. Examples of

instructional features include the systematic and experimental application of RTI: (a) across the full range of school curricula and content areas at the preschool, primary, elementary and secondary schooling levels; (b) in which empirically established interventions are implemented with high fidelity in various combinations under a range of task and performance conditions within a three-tiered framework across the full range of grade levels or age groups; (c) across all levels of *instructional intensity*, *frequency*, and *duration (e.g., high, moderate, or low levels of intensity, frequency, and duration in the presentation of stimuli and opportunities to respond within fixed or varied amounts of instructional time)*; and (d) across a range of measures designed for initial screening and progress monitoring.

Additionally, applicants may wish to conduct research on the implementation of RTI as a system at the district and/or school levels that invokes a range of variables (e.g., administration, management, accountability systems). In particular, applicants may wish to examine the district and/or school's approach to (a) allocating resources aligned with a three-tier system and prioritized according to student outcomes and results; (b) defining district or school leadership and personnel (e.g., general educators, special educators, school psychologists) roles and facilitating collaboration, communication, and cooperation among staff within an RTI system; (c) providing ongoing staff support and effective professional development opportunities as defined within a three-tiered system; (d) integrating general and special education that permits the clear delivery of services to meet well-defined instructional goals and objectives; (e) defining flexibility of the tiers that enhances student performance and efficient use of resources; and (f) establishing procedures for implementing fluid and successful movement across tiers, grade levels, and schools.

Finally, the Institute encourages applicants to conduct research on measures that assess the fidelity of implementation of tiers of instruction or intervention and the RTI system as a whole. In addition, applicants may wish to conduct longitudinal research on measurement strategies that, when utilized within an RTI framework, accurately predict students' risk for specific learning disabilities. Applicants may wish to give special attention to how the accuracy of risk prediction is affected by (a) the assessment approaches (i.e., static, dynamic, progress monitoring) or combination of assessment approaches implemented within a classroom or school; (b) the measures administered and skills assessed within a specified domain at particular grade levels and times of the school year; and (c) decision rules for defining cut-scores and statistical techniques for analyzing student performance data that determine "nonresponsiveness," predict future difficulties, and result in acceptable levels of *sensitivity* (e.g. indicates percent of children who will be identified as having a specific learning disability out of all the children who actually have one), *specificity* (e.g. indicates percent of children who will be identified as not having a specific learning disability out of all of the children who do not have one), *false positive rates* (e.g., indicates percent of students who will be identified as having a specific learning disability out of all the children who actually do not have one), and *false negative rates* (e.g. indicates the percent of children who will be identified as not having a specific learning disability out of all of the children who actually do have a specific learning disability).

PART IV. REQUIREMENTS OF THE PROPOSED RESEARCH

5. GENERAL REQUIREMENTS OF THE PROPOSED RESEARCH

A. Basic Requirements

a. ***Focus on services for students with disabilities.*** This competition is restricted to special education research for students with disabilities, as previously defined (see p. 4, Request for Applications).

b. ***Resubmissions***. Applicants who intend to revise and resubmit a proposal that was submitted to one of the Institute's FY 2006 competitions but that was not funded must indicate on the application form that their FY 2007 proposal is a revised proposal. Their FY 2006 reviews will be sent to this year's reviewers along with their proposal. Applicants should indicate the revisions that were made to the proposal on the basis of the prior reviews using no more than 3 pages of Appendix A.

c. ***Applying to multiple topics***. Applicants may submit proposals to more than one of the Institute's FY 2007 competitions or topics. In addition, within a particular competition or topic, applicants may submit multiple proposals. However, applicants may submit a given proposal only once (i.e., applicants may not submit the same proposal or very similar proposals to multiple topics, to multiple goals in the same topic, or to multiple competitions). If the Institute determines prior to panel review that an applicant has submitted the same proposal or very similar proposals to multiple topics within or across competitions and the proposal is judged to be compliant and responsive to the submission rules and requirements described in the Request for Applications, the Institute will select one version of the application to be reviewed by the appropriate scientific review panel. If the Institute determines after panel review that an applicant has submitted the same proposal or very similar proposals to multiple topics within or across competitions and if the proposal is determined to be worthy of funding, the Institute will select the topic under which the proposal will be funded.

d. Applying to a particular goal within a topic. To submit an application to one of the Institute's education research programs, applicants must choose the specific goal under which they are applying. Each goal has specific requirements.

e. Inclusions and restrictions on the Special Education Research Grants Programs. For the FY 2007 Special Education Research Grants Programs, applicants must submit under *either* Goal One *or* Goal Two *or* Goal Three *or* Goal Four *or* Goal Five. The numbering of goals is consistent across the Institute's research programs. Each goal has specific requirements that are described in the following section. Briefly,

(i) Goal One incorporates efforts to identify conditions that are associated with and are potential determinants of improved learning and school achievement for students with disabilities. The understanding developed through Goal One awards is expected to be relevant to the design and implementation of future interventions. The typical methodology for Goal One will be the analysis of existing databases, including state longitudinal databases, using statistical approaches that allow for testing models of the relationships among variables in ways that strengthen hypotheses about paths of influence; small scale, descriptive longitudinal studies are also acceptable.

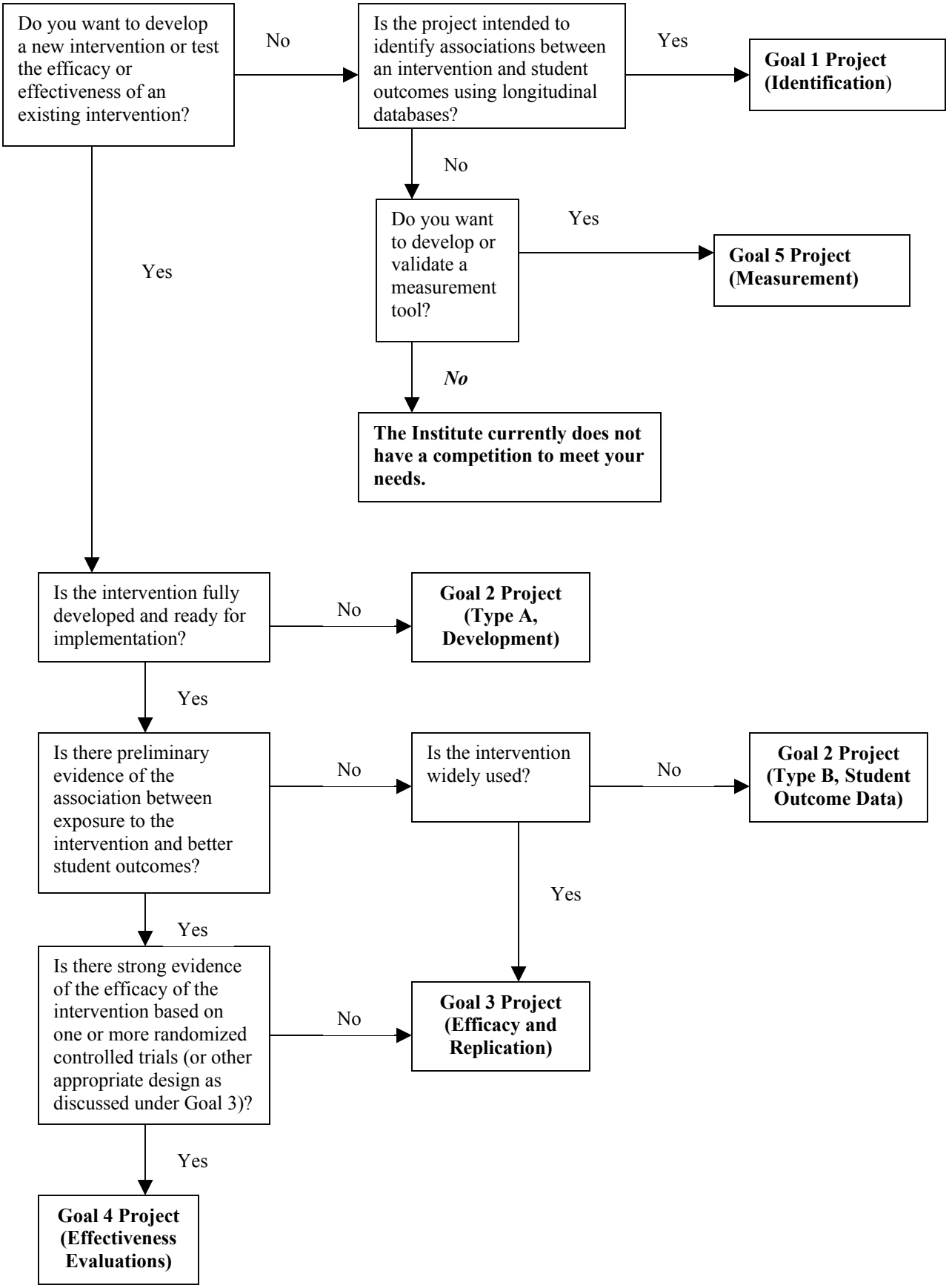
(ii) Applicants proposing to develop new interventions should apply under Goal Two. Also allowable under Goal Two are applications to obtain preliminary data on the correlation between exposure to an intervention and student outcomes for fully developed interventions that are not widely used and that have not previously been evaluated with student outcome data. Under Goal Three, the Institute will accept proposals to conduct efficacy or replication trials of interventions. Goal Four targets evaluations of the effectiveness of interventions implemented at scale. The second through fourth goals can be seen as a progression from development (Goal Two) to efficacy (Goal Three), to effectiveness at scale (Goal Four).

(iii) Goal Five is to develop and validate measurement tools for students with and at risk for disabilities from pre-kindergarten through adult education. For the FY 2007 Special Education Research Grants Program on Assessment for Accountability, applicants must submit under Goal Five.

Note: Applicants proposing to study students at risk for developing disabilities must present research-based evidence of the documented risks in their study population and the specific disabilities that may result. In addition, applicants proposing to study personnel preparation and professional development interventions around specific student-level programs or curricula must maintain a clear focus on studying the content, methods, and outcomes of the professional development and must not simply study the effectiveness of the student-level programs or curricula.

f. Determining which goal is most appropriate for the proposed project. Applicants should read carefully the requirements for each Goal and the examples of appropriate projects under each Goal. The Institute strongly encourages potential applicants to contact the relevant program officer listed in Section 19 if they have any questions regarding the appropriateness of a particular project for submission under a specific goal. In the past, many applicants have had questions deciding between Goal Two (Development) and Goal Three (Efficacy and Replication Trials) and between Goal Three and Goal Four (Effectiveness Evaluations). Applicants may find the following decision tree useful for guiding their thinking.

Deciding Among Goals One, Two, Three, Four, and Five



B. Requirements for Goal One (Identification Projects)
Because the requirements for Goals One through Four are essentially the same across the Institute's competitions and topics, a generic description is used in all of the relevant funding announcements. Consequently, the examples provided may not apply to a particular competition or topic.

a. Purpose of identification studies. Through all of its research programs that include the Identification goal (Goal One), the Institute is primarily interested in analyses of multivariate data, such as longitudinal individual student data that exist in a number of federal-, state-, and district-level databases, to identify existing programs, practices, and policies that may be associated with better academic outcomes, and to examine factors and conditions that may mediate or moderate the relations between student outcomes and these programs, practices, and policies.

For Goal One, the Institute expects investigators typically to use existing longitudinal data sets to capitalize on natural variation or discontinuities in education practices or policies. For example, in a particular year, a large district might have implemented a policy to hire master reading teachers for elementary schools. An investigator might propose interrupted time series analyses of the district's longitudinal datasets to examine changes in student outcomes that follow the implementation of the new policy. As a second example, a state may have implemented a new policy for early intervention for children with disabilities that provides financial incentives for existing daycare and preschool providers to include children with disabilities within their programs. A researcher might utilize the state's administrative database on preschool programs funded through the state's pre-kindergarten initiative to determine the degree to which the new policy changed the rate of inclusion, the conditions that were correlated with the variations in the uptake of the new policy by individual preschool providers, and the performance of children with disabilities on assessments. These quantitative data might be augmented by interviews with administrators and teachers to garner impressions on barriers and challenges to implementing the new policy. The aim would be to develop a quantitative description of how the new policy is working, and hypotheses derived from both quantitative and qualitative data about how it could be made to work more effectively.

As an alternative to analyzing existing longitudinal databases, applicants who are interested in investigating programs, practices, and policies that may be associated with better academic outcomes could propose to conduct a small scale descriptive longitudinal study with primary data collection. In such cases, applicants would collect and analyze their own data, rather than analyze already existing data. However, applicants should keep in mind the limited timeframe and budget of typical Goal One projects (see section d below).

Value-added analyses can often strengthen the conclusions drawn from traditional multivariate analyses. Value-added analyses use gain scores for individual students to control for student characteristics when estimating the effects of other variables. For example, the analysis of the relationship between teacher professional development and reading outcomes described previously would be more persuasive if individual student outcomes in a particular year were adjusted for student scores on the same or a similar assessment at the end of the previous school year.

The strongest approaches to statistical modeling of multivariate data involve testing two or more models of relationships using the same data. Because multivariate analyses cannot fully adjust for selection biases and the effects of variables that were not measured or were not measured well, they are seldom if

ever sufficient to support strong causal conclusions about what works. However, when two or more models of relationships among variables are tested with the same data, it may be possible to determine that one is more plausible than another, thus providing information relevant to understanding what does not work, as well as what does work. That, in turn, can direct future efforts in avenues that are more likely to be productive.

Evidence obtained through a Goal One project of the association between exposure to a program, practice, or policy and better student outcomes has the possibility of being used to support a subsequent application for a Goal Two (Development) or Goal Three (Efficacy) project.

By addressing the theoretical and empirical rationale for the study and the practical importance of the intervention (e.g., policy, program) that will be examined, Goal One applicants are addressing aspects of the significance of their proposal.

***b. Methodological requirements*. For all applications, including those submitted under Goal One, the proposed research design must be appropriate for answering the research questions or hypotheses that are posed.**

(i) *Database*. The applicant should describe clearly the database(s) to be used in the investigation including information on sample characteristics, variables to be used, and ability to ensure access to the database if the applicant does not already have access to it. The database should be described in sufficient detail so that reviewers will be able to judge whether or not the proposed analyses may be conducted with the database. If multiple databases will be linked to conduct analyses, applicants should provide sufficient detail for reviewers to be able to judge the feasibility of the plan. If the applicant does not currently have access to the databases needed for the study, the applicant should provide sufficient documentation (e.g., letters of agreement) to assure reviewers that access can be obtained and the project can be carried out in a timely fashion.

The applicant should describe the primary outcome measures to be used, including reliability and validity. In particular, applicants should provide sufficient information on the construct validity of the proposed measures. For example, if the applicant proposes to use a state database from which the primary outcome measure will be high school dropout rates, the applicant should detail how the high school dropout rates are derived.

(ii) *Primary data collection (optional)*. For some projects, applicants may need to collect original data; these data will generally be used to supplement an existing longitudinal database in order to answer the question of interest. In such cases, the application must detail the methodology and procedures proposed for the primary data collection. Applicants should describe the sample and how the sample is related to or links to the proposed secondary database, the measures to be used (including information on the reliability and validity of the proposed instruments), and data collection procedures.

(iii) *Data analysis*. The applicant must include detailed descriptions of data analysis procedures. Because predictor variables relevant to education outcomes (e.g., student characteristics, teacher characteristics, school and district characteristics) often covary, the Institute expects investigators

to utilize the most appropriate state-of-the-art analytic techniques to isolate the possible effects of variables of interest. Analytic strategies should allow investigators to examine mediators and moderators of programs and practices. The relation between hypotheses, measures, independent and dependent variables should be well specified. Strong applications will include an explicit discussion of how exclusion from testing, or missing data, will be handled within the statistical analyses. Strong applications will propose an approach for comparing hypotheses or models of relationships among variables.

c. Personnel and resources. Competitive applicants will have research teams that collectively demonstrate expertise in (a) the relevant academic content area (e.g., reading, mathematics), including where applicable, teacher education; and (b) implementation of, and analysis of results from, the research design that will be employed. Competitive applicants will have access to institutional resources that adequately support research.

d. Awards. Typical awards for projects at this level are $100,000 to $250,000 (total cost = direct + indirect costs) per year for a maximum of 2 years. The size of the award depends on the scope of the project.

C. Requirements for Goal Two (Development Projects)

a. Purpose of Goal Two (Development). Through all of its research programs that include the Development goal (Goal Two), the Institute intends to support the development of interventions – curricula, instructional approaches, programs, and policies. From the Institute's standpoint, a funded development project would be successful if at the end of the 2 to 4 year development award, the investigators had a fully developed version of the proposed intervention, including for example, materials for students and teachers and pilot data showing a positive correlation between exposure to the intervention and student outcomes. The Institute anticipates that investigators with successful development projects would submit proposals to subsequent competitions for Goal Three (Efficacy) awards. Thus, Goal Two applicants should be aware that the type of data (e.g., measures of student learning and achievement) they propose to collect under Goal Two awards should prepare them to apply for Goal Three awards. That is, for most interventions to qualify for Goal Three projects, they must have student outcome data such that exposure to the intervention is associated with better student outcomes. One exception is under the Quality of Teachers and Other Service Providers for Students with Disabilities topic and pertains to interventions administered as part of preservice training (see the methodological requirements for Goal Two projects below.

The Institute recognizes that research on children with disabilities often utilizes alternative research designs due to low incidence of specific disabilities. In such cases, single subject designs are appropriate. Requirements for single subject designs are detailed in sub-section 4.D.d Requirements for single subject designs.

b. Requirements for the proposed intervention. Under Goal Two, the Institute considers two types of projects: Type A projects and Type B projects. First, the Institute will consider applications to develop new interventions or further develop interventions that are in the early stages of development (e.g., those that do not have an entire curriculum ready to evaluate). Such projects are referred to **as Type A** projects under Goal Two. For **Type B** projects, applicants must have a fully developed intervention and

propose to collect pilot data that includes student outcome measures. Type B projects are further described at the end of this subsection.

Under Goal Two, it is important for applicants to provide a strong rationale to support the development of the proposed intervention (e.g., curriculum, instructional practice, teacher professional development program, professional development delivery model). Reviewers will consider whether there is a strong theoretical foundation for the proposed intervention and whether the proposed intervention is grounded in empirical research. For example, applicants might have already developed some components of the intervention and have pilot data showing the potential efficacy of those components. In such cases, the proposed project might be to complete the development of the intervention and obtain pilot data on the relation between exposure to the intervention and student outcomes. Alternatively one could imagine a proposal to develop and implement an intervention for struggling high school readers that is based on an intervention developed for upper elementary school students. Part of the empirical justification for developing this particular intervention for struggling adolescent readers might be that the original intervention for elementary school students had been evaluated through a study that employed random assignment and was found to be efficacious for improving reading comprehension among elementary school students. In this case, the applicant would be proposing to modify this existing intervention to make it appropriate for high school students who are struggling readers, and to collect data on the relation between exposure to the modified intervention and student outcomes. Applicants should clearly and concisely articulate why the proposed intervention, as opposed to some other type of intervention, should be developed.

In the rationale to support the proposed intervention, applicants should address the *practical* importance of the proposed intervention. For example, when the proposed intervention is fully developed, will it form a set of math instructional strategies that has the potential to improve students' mathematics test scores in educationally meaningful increments, if it were implemented over the course of a semester or school year? Is the planned intervention sufficiently comprehensive, for instance, to address multiple types of difficulties that students encounter in mastering algebra and to lead to improvements in students' grades or mathematics achievement test scores? If the proposed intervention focuses on academic content, how does the academic content (e.g., high school physics) proposed in the intervention relate to state standards for that domain? In addition, would the proposed intervention be both affordable for schools and easily implemented by schools (e.g., not involve major adjustments to normal school schedules)? Appropriate applications for Goal Two may include, for example, proposals to develop and test curriculum materials that ultimately could be combined to form a complete stand-alone curriculum for a grade. Also appropriate would be proposals to develop supplementary materials that would be used in conjunction with existing curricula.

Applicants should clearly describe the components of the intervention and how they relate to each other temporally (or operationally), pedagogically (e.g., in a scope and sequence), and theoretically (e.g., why does X lead to Y). When applicants clearly describe the model that guides the intervention and the specific components making up the intervention, reviewers are better able to evaluate the relation between the theoretical and empirical foundation for the intervention and the intervention (e.g., is the proposed intervention a reasonable operationalization of the theory?). Reviewers are also better able to evaluate the relation between the intervention and the outcome measures (e.g., do the proposed measures tap the constructs that the intervention is intended to address?). Because it is rare for students in comparison conditions to receive no educational program, strong applications should include data on, or

review research describing, the attributes of typical, existing practices. Understanding the shortcomings of current practice contributes to the rationale for the proposed intervention. By clearly describing the components of the intervention – particularly, the unique features of the intervention – as well as the instruction that students in the comparison group will receive, reviewers are better able to judge whether the proposed intervention is sufficiently different from what students typically receive to potentially generate differential outcomes.

The Institute recognizes there are some fully developed interventions that would not qualify for investigation under Goal Three because there are no student outcome data demonstrating the association between exposure to the intervention and better student outcomes nor is there wide-spread use of the intervention. In such cases, applicants may apply under Goal Two for support to conduct a small study to obtain pilot data on the association between exposure to the intervention and student outcomes. These projects are referred to as **Type B** projects under Goal Two. **Such projects are limited to a maximum of 2 years of support because the Institute expects the investigator to be ready to implement the intervention in schools or other education delivery settings at the beginning of the award period**. The applicant should clearly state in the beginning of the research narrative that he or she is applying under Goal Two with a fully developed intervention that has not been previously evaluated using student outcome measures. As with all Goal Two applications, the applicant should describe the empirical and theoretical rationale that indicates why the proposed intervention is likely to be successful for improving student learning and achievement. The applicant should articulate the practical importance of the intervention. That is, applicants proposing Type B projects should articulate the theoretical, empirical, and practical reasons that justify investing research dollars to study the proposed intervention. In addition, because of the short timeframe, Type B applicants should be aware that strong applications show a proper balance of effort across implementation, data collection, data analysis, and documentation/write-up of the study.

By addressing the theoretical and empirical support for the proposed intervention and the practical importance of the intervention, Goal Two applicants are addressing aspects of the significance of their proposal. Projects can be costly because of the type of intervention being developed (e.g., intelligent tutors), and because of the data collection and research methods used. In all cases, the significance of the proposal should justify this expense (e.g., does the theoretical and empirical support for the proposed intervention suggest that substantively important effects will be obtained if the intervention is implemented?).

Applicants deciding whether their proposal is more appropriate for Goal Two or Goal Three or Goal Four may find the decision tree to be useful.

c. Methodological requirements. **For all applications, including those submitted under Goal Two, the proposed research design must be appropriate for answering the research questions or hypotheses that are posed. For Type A projects under Goal Two, the proposed research must also be appropriate for providing empirical data to guide the development and refinement of the intervention.**

For Goal Two projects involving the development of an intervention (Type A projects), there are two aspects of the research methodology that applicants must clearly address: (a) the proposed methods for developing the intervention and (b) the proposed research methods for obtaining evidence of the *relation*

between exposure to the proposed intervention and student outcomes. Goal Two applicants whose intervention is already developed (Type B projects) should present the proposed methods for obtaining evidence of the relation between exposure to the proposed intervention and student outcomes.

For Type A Development projects, investigators are proposing to develop a new intervention (e.g., curriculum, instructional approach, professional development program). In such cases, applicants should describe the process they will use to collect empirical (but not necessarily experimental) data that will provide feedback for refining specific components of the intervention. What data will be collected to determine the feasibility of the components of the intervention and how the components work? Are some components harder to implement than others? As an example, suppose an applicant proposes to develop a reading comprehension curriculum in which a number of comprehension strategies are presented to middle school students. Some components might initially be pilot tested with small groups of students outside of a classroom context. Some components might be implemented in the classroom with the researcher conducting detailed observations on students and teachers as the components are implemented in the context of actual lessons. The researchers could propose to interview or conduct focus groups with teachers who pilot the initial and revised version of each unit to obtain feedback on feasibility of implementation, the amount of time required for teaching each lesson, and difficulties encountered during instruction, as well as obtaining suggestions for improving the materials. A variety of methodological strategies might be employed during this phase. *Applicants should describe the iterative development process to be used in the design and refinement of the proposed intervention and plans for acquiring evidence about the operation of the components in the model that they described.*

By the end of a Goal Two project (Type A and Type B), the Institute expects investigators to have obtained and analyzed student outcome data testing whether exposure to the intervention is positively, negatively, or not correlated with student performance, and to have obtained an estimate of the size of the effect. For Goal Two projects, acceptable designs include nonequivalent comparison group quasi-experiments and experimental designs. While designs that include some type of comparison group are desirable, they are not necessary for Goal Two Projects. For example, an applicant could propose a simple one-group pre-post design in which change in the outcome from pretest to posttest for students who received the intervention is compared to normative change in the outcome over a similar time period.

An example of an acceptable design for obtaining evidence of the relation between exposure to the proposed intervention and student outcomes is one in which the applicant (a) has 8 to 10 teachers implement a new reading curriculum designed to improve reading comprehension, and (b) obtains scores on the district's standardized reading achievement test for students who received the intervention and for students in comparable classrooms in the same district who did not receive the intervention. This example is a nonequivalent comparison group post-test only quasi-experimental design. In this example, a strong application would match the intervention and comparison groups on demographic and outcome variables. If the *prior* year's district end-of-year reading achievement test scores are available for both the treatment group students and the matched nonequivalent comparison group students, the investigator could improve on the basic design by using the prior year's scores as a pre-test. The investigator could calculate an effect size measuring the difference in the district's end-of-year reading achievement test scores for the treatment group versus the matched non-experimental comparison group. An applicant following this example might include other reading comprehension measures that may be more sensitive to the proposed intervention. In order to keep the scope of the project appropriate to a

Development award, the applicant would only collect these additional data on students in the intervention group.

This research design has the advantage of allowing the investigator to observe the implementation of the intervention in several classrooms while keeping the scope (and costs) of the project appropriate for awards for a development project. This design also capitalizes on those situations in which data for a non-experimental comparison group are available from assessment data collected by the district. This design does *not* involve random assignment of students or classrooms to different treatment conditions. The Institute recognizes that such data do *not* provide causal evidence of the impact of the intervention on student outcomes. However, the purpose of the Development goal is to provide funds to develop interventions that on the basis of the theoretical rationale and relevant prior empirical evidence appear to have the potential to improve student learning and to collect pilot data that would permit a reasonable evaluation of whether or not the intervention has sufficient potential for improving student outcomes to merit further investment – that is, to determine if there are *potentially positive outcomes* associated with exposure to the intervention.

An example of an alternative design for testing a newly developed intervention (e.g., a new instructional approach) that is also acceptable is one in which the applicant randomly assigns 4 to 5 classrooms to the new intervention and 4 to 5 classrooms to the comparison condition in which teachers teach their class as they have in the past; pretest and posttest data are collected for students in both groups. This design has some advantages over the previous example and some disadvantages. This design takes advantage of the benefits of random assignment experimental designs for making causal inferences. One disadvantage to this design is that the small number of classrooms assigned to each condition is not likely to be sufficient for obtaining statistical significance for appropriate tests of the effect of the intervention.

Through Goal Two projects, the Institute will fund projects to develop interventions and to obtain pilot data to determine whether or not the intervention as initially developed warrants the substantial investment required to conduct an efficacy study under Goal Three. By providing these two examples – one non-experimental study involving primary data collection in 8 to 10 classrooms and one experimental study involving primary data collection in 8 to 10 classrooms – the Institute is providing guidance to applicants on the scope of projects that the Institute intends to support under Goal Two as Development projects. Goal Two projects are *not* intended to provide evidence on the *efficacy* of the proposed interventions (see the Institute's definition of efficacy under Goal Three). Goal Two studies, unlike efficacy studies, are intended to show that an intervention is promising. That means that results are in the expected direction. The Institute expects these research designs to be as strong as possible, including appropriate matching of students and statistical analyses. However, the Institute also understands and expects that, within the limited budget of Goal 2 projects, many such designs will be underpowered (i.e., unable to detect an effect as statistically significant using traditional probability levels and random effects assumptions). This may be particularly true when applicants choose to demonstrate the promise of an intervention with an experimental or quasi-experimental design that involves treatments at the classroom or building level. The Institute recommends that applicants first describe their research design, detail their analysis plan, and indicate what the power would be if they calculated it appropriately (e.g., taking clustering into account, using the appropriate unit of analysis). Second, applicants may describe (a) an analysis plan that treats the clusters (i.e., classroom or school) as fixed effects and what the power would be under these conditions or (b) an analysis plan that treats the

clusters as random effects, but uses a more liberal significance level than the conventional $\alpha = .05$ (e.g., $\alpha = .25$). In doing so, applicants should also indicate the limitations to their ability to draw conclusions based on this analysis. Strong applications will include confidence intervals for treatment effects (or treatment effect sizes) computed considering clusters as random effects**.**

The Institute anticipates that the data obtained through some Goal Two projects will show sufficiently strong associations between exposure to the developed intervention and student outcomes to support a subsequent application for a Goal Three (Efficacy) award. Data from other projects might lead researchers to apply for a second Goal Two award to further develop or refine their intervention. Data from still other projects might indicate that the overall approach should be changed; that is, the intervention does *not* appear to be promising. In such cases, the researchers might use that knowledge to develop a different intervention. In addition, there may be instances in which researchers successfully complete a Development project to create, for example, curriculum modules to cover one semester of a science curriculum and have obtained data demonstrating a positive correlation between exposure to the curriculum and student outcomes with empirical evidence. Over the course of the project the investigators may decide that before they apply for an Efficacy project they want to develop enough modules to complete a science curriculum for the entire academic year, rather than for just one semester. The Institute considers it appropriate for such researchers to apply for a second Development project.

Finally, the Institute recognizes that for some of its topics improving student outcomes is a more distal outcome. For example, in the Quality of Teachers and Other Service Providers program, changing the behaviors of teachers or other service providers is a proximal outcome and student outcomes are distal outcomes. For applicants who are proposing to develop and obtain pilot data for professional development interventions, both data on observed behaviors of teachers and their students must be obtained. However, the Institute recognizes that for pre-service interventions, there may not be sufficient time and resources to follow, for example, pre-service teachers into their subsequent jobs and obtain follow-up data on their students. When it is not possible under the time constraints of the award (i.e., 4-year limit for Type A awards, 2-year limit for Type B awards) to obtain student outcome data because the intervention targets pre-service teachers, the Institute encourages applicants to include measures of teacher behaviors that have been associated with student outcomes in the research literature, in addition to other teacher behaviors that are selected for other theoretical and empirical reasons. Applicants choosing this option should provide sufficient information to convince reviewers that demonstrating change on such measures is likely to be associated with change in student outcomes.

(i) *Sample*. The applicant should define, as completely as possible, the sample to be selected and sampling procedures to be employed for the proposed study. Additionally, if the applicant proposes a longitudinal study, the applicant should show how the long-term participation of those sampled would be assured.

(ii) *Design*. The applicant must provide a detailed research design. For Goal Two projects involving the development of an intervention (Type A projects), applicants should clearly describe: (a) the proposed methods for developing the intervention and (b) the proposed research methods for obtaining evidence of the *relation between exposure to* the proposed intervention and student outcomes. Goal Two applicants whose intervention is already developed (Type B projects) should present the proposed methods for obtaining evidence of the relation between exposure to the proposed intervention and student outcomes.

Applicants should describe how potential threats to internal and external validity will be addressed. Although procedures differ between group evaluations and single subject evaluations, regardless of approach, these issues should be addressed. For example, in single subject designs, applicants should consider the anticipated size of the intervention effect and how they would handle within-subject variability in the outcome measure in the baseline or comparison condition, variability in response to treatment within participants across time and variability in response to treatment between subjects. Applicants should indicate the number of replications anticipated to establish external validity. In essence, what criteria will the applicant use to determine if the response to the treatment is sufficiently large and sufficiently replicated to be generalizable beyond the participants included in the study?

(iii) *Measures*. For all proposals under Goal Two, investigators must include measures of relevant student outcomes (e.g., measures of reading or mathematics achievement). Applicants to the Quality of Teachers and Other Service Providers topic must include behavioral measures of the teachers who are the target of the intervention, as well as measures of student learning and achievement. As noted above, the Institute recognizes that applicants under this topic who are proposing to develop and assess interventions that are administered as part of *preservice* training for future teachers or other service providers may not have sufficient time within the constraints of the award period to follow the preservice teachers into their first positions and obtain data on their students. In such instances, applicants should include measures of teacher behaviors that have been associated with student outcomes and provide sufficient justification to assert that demonstrating change on these proximal measures is likely to be associated with change in student outcomes.

The applicant should provide information on the reliability and validity of the selected measures and justify the appropriateness of the proposed measures.

All applicants should note that data that only describe *process* (e.g., observations of student behavior during planned lessons, case study of the implementation of the curriculum, a discourse analysis of classroom discussions) or data only on teacher or student perception of improvement or ease of use will *not* be considered as sufficient evidence of the potential efficacy of the intervention.

(iv) *Process data*. Although the applicant must include relevant student outcome data to address the question of potential efficacy, this requirement does *not* preclude the collection of process data. In fact, the Institute encourages the collection of such data, which can help the researcher refine the intervention and provide insight into why an intervention does or does not work, and is or is not well implemented. Observational, survey, or qualitative methodologies are encouraged as a complement to quantitative measures of student outcomes to assist in the identification of factors that may, for example, explain the effectiveness or ineffectiveness of the intervention or identify conditions that hinder implementation of the intervention.

(v) *Data analysis*. The applicant must include detailed descriptions of data analysis procedures. For quantitative data, specific statistical procedures should be cited. The relation between hypotheses, measures, independent and dependent variables should be clear. For qualitative

data, the specific methods used to index, summarize, and interpret data should be delineated. For single subject studies, where applicable, the Institute expects applicants to describe what statistical methods (e.g., time series analyses) will be conducted to determine if the size of the effect is significant.

d. Personnel and resources. Competitive applicants will have research teams that collectively demonstrate expertise in (a) specific academic domain (e.g., vocabulary development, or reading, mathematics, and if applicable, teacher education); (b) implementation of, and analysis of results from, the research design that will be employed; and (c) working with teachers, schools, or other education delivery settings that will be employed. Competitive applicants will have access to institutional resources that adequately support research activities and access to education delivery settings in which to conduct the research.

An applicant may involve *for-profit entities* in the project. Involvement of the commercial developer or distributor must not jeopardize the objectivity of the evaluation. *Collaborations including for-profit developers or distributors of education products must justify the need for Federal assistance to undertake the evaluation of programs that are marketed to consumers and consider cost-sharing part of the cost of the evaluation.*

e. Awards. Typical awards for projects at this level are $150,000 to $500,000 (total cost = direct + indirect costs) per year. Type A projects are for a maximum of 4 years; Type B projects are for a maximum of 2 years. In all cases, the size of the award depends on the scope of the project.

D. Requirements for Goal Three (Efficacy and Replication Trials)

Under Goal Three, the Institute requests proposals to test the efficacy of fully developed interventions that already have evidence of potential efficacy. By *efficacy*, the Institute means the degree to which an intervention has a net positive impact on the outcomes of interest in relation to the program or practice to which it is being compared.

a. Purpose of efficacy and replication trials. Through all of its research programs that include the Efficacy and Replication goal (Goal Three), the Institute intends to fund efficacy trials to determine whether or not fully-developed interventions – programs, practices, policies – are effective under specified conditions (e.g., large urban high schools with large class sizes and high turnover rate among teachers) and with specific types of students (e.g., low income or high proportion of English language learners). Results from efficacy projects have less generalizability than results from effectiveness trials under Goal Four. The limited generalizability can arise both from the lack of a full range of types of settings and participants in the study, as well as through the intensive involvement of the developers and researchers in the implementation of the intervention. A well-designed efficacy trial provides evidence on whether an intervention **can** work, but not whether it would work if deployed widely. Under Goal Three, applicants may propose an efficacy trial to determine if an intervention will work under specific conditions or a replication trial to determine if an intervention shown to produce a net positive impact in one setting will produce a net positive impact in a different setting or with a different population of students.

Under Goal Three, an applicant might propose to examine the efficacy of the intervention in an experimental study in which half of the classrooms are randomly assigned to the intervention condition

and half of the classrooms are assigned to continue to use the district's standard curriculum. If the research team hypothesized that level of teacher professional development would meaningfully affect implementation and student outcomes, the team might propose instead to randomly assign one-third of the classrooms to an intervention condition in which teachers receive a training workshop for implementing the treatment curriculum at the beginning of the year, one-third of the classrooms to an intervention condition in which teachers receive the training workshop on implementation of the treatment curriculum with follow-up coaching sessions during the year, and one-third of classrooms to continue to use the district's standard curriculum. *Applicants should use the efficacy and replication trials to determine the conditions, if any, under which an intervention produces meaningful improvement on academic outcomes.*

Also of interest to the Institute are proposals to compare the impact of two interventions that are based on different theoretical models. In such cases, the purpose might be to compare the efficacy of two well-developed approaches to improving student learning. One advantage to this approach is that, relative to designs in which the comparison group experiences whatever the school or district currently provides (but see the discussion of "business-as-usual" treatments below), the investigator should have better knowledge of the critical components of each intervention and can attempt to create two conditions in which, for example, students receive instruction that differs on a number of critical instructional components.

Efficacy projects that involve random assignment at the school-level are likely to be quite costly. When schools are the unit of assignment, it is acceptable for applicants to increase the power of their design and reduce the requisite number of schools by conducting an analysis that treats schools as a fixed effect. Applicants should first describe their design, detail their analysis plan, and indicate what the power would be if schools were treated as a random effect. Applicants should then describe an analysis plan that treats schools as fixed effects and indicate what the power would be under these conditions. Treating schools as fixed effects limits the generalizability of the findings. In cases in which research finds significant effects using a fixed effects model but there is insufficient power to obtain effects using a random effects model, the Institute encourages investigators to apply for subsequent funding to replicate their efficacy studies to build the generalizability of the findings.

From the Institute's standpoint, a funded Efficacy/Replication project would be *methodologically successful* if at the end of the grant period, the investigators had rigorously evaluated the impact of a clearly specified intervention on relevant student outcomes and under clearly described conditions using a research design that meets the Institute's What Works Clearinghouse standards (http://whatworks.ed.gov) whether or not the intervention is found to improve student outcomes relative to the comparison condition. The Institute would consider methodologically successful projects to be *pragmatically successful* if the rigorous evaluation determined that the intervention has a net positive impact on student outcomes in relation to the program or practice to which it is being compared.

The Institute recognizes that research on children with disabilities often utilizes alternative research designs for determining the causal impact of an intervention due to small populations of children with specific disabilities. In such cases, rigorous single subject designs are appropriate. Requirements for single subject designs are detailed in sub-section 4.D.d. *Requirements for single subject designs*.

b. Requirements for the proposed intervention. Interventions appropriate for study under Goal Three may be (i) interventions that are fully developed and have evidence of the potential efficacy of the intervention or (ii) interventions that are already widely used within one or more states but have not been rigorously evaluated.

(i) For interventions that are *not* already in wide use, applicants must have an intervention that is fully developed and ready to be evaluated. Applicants who intend to devote a significant part of the project period to developing new components or materials for the intervention (e.g., additional curriculum modules, materials to train teachers to use the intervention curriculum) or new delivery approaches (e.g., material that was delivered by a teacher is proposed to be delivered via computer) should apply to Goal Two. Goal Three projects are limited to those interventions that are fully developed and have all materials (including teacher training programs) ready for implementation.

For interventions that are *not* already in wide use, applicants must provide a compelling rationale for the use of the intervention that includes (1) a strong theoretical foundation and (2) empirical evidence of the association between exposure to the intervention and better student outcomes. As part of the description of the theoretical basis for the intervention, the applicant should detail how the components of the intervention operationalize the tenets of the theory. A strong theoretical rationale will make clear which features of the intervention are the critical features that need to be well-implemented in order to obtain improvement in student outcomes.

Applicants should clearly detail the empirical evidence in support of the intervention. For example, empirical evidence to justify an evaluation of the intervention could consist of data based on a single-group, pre-test/post-test study showing an increase in scores on a standardized measure for which there are existing data on typical gains in scores over a comparable period of time. As another example, the preliminary evidence could be a small quasi-experimental study in which the intervention was implemented in a few classrooms and students' end-of-year achievement test scores are compared to the scores of other classrooms in the same district. Such a study would be under-powered for most interventions and outcomes, so it is the effect size rather than statistical significance of the difference that would be most informative. Furthermore, information on effect sizes is more useful to reviewers when sufficient context for interpreting the effect sizes is provided. For example, how does the size of the obtained effect compare to the amount of growth one would expect over an academic year for students at that grade-level and in that domain?

As noted above under Goal Two, the Institute recognizes that applicants under Quality of Teachers and Other Service Providers who are proposing to evaluate interventions that are administered as part of *preservice* training for future teachers may not have student outcome data to show an association between exposure to the preservice training intervention and outcomes of students of those teachers who participated in that preservice training. In such instances, applicants should demonstrate associations between exposure to the preservice intervention and measures of teacher behaviors that have been associated with student outcomes. Strong applications would include, for example, measures of instructional practices that have been shown to be effective for improving student learning in previous research.

Also appropriate for Goal Three applications are proposals to replicate the efficacy of an intervention in a different setting. For instance, in a previous study, the applicant could have demonstrated the efficacy of an intervention in a small random assignment trial in an urban school district, and a reasonable next step would be to *replicate* these findings in a poor rural school district.

(ii) To propose evaluations of interventions that are already widely used in one or more states but have not been rigorously evaluated (e.g., a commercially distributed curriculum), applicants must provide documentation of the widespread use of the program to justify the proposed efficacy evaluation. In such cases, applicants do not need to provide evidence of the relation between exposure to the intervention and student outcomes. Of course, if such evidence is available, applicants should include it.

(iii) All Goal Three applicants should address the *practical* importance of the proposed intervention. For example, is the professional development on reading for middle school teachers sufficiently comprehensive that it includes strategies for teaching reading across academic content areas and appropriate for teachers of students from Grades 6 to 8? Does the preliminary data show that the components of the curriculum are sufficiently different from existing curricula that comparison of the proposed curriculum to an existing curriculum could potentially yield a positive effect and does the preliminary outcome data support the thesis that the proposed curriculum has the potential to improve students' test scores in educationally meaningful increments?

(iv) Applicants should clearly describe the components of the intervention and how they relate to each other both temporally (or operationally) and theoretically (e.g., why does X lead to Y). When applicants clearly describe the model that guides the intervention and the specific components making up the intervention, reviewers are better able to evaluate the relation between the theoretical and empirical foundation for the intervention and the intervention (e.g., is the proposed intervention a reasonable operationalization of the theory?). Reviewers are also better able to evaluate the relation between the intervention and the outcome measures (e.g., do the proposed measures tap the constructs that the intervention is intended to address?). Strong applications will also include detailed descriptions of what the comparison group experiences. By clearly describing the components of the intervention and the comparable treatment (e.g., curriculum, instructional approach, professional development) that the comparison group will receive, reviewers are better able to judge whether (a) the intervention is sufficiently different from the comparison treatment so that one might reasonably expect a difference in student outcomes, and (b) fidelity measures and observations of the comparison group are sufficiently comprehensive and sensitive to identify and document critical differences between what the intervention and comparison groups receive.

By addressing the theoretical and empirical support for the proposed intervention and the practical importance of the intervention, and by clearly describing the components of the intervention, Goal Three applicants are addressing aspects of the significance of their proposal.

Applicants deciding whether their proposal is more appropriate for Goal Two or Goal Three or Goal Four may find the decision tree to be useful.

c. Methodological requirements. **Under Goal Three, the proposed research design must be appropriate for answering the research questions or hypotheses that are posed.**

(i) *Sample*. The applicant should define, as completely as possible, the sample to be selected and sampling procedures to be employed for the proposed study. Additionally, the applicant should describe strategies to insure that participants will remain in the study over the course of the evaluation.

(ii) *Design*. The applicant must provide a detailed research design. Applicants should describe how potential threats to internal and external validity will be addressed. Studies using randomized assignment to treatment and comparison conditions are strongly preferred. When a randomized trial is used, the applicant should clearly state the unit of randomization (e.g., students, classroom, teacher, or school). Choice of randomizing unit or units should be grounded in a theoretical framework. Applicants should explain the procedures for assignment of groups (e.g., schools, classrooms) or participants to treatment and comparison conditions.

Only in circumstances in which a randomized trial is not possible may alternatives that substantially minimize selection bias or allow it to be modeled be employed. Applicants proposing to use a design other than a randomized design must make a compelling case that randomization is not possible. Acceptable alternatives include appropriately structured regression-discontinuity designs or other well-designed quasi-experimental designs that come close to true experiments in minimizing the effects of selection bias on estimates of effect size. A well-designed quasi-experiment is one that reduces substantially the potential influence of selection bias on membership in the intervention or comparison group. This involves demonstrating equivalence between the intervention and comparison groups at program entry on the variables that are to be measured as program outcomes (e.g., reading achievement test scores), or obtaining such equivalence through statistical procedures such as propensity score balancing or regression. It also involves demonstrating equivalence or removing statistically the effects of other variables on which the groups may differ and that may affect intended outcomes of the program being evaluated (e.g., demographic variables, experience and level of training of teachers, motivation of parents or students). Finally, it involves a design for the initial selection of the intervention and comparison groups that minimizes selection bias or allows it to be modeled. For example, a very weak quasi-experimental design that would *not* be acceptable as evidence of program efficacy would populate the intervention condition with students who volunteered for the program to be evaluated, and would select comparison students who had the opportunity to volunteer but did not. In contrast, an acceptable design would select students in one particular geographical area of a city to be in the intervention; whereas students in another geographical area, known to be demographically similar, would be selected to be in the comparison condition. In the former case, self-selection into the intervention is very likely to reflect motivation and other factors that will affect outcomes of interest and that will be impossible to equate across the two groups. In the latter case, the geographical differences between the participants in the two groups would ideally be unrelated to outcomes of interest, and in any case, could be measured and controlled for statistically.

For instances in which small populations of children with specific disabilities restricts the possibilities for conducting group evaluations, rigorous single subject designs are appropriate for

demonstrating the efficacy of an intervention. See 4.D.d. *Requirements for single subject designs* for details.

(iii) *Power*. Applicants should clearly address the power of the evaluation design to detect a reasonably expected and minimally important effect. When applicants justify what constitutes a reasonably expected effect, applicants should indicate clearly (e.g., including the statistical formula) how the effect size was calculated.

Many evaluations of education interventions are designed so that clusters or groups of students, rather than individual students, are randomly assigned to treatment and comparison conditions. In such cases, the power of the design depends in part on the degree to which the observations of individuals within groups are correlated with each other on the outcomes of interest. For determining the sample size, applicants need to consider the number of clusters, the number of individuals within clusters, the potential adjustment from covariates, the desired effect, the intraclass correlation (i.e., the variance between clusters relative to the total variance between and within clusters), and the desired power of the design (note, other factors may also affect the determination of sample size, such as using one-tailed vs two-tailed tests, repeated observations, attrition of participants, etc.; see Donner & Klar, 2000; Murray, 1998; W.T. Grant Foundation & University of Michigan, http://sitemaker.umich.edu/group-based/optimal_design_software). Strong applications will include empirical justification for the intraclass correlation and anticipated effect size used in the power analysis. When calculating the power of the design, applicants should anticipate the degree to which the magnitude of the expected effect may vary across the primary outcomes of interest.

(iv) *Measures*. Investigators should include relevant standardized measures of student achievement (e.g., standardized measures of mathematics achievement or reading achievement) in addition to other measures of student learning and achievement (e.g., researcher-developed measures). For Quality of Teachers and Other Service Providers applications, applicants must also include measures of teacher practices. The Institute recognizes that applicants under Quality of Teachers and Other Service Providers who are proposing to develop and assess interventions that are administered as part of *preservice* training for future teachers may not have sufficient time within the constraints of the award period to follow the preservice teachers into their first positions and obtain data on their students. In such instances, applicants should include measures of teacher behaviors that have been associated with student outcomes and provide sufficient justification to assert that demonstrating change on these proximal measures is likely to be associated with change in student outcomes.

The applicant should provide information on the reliability, validity, and appropriateness of proposed measures. In strong applications, investigators will make clear that the skills or content the intervention is designed to address are captured in the various measures that are proposed.

(v) *Fidelity of implementation of the intervention*. Researchers should attend to questions of implementation and how best to train and support teachers in the use of these interventions. The applicant should specify how the implementation of the intervention will be documented and measured. In strong applications, investigators will make clear how the fidelity measures capture the critical features of the intervention. The proposal should either indicate how the

intervention will be maintained consistently across multiple groups (e.g., classrooms and schools) over time or describe the parameters under which variations in the implementation may occur. Investigators should propose research designs that permit the identification and assessment of factors impacting the fidelity of implementation.

(vi) *Comparison group, where applicable*. Comparisons of interventions against other conditions are only meaningful to the extent that one can tell what students in the comparison settings receive or experience. Applicants should include procedures for describing practices in the comparison groups. Applicants should be able to compare intervention and comparison groups on the implementation of critical features of the intervention so that, for example, if there is no observed difference in student performance between intervention and comparison students, they can determine if key elements of the intervention were also practiced and implemented in the comparison groups.

In evaluations of education interventions, students in the comparison group typically receive some kind of treatment; rarely is the comparison group a "no-treatment" control. Students in the comparison group are still in school experiencing the school's curriculum and instruction. For some evaluations, the primary question is whether the treatment is more effective than a particular alternative treatment. In such instances, the comparison group receives a well-defined treatment that is usually an important comparison to the target intervention for theoretical or pragmatic reasons. In other cases, the primary question is whether the treatment is more effective than what is generally available and utilized in schools. In such cases, the comparison group might receive what is sometimes called "business-as-usual." That is, the comparison group receives whatever the school or district is currently using or doing in a particular area. Business-as-usual generally refers to situations in which the standard or frequent practice across the nation is a relatively undefined education treatment. However, business-as-usual may also refer to situations in which a branded intervention (e.g., a published curriculum) is implemented with no more support from the developers of the program than would be available under normal conditions. In either case, *using a business-as-usual comparison group is acceptable.* When business-as-usual is one or another branded intervention, applicants should specify the treatment or treatments received in the comparison group. In all cases, applicants should account for the ways in which what happens in the comparison group are important to understanding the net impact of the experimental treatment. As noted in the preceding paragraph, in strong applications, investigators should propose strategies and measures for comparing the intervention and comparison groups on key features of the intervention.

The purpose here is to obtain information useful for *post hoc* explanations of why the experimental treatment does or does not improve student learning relative to the counterfactual.

Finally, the applicant should describe strategies they intend to use to avoid contamination between treatment and comparison groups.

(vii) *Mediating and moderating variables*. Observational, survey, or qualitative methodologies are encouraged as a complement to experimental methodologies to assist in the identification of factors that may explain the effectiveness or ineffectiveness of the intervention. Mediating and moderating variables that are measured in the intervention condition that are also likely to affect

outcomes in the comparison condition should be measured in the comparison condition (e.g., student time-on-task, teacher experience/time in position).

The evaluation should be designed to account for sources of variation in outcomes across settings (i.e., to account for what might otherwise be part of the error variance). Applicants should provide a theoretical rationale to justify the inclusion (or exclusion) of factors/variables in the design of the evaluation that have been found to affect the success of education programs (e.g., teacher experience, fidelity of implementation, characteristics of the student population). The research should demonstrate the conditions and critical variables that affect the success of a given intervention. The most scalable interventions are those that can produce the desired effects across a range of education contexts.

(viii) *Cost of the intervention*. Strong applications will include a Cost-Feasibility analysis to assess the financial costs of program implementation and assist schools in understanding whether implementation of the program is practicable given their available resources. Data should be collected on the monetary expenditures for the resources, or "ingredients," that are required to implement the program. Financial costs for personnel, facilities, equipment, materials, and other relevant inputs should be included. Annual costs should be assessed to adequately reflect expenditures across the lifespan of the program. For Goal Three applications, the Institute is *not* asking applicants to conduct an economic evaluation of the program (e.g., cost-benefit, cost-utility, or cost-effectiveness analyses), although applicants may propose such evaluation activities if desired. However, for Goal Four applications, the Institute does encourage applicants to conduct an economic evaluation. For additional information on how to calculate the costs of a program or conduct an economic evaluation, applicants might refer to Levin and McEwan (2001).

(ix) *Data analysis*. All proposals must include detailed descriptions of data analysis procedures. For quantitative data, specific statistical procedures should be described. The relation between hypotheses, measures, independent and dependent variables should be clear. For qualitative data, the specific methods used to index, summarize, and interpret data should be delineated.

Most evaluations of education interventions involve clustering of students in classes and schools and require the effects of such clustering to be accounted for in the analyses, even when individuals are randomly assigned to condition. Such circumstances generally require specialized multilevel statistical analyses using computer programs designed for such purposes. Strong applications will provide sufficient detail for reviewers to judge the appropriateness of the data analysis strategy. For random assignment studies, applicants need to be aware that typically the primary unit of analysis is the unit of random assignment.

d. Requirements for single subject designs. By single-subject designs, the Institute refers to experimental studies using reversal or multiple baseline or interrupted time series designs intended to demonstrate a causal relationship between two variables using a small number of participants or cases. We are not referring to descriptive case studies.

(i) *Sample*. Applicants must define the criteria used for selecting participants and the setting from which participants are recruited with sufficient detail to allow other researchers to identify

similar individuals from similar settings. Defining selection criteria typically requires specifying a particular disability, the measurement instrument, and criterion used to identify the disability.

(ii) *Intervention*. In addition to meeting the requirements for interventions listed above in subsection 4.D.b. *Requirements for proposed intervention*, applicants must describe the intervention in sufficient detail to allow other researchers to reliably replicate the intervention. Applicants must clearly specify how, when, and under what conditions the intervention will be implemented.

(iii) *Fidelity of implementation*. Applicants must describe how treatment fidelity will be measured, frequency of assessments, and what degree of variation in treatment fidelity will be accepted over the course of the study.

(iv) *Comparison condition*. Applicants must describe the baseline or comparison condition in sufficient detail to allow other researchers to replicate the baseline condition.

(v) *Measures*. Applicants must identify and describe the dependent variables (DVs) or outcome measures, provide technical information on the reliability and validity of the measures, detail procedures for collecting observations, and where applicable, specify procedures for determining inter-observer reliability and monitoring inter-observer reliability during the study and over both baseline and treatment conditions.

(vi) *Design and analysis*. Applicants must provide a detailed research design and describe how potential threats to internal and external validity will be addressed. Applicants should consider the anticipated size of the intervention effect, variability in response to treatment within participants across time, variability in response to treatment between subjects, and the number of replications. In essence, what criteria will the applicant use to determine if the response to the treatment is large enough and sufficiently replicated to support a causal conclusion and to show promise that the effects would be generalizable. Applicants are expected to describe what statistical procedures (e.g., time series analyses), if any, will be employed to determine if the change is significant.

e. Personnel and resources. Competitive applicants will have research teams that collectively demonstrate expertise in (a) the relevant academic content areas (e.g., reading, science, and where applicable, teacher education), (b) implementation of and analysis of results from the research design that will be employed, and (c) working with teachers, schools, or other education delivery settings that will be employed.

An applicant may involve curriculum developers or distributors (*including for-profit entities*) in the project, from having the curriculum developers as full partners in its proposal to using off-the-shelf curriculum materials without involvement of the developer or publisher. Involvement of the curriculum developer or distributor must not jeopardize the objectivity of the evaluation. *Collaborations including for-profit distributors of curriculum materials should justify the need for Federal assistance to undertake the evaluation of programs that are marketed to consumers and consider sharing the cost of the evaluation.*

Competitive applicants will have access to institutional resources that adequately support research activities and access to schools in which to conduct the research. Strong applicants will document the availability and cooperation of the schools or other education delivery settings that will be required to carry out the research proposed in the application via a letter of support from the education organization.

f. Awards. Typical awards for projects at this level will be $250,000 to $750,000 (total cost = direct + indirect costs) per year for a maximum of 4 years. Larger budgets will be considered if a compelling case can be made for such support. The size of the award depends on the scope of the project.

E. Requirements for Goal Four (Effectiveness Evaluations of Interventions Implemented at Scale)

a. Purpose of effectiveness evaluations. Through all of its research programs that include the Effectiveness Evaluations goal (Goal Four), the Institute intends to support impact evaluations of interventions – programs, practices, policies to determine whether or not fully developed interventions are effective when they are implemented under conditions that would be typical if a school district or other education delivery setting were to implement them (i.e., without special support from the developer or the research team) across a variety of conditions (e.g., different student populations, different types of schools). The key differences between Effectiveness Evaluations (Goal Four) and Efficacy Evaluations (Goal Three), as the Institute uses these terms, have to do with the delivery of the intervention and the diversity of the sample. Effectiveness Evaluations require the intervention to be implemented at a distance from the researcher/developer of the intervention. That is, the researchers must not be heavily involved in making the intervention work. The intervention must be implemented in the school or other authentic education setting as it would be if the school, or entity, had purchased and implemented the intervention on its own without any involvement in a research study. Second, Effectiveness Evaluations require sufficient diversity in the sample of schools, classrooms, or students to ensure appropriate generalizability. The latter typically requires a larger sample than an Efficacy Evaluation. As is true for Goal Three studies, for Goal Four studies, depending on the research question of interest, the control group may receive a well-defined alternative treatment, or may receive whatever programs and practices are already currently available and utilized in the treatment setting (business-as-usual control group). Finally, the Institute invests in Effectiveness Evaluations for interventions that have strong prior evidence of the efficacy of the intervention.

b. Requirements for proposed intervention. To be considered for Goal Four awards, applicants must provide a clear rationale for the *practical* importance of the intervention. Applicants should address three questions related to practical importance. (i) Is the intervention likely to produce educationally meaningful effects on outcomes that are important to educational achievement (e.g., grades, achievement test scores) and, therefore, are of interest to parents, teachers, and education decision makers? (ii) Is the intervention reasonably affordable to schools and other education delivery entities? (iii) Is the intervention designed so that it is feasible for schools and other education delivery entities to implement the intervention? In addition, applicants should clearly describe the components of the intervention. Interventions appropriate for study under Goal Four are interventions that have not yet been implemented at scale but have evidence of the efficacy of the program on a limited scale.

(i) *Educationally meaningful effects*. Applicants must provide *strong* evidence of the efficacy of the program as implemented on a small scale to justify the proposal to conduct a large-scale

evaluation of the effectiveness of the intervention. As an example of strong evidence of efficacy, an applicant might describe the results of two or more small scale, rigorously conducted evaluations using random assignment to intervention and comparison conditions in which the efficacy of the intervention is demonstrated with different populations of students (e.g., students from middle income families in a suburban school district and students from low income families in a poor rural school district). Alternatively, a single efficacy evaluation might have involved schools from more than one district and included a diverse population of students and alone could constitute sufficient evidence of the efficacy of the intervention. Importantly, the evidence of efficacy must be based on the results of randomized field trials, or well-designed quasi-experimental evaluations.

Evidence for efficacy from single-subject experimental designs would involve multiple studies in different settings that demonstrate causal effects.

Strong applications will include information on the size and statistical significance of the effects that were obtained through efficacy trials. Effect sizes and confidence limits should typically be calculated based on a unit of analysis that is the same as the unit of assignment. For example, the results of an efficacy trial in which classrooms were assigned to conditions should be analyzed based on classroom means rather than results from individual students. Applicants should indicate clearly (e.g., including the statistical formula) how the effect size was calculated when they use effect sizes as part of the rationale for justifying their intervention. Furthermore, information on effect sizes is more useful to reviewers when sufficient context for interpreting the effect sizes is provided.

(ii) *Affordable for schools*. Strong applications will provide documentation of the per-pupil or per-school cost for the intervention and provide reviewers with sufficient context for evaluating the affordability of the intervention.

(iii) *Feasible implementation*. The materials, training procedures, organizational arrangements, and all other aspects of the intervention must be developed to the point where the intervention is ready to be implemented under real-world circumstances in a real-world way. Strong applications will provide reviewers with sufficient information to evaluate whether implementation of the intervention is feasible for schools and other education entities under normal conditions (i.e., without any support from the researchers or developers of the intervention that would not typically be available to entities wanting to implement the intervention outside of a research study). For example, applicants might include results from prior efficacy trials indicating the level of support provided to teachers implementing the intervention and the level of fidelity attained.

(iv) *Components of the intervention*. All applicants should clearly describe the components of the intervention. When applicants clearly describe the components of the intervention, reviewers are better able to evaluate the relation between the intervention and the outcome measures (e.g., do the proposed measures tap the constructs that the intervention is intended to address?). Strong applications will also include detailed descriptions of what the comparison group experiences. By clearly describing the components of the intervention and the comparable treatment (e.g., curriculum, instructional approach, professional development) that the comparison group will

receive, reviewers are better able to judge whether (a) the intervention is sufficiently different from the comparison treatment so that one might reasonably expect a difference in student outcomes, and (b) fidelity measures and observations of the comparison group are sufficiently comprehensive and sensitive to identify and document critical differences between what the intervention and comparison groups receive.

c. Implementation of the intervention. One goal of effectiveness evaluations of interventions is to determine if programs are effective when the developers of the program do not provide any more support than would be available under normal conditions. That is, the program should be implemented as it would be if the schools or other entities that are delivering the program were to obtain the program on their own and decide to use it apart from participation in any research and evaluation study. A second goal is to determine if programs implemented under these conditions are effective in a variety of settings. Interventions that are effective at scale are those that can produce the desired effects across a range of education contexts. For Goal Four, the applicant should detail the conditions under which the intervention will be implemented – including explicitly detailing what involvement the researcher/developer will have in the implementation of the intervention and justifying this level of involvement – and provide procedures that will capture the conditions and critical variables that affect the success of a given intervention.

By addressing the implementation of the intervention and the requirements for the intervention in section 5.E.b, Goal Four applicants are addressing the significance of their proposal.

Applicants deciding whether their proposal is more appropriate for Goal Two or Goal Three or Goal Four may find the decision tree to be useful.

d. Methodological requirements. **Under Goal Four, the proposed research design must be appropriate for answering the research questions of hypotheses that are posed.** For the methodological requirements for Goal Four projects, please refer to the methodological requirements listed under Goal Three.

e. Personnel and resources. Competitive applicants will have research teams that collectively demonstrate expertise in (a) the relevant academic content areas (e.g., reading, science, and where applicable, teacher education); (b) implementation of, and analysis of results from, the research design that will be employed; and (c) working with teachers, schools, or other education delivery settings that will be employed.

Competitive applicants will have access to institutional resources that adequately support research activities and access to schools in which to conduct the research. Strong applicants will document the availability and cooperation of the schools or other education delivery settings that will be required to carry out the research proposed in the application via a letter of support from the education organization.

An applicant may involve developers or distributors (*including for-profit entities*) of the intervention in the project, from having the developers as full partners in its proposal to using off-the-shelf curriculum materials without involvement of the developer or publisher. However, involvement of the curriculum developer or distributor must not jeopardize the objectivity of the evaluation. Strong applications will carefully describe the role, if any, of the developer/distributor of the intervention. Developers may not

provide any training or support for the implementation that is not normally available to users of the intervention. Strong applications will describe how objectivity in the evaluation will be maintained; for example, if the applicant is the developer of the intervention, the applicant might propose to have data collection and data analyses conducted by individuals who are *not* part of the organization that developed or distributes the intervention.

Collaborations including for-profit distributors of curriculum materials should justify the need for Federal assistance to undertake the evaluation of programs that are marketed to consumers and consider sharing the cost of the evaluation.

f. ***Awards.*** The scope of Goal Four projects may vary. A smaller project might involve several schools within a large urban school district in which student populations vary in terms of SES, race, and ethnicity. A larger project might involve large numbers of students in several school districts in different geographical areas.

Awards for Goal Four projects may go up to a limit of $6,000,000 (total cost = direct + indirect costs) over a 5 year period. Typical awards are less. Awards depend in part on the number of sites, cost of data collection, and cost of implementation. The size of the award depends on the scope of the project.

F. Requirements for Goal Five (Measurement)

Across the Institute's research programs, the Measurement goals differ in purpose. Requirements described below apply to topics in the Special Education Research Grants Program.

a. Purpose of measurement proposals. Through Goal Five, the Institute intends to support the development of assessment tools for four purposes including screening, diagnosis, progress monitoring, and outcome evaluation.

Screening involves brief assessments conducted with all children at the beginning of the school year and targets skills that are strongly predictive of important future outcomes. The goal of screening is to identify children who are at risk of failure and likely to need additional or alternative forms of instruction either to supplement or supplant conventional instruction.

Diagnosis refers to more in-depth assessment of strengths and weaknesses in a particular domain, and should not be confused with assessment for the purpose of labeling children with disabilities. The goal of diagnostic assessment is to provide teachers with a profile of skills and deficits to guide instruction.

Progress monitoring is assessment of students' performance on critical criterion performance skills a minimum of three times a year but typically more frequently (e.g., weekly, monthly, or quarterly) using alternate forms of a test. The purpose of progress monitoring is to estimate rates of improvement, to identify children who are not demonstrating adequate progress and, therefore, require supplementary instruction. Progress monitoring assessment provides information on a student's performance on an ongoing basis (e.g., weekly data on whether students are benefiting from a particular type of instruction). This information can be used to compare different types of instruction for a particular child on a frequent basis. Such monitoring provides a means for designing or redesigning instructional programs to accommodate the instructional needs of students with disabilities.

Outcome assessment is designed to determine if students have achieved or not achieved grade-level performance or if their performance has improved or not improved.

b. Requirements for measurement proposals in the Special Education Research Grants Programs. Applicants under Goal Five should propose to develop assessments that can be used in education delivery settings for students with disabilities from pre-kindergarten through grade 12. Applications that would be appropriate for consideration under Goal Five include, but are not limited to: (a) proposals to develop new assessments; (b) proposals to modify or adapt existing assessments; and (c) proposals to adapt assessments originally designed and used for research purposes for broader use in instructional settings.

Applicants must provide a compelling rationale to support the development of the proposed assessment. Reviewers will consider the strength of theoretical foundation for the proposed assessment, the existing empirical evidence supporting the proposed assessment, and whether the proposed assessment duplicates existing assessments. In developing these assessments, researchers should keep in mind the pragmatic constraints (e.g., number of students, limited class time, time required to train teachers to use the assessments, costs) that teachers and administrators will consider to determine whether the instrument is a viable option for use in classrooms and other education delivery settings. Applications should provide sufficient description of the proposed assessment and how it could be utilized within education delivery settings for reviewers to judge the practicality of the proposed assessment for instructional purposes.

By describing the theoretical and empirical support for the proposed assessment, the practical utility of the assessment, and the components of the assessment, applicants are addressing aspects of the significance of their proposal.

c. Methodological requirements. Applicants should detail the proposed procedures for developing the assessment instrument (e.g., procedures for establishing construct validity, for selecting items to be used in the assessment, or for obtaining representative responses to questions). Applicants must clearly describe the research plans for assessing the validity and reliability of the instrument. Applicants should describe the characteristics and size of samples to be used in each study, procedures for collecting data, measures to be used, and data analytic strategies.

d. Personnel and resources. Competitive applicants will have research teams that collectively demonstrate expertise in (a) content area, (b) assessment, (c) implementation of, and analysis of results from, the research design that will be employed, and (d) working with teachers, schools, or other education delivery settings in which the proposed assessment might be used. Competitive applicants will have access to institutional resources that adequately support research activities and access to schools in which to conduct the research.

e. Awards. Typical awards under Goal Five will be $150,000 to $400,000 (direct plus indirect cost) per year for up to 4 years. Larger budgets will be considered if a compelling case can be made for such support. The size of award depends on the scope of the project.

PART V GENERAL SUBMISSION AND REVIEW INFORMATION

6. APPLICATIONS AVAILABLE

Application forms and instructions for the electronic submission of applications will be available for the programs of research listed in this RFA from the following web site:

https://ies.constellagroup.com

by the following dates:

Topics with July 27, 2006 Transmittal Deadline	June 15, 2006
Topics with November 16, 2006 Transmittal Deadline	October 5, 2006

The application form approved for use in the competitions specified in this RFA is the new, government-wide SF424 Research and Related (R&R) Form (OMB Number 4040-0001).

7. MECHANISM OF SUPPORT

The Institute intends to award grants pursuant to this request for applications. The maximum length of the award period varies by goal. The maximum award length for each goal ranges from two to five years. Please see details for each goal in the General Requirements of the Proposed Research section of the announcement.

8. FUNDING AVAILABLE

The size of the award depends on the scope of the project. Please see specific details in the Requirements of the Proposed Research section of the announcement. Although the plans of the Institute include the research programs (topics) described in this announcement, awards pursuant to this request for applications are contingent upon the availability of funds and the receipt of a sufficient number of meritorious applications. The number of projects funded under a specific topic and goal depends upon the number of high quality applications submitted to that topic and goal. The Institute does not have plans to award a specific number of grants under each particular topic and goal.

9. ELIGIBLE APPLICANTS

Applicants that have the ability and capacity to conduct scientifically valid research are eligible to apply. Eligible applicants include, but are not limited to, non-profit and for-profit organizations and public and private agencies and institutions, such as colleges and universities.

10. SPECIAL REQUIREMENTS

Research supported through this program must be relevant to U.S. schools.

Recipients of awards are expected to publish or otherwise make publicly available the results of the work supported through this program. The Institute asks IES-funded investigators to submit voluntarily to the Educational Resources Information Center (ERIC) an electronic version of the author's final manuscript upon acceptance for publication in a peer-reviewed journal, resulting from research supported in whole or in part, with direct costs from the Institute. The author's final manuscript is defined as the final version accepted for journal publication, and includes all modifications from the peer review process. Details of the Institute's policy are posted on the Institute's website at http://ies.ed.gov.

Applicants should budget for one meeting each year in Washington, DC, with other grantees and Institute staff. At least one project representative should attend the two-day meeting.

The Institute anticipates that the majority of the research funded under this announcement will be conducted in field settings. Hence, the applicant is reminded to apply its negotiated off-campus indirect cost rate, as directed by the terms of the applicant's negotiated agreement.

Research applicants may collaborate with, or be, for-profit entities that develop, distribute, or otherwise market products or services that can be used as interventions or components of interventions in the proposed research activities. Involvement of the developer or distributor must not jeopardize the objectivity of the evaluation. Applications from or collaborations including such organizations should justify the need for Federal assistance to undertake the evaluation of programs that are marketed to consumers and consider sharing the cost of the evaluation, as well as sharing all or a substantial portion of the cost of the implementation of the product being evaluated (e.g., sharing the cost of textbooks for students).

11. LETTER OF INTENT

A letter indicating a potential applicant's intent to submit an application is optional, but encouraged, for each application. The letter of intent must be submitted electronically by the date listed at the beginning of this document, using the instructions provided at the following web site:

https://ies.constellagroup.com/

The letter of intent should include a descriptive title, the topic and goal which the application will address, and brief description of the research project (about 3,500 characters including spaces, which is approximately one page, single-spaced); the name, institutional affiliation, address, telephone number and e-mail address of the principal investigator(s); and the name and institutional affiliation of any key collaborators. The letter of intent should indicate the duration of the proposed project and provide an estimated budget request by year, and a total budget request. Although the letter of intent is optional, is not binding, and does not enter into the review of subsequent applications, the information that it contains allows Institute staff to estimate the potential workload to plan the review.

12. SUBMITTING AN APPLICATION

Applications must be submitted **electronically by 8:00 p.m**. **Eastern time** on the application receipt date, using the ED standard forms and the instructions provided at the following web site:

https://ies.constellagroup.com

Potential applicants should check this site for information about the electronic submission procedures that must be followed and the software that will be required.

13. CONTENTS OF APPLICATION

All applications and proposals for Institute funding must be self-contained within specified page limitations. Internet Web site addresses (URLs) may not be used to provide information necessary to the review because reviewers are under no obligation to view the Internet sites.

All of the instructions and requirements regarding (a) submission of the application, (b) acceptable format of the application, (c) page limitations, and (d) required forms will be provided on the application submission website (https://ies.constellagroup.com).

In this section, the Institute provides instructions regarding the content of the (a) project summary/abstract, (b) project narrative, (c) bibliography and references cited, (d) biographical sketches of senior/key project personnel, (e) narrative budget justification (f) subaward budgets, (g) Appendix A, and (h) Appendix B, and (i) additional forms.

A. Project Summary/Abstract

The project summary/abstract will be submitted as a .PDF attachment, is limited to 1 single-spaced page and must adhere to the margin, format, and font size requirements described in the project narrative section. The project summary/abstract should include: (1) The title of the project; (2) the RFA topic and goal under which the applicant is applying (e.g., development, efficacy); and brief descriptions of (3) the purpose (e.g., to develop and obtain preliminary (pilot) data on the association between exposure to a reading comprehension intervention for struggling high school readers and subsequent reading outcomes); (4) the setting in which the research will be conducted (e.g., rural high schools in Alabama); (5) the population(s) from which the participants of the study(ies) will be sampled (age groups, race/ethnicity, SES, the sampling scheme (e.g., simple random, systematic, purposive, clustered, multi-stage)); (6) if applicable, the intervention or assessment to be developed or evaluated or validated; (7) if applicable, the control or comparison condition (e.g., what will participants in the control condition experience); (8) the primary research method (e.g., experimental (including how and at what level randomization will be applied), quasi-experimental, single-subject, correlational, observational, descriptive); (9) measures of key outcomes; and (10) data analytic strategy.

B. Project Narrative

The project narrative will be submitted as a .PDF attachment. Incorporating the requirements outlined under the section on Requirements of the Proposed Research, the *project narrative* provides the majority of the information on which reviewers will evaluate the proposal. The research narrative must include the four sections described below (a. "Significance" through d. "Resources") in the order listed and must conform to the format requirements described on the application submission website.

The project narrative is limited to **25 single-spaced pages** for all applicants.

The 25-page limit for the project narrative does not include any of the SF 424 forms, the one-page summary/abstract, the appendices, research on human subjects information, bibliography and references cited, biographical sketches of senior/key personnel, narrative budget justification, sub award budget information or certifications and assurances. **Reviewers are able to conduct the highest quality review when applications are concise and easy to read, with pages numbered consecutively**.

For the purposes of applications submitted under this RFA, a “page” is 8.5 in. x 11 in., on one side only, with 1 inch margins at the top, bottom, and both sides. Text must be single spaced in the narrative. To ensure that the text is easy for reviewers to read and that all applicants have the same amount of available space in which to describe their projects, applicants must adhere to the type size and format specifications for the entire narrative including footnotes. **It is very important that applicants review**

carefully the "Application Format Requirements" outlined in *Fiscal Year 2007 Application Package Highlights*.

a. ***Significance***. In the General Requirements of the Proposed Research section, the Institute details the information that the applicant should include in order to address the significance of proposed Goal 1, Goal 2, Goal 3, Goal 4, and Goal 5 projects.

For projects in which an intervention or assessment is proposed (whether to be developed or to be evaluated) may use Appendix B to include up to 10 pages of examples of materials to be used by participants (e.g., curriculum materials for students, professional development materials for teachers or education leaders, computer screens depicting how information is presented to students, examples of test items for a proposed assessment). Applicants should be aware that all narrative text describing the theoretical background, empirical support, components of the assessment or intervention, or any other aspect of the proposal must be included within the 25-page project narrative. The only materials that are allowed in Appendix B are examples of the materials that are used by or presented to participants in the intervention or assessment.

b. ***Methods***. The Methods section of the application should address all of the requirements detailed in the methodological requirements sections for Goal One, Goal Two, Goal Three, Goal Four, and Goal Five.

(i) Include clear, concise hypotheses or research questions;

(ii) Present a clear description of, and a rationale for, the sampling design and procedures, and the sample or study participants, including justification for exclusion and inclusion criteria and, where groups or conditions are involved, strategies for assigning participants to groups;

(iii) Provide clear descriptions of, and rationales for, data collection procedures;

(iv) Provide clear descriptions of and justification for measures to be used, including information on the reliability and validity of measures; and

(v) Present a detailed data analysis plan that justifies and explains the selected analysis strategy, shows clearly how the measures and analyses relate to the hypotheses or research questions, and the study design, and indicates how the results will be interpreted. Quantitative studies should, where sufficient information is available, include an appropriate power analysis with sufficient detail and context for reviewers to understand the assumptions on which the power analysis was based.

c. ***Personnel***. Include brief descriptions of the qualifications of key personnel (information on personnel should also be provided in their curriculum vitae). For each of the key personnel, please describe the roles, responsibilities, and percent of time devoted to the project.

d. ***Resources***. Provide a description of the resources available to support the project at the applicant's institution and in the field settings in which the research will be conducted.

C. Bibliography and References Cited
This section will be submitted as a .PDF attachment. Please include complete citations, including titles and all authors, for literature cited in the research narrative.

D. Biographical Sketches of Senior/Key Personnel
This section will be submitted as a .PDF attachment. Abbreviated curriculum vitae should be provided for the principal investigator(s) and other key personnel. *Each vita is limited to 4 pages and should include information sufficient to demonstrate that personnel possess training and expertise commensurate with their duties (e.g., publications, grants, relevant research experience) and have adequate time devoted to the project to carry out their duties (e.g., list current and pending grants with the proportion of the individual's time allocated to each project).* The curriculum vita must adhere to the margin, format, and font size requirements described in the project narrative section.

E. Narrative Budget Justification
This section will be submitted as a .PDF attachment and should provide sufficient detail to allow reviewers to judge whether reasonable costs have been attributed to the project. The budget justification should correspond to the itemized breakdown of project costs that is provided in the Research & Related Budget (SF 424) Sections A & B; C, D, &E; and F-K. It should include the time commitments and brief descriptions of the responsibilities of key personnel. For consultants, the narrative should include the number of days of anticipated consultation, the expected rate of compensation, travel, per diem, and other related costs. A justification for equipment purchase, supplies, travel and other related project costs should also be provided in the budget narrative for each project year outlined in the Research & Related Budget (SF 424).

For those applications that include a subaward(s) for work conducted at collaborating institutions, the narrative should also provide the details about the subaward(s). Include the actual subaward budgets as a separate attachment. (See below "Subaward Budget".)

Applicants should use their institution's federal indirect cost rate and use the off-campus indirect cost rate where appropriate (see instructions under Section 9 Special Requirements). If less than 75 percent of total indirect costs are based on application of the off-campus rate, the applicant should provide a detailed justification.

F. Subaward Budget
This section will be submitted as a .PDF attachment. For applications that include a subaward(s) for work conducted at collaborating institutions, applicants must submit an itemized budget spreadsheet for each subaward for each project year. As noted above, the details of the subaward costs should be included in the Narrative Budget Justification. An Excel spreadsheet will be provided in the electronic application package to allow applicants to enter the subaward budget information in accordance with the prescribed format. Applicants will complete the spreadsheet in Excel format, convert it to a .PDF file, and then upload it as an attachment.

G. Appendix A

Appendix A should be included at the end of the Project Narrative, and will be submitted as part of the same .PDF attachment.

The purpose of A*ppendix A* is to allow the applicant to include any figures, charts, or tables that supplement the research text, examples of measures to be used in the project, and letters of agreement from partners (e.g., schools) and consultants. In addition, in the case of a resubmission, the applicant may use up to 3 pages of the appendix to describe the ways in which the revised proposal is responsive to prior reviewer feedback. These are the only materials that may be included in Appendix A; all other materials will be removed prior to review of the application. Narrative text related to any aspect of the project (e.g., descriptions of the proposed sample, the design of the study, or previous research conducted by the applicant) must be included in the research or postdoctoral training narrative. Letters of agreement should include enough information to make it clear that the author of the letter understands the nature of the commitment of time, space, and resources to the research project that will be required if the application is funded. The appendix is limited to 15 pages. The Institute recognizes that some applicants may have more letters of agreement will be accommodated by the 15-page limit. In such instances, applicants should include the most important letters of agreement and may list the letters of agreement that are not included in the application due to page limitations.

H. Appendix B (optional)

If applicable, Appendix B should be included at the end of the Project Narrative, following Appendix A, and will be submitted as part of the same .PDF attachment.

Appendix B applies to applications under all topics in this RFA. The purpose of Appendix B is to allow applicants who are proposing an intervention or assessment to include examples of curriculum material, computer screens, test items, or other materials used in the intervention or assessment. These are the only materials that may be included in Appendix B; all other materials will be removed prior to review of the application. Appendix B is limited to 10 pages. Narrative text related to the intervention (e.g., descriptions of research that supports the use of the intervention/assessment, the theoretical rationale for the intervention/assessment, or details regarding the implementation or use of the intervention/assessment) must be included in the 25-page research narrative.

I. Additional Forms

Please note that applicants selected for funding will be required to submit the following certifications and assurances before a grant is issued:

(1) SF 424B-Assurances-Non-Construction Programs
(2) ED-80-0013-Certification Regarding Lobbying, Debarment, Suspension and other Responsibility Matters; and Drug-Free Workplace Requirements
(3) ED 80-0014 (if applicable)-Lower Tier Certification
(4) SF-LLL (if applicable) - Disclosure of Lobbying Activities
(5) Protection of Human Research Subjects assurance and/or Institutional Review Board certification, as appropriate

14. APPLICATION PROCESSING

Applications must be received by **8:00 p.m. Eastern time** on the application receipt date listed in the heading of this request for applications. Upon receipt, each application will be reviewed for

completeness and for responsiveness to this request for applications. Applications that do not address specific requirements of this request will be returned to the applicants without further consideration.

15. PEER REVIEW PROCESS

Applications that are complete and responsive to this request will be evaluated for scientific and technical merit. Reviews will be conducted in accordance with the review criteria stated below by a panel of scientists who have substantive and methodological expertise appropriate to the program of research and request for applications.

Each application will be assigned to one of the Institute's scientific review panels. At least two primary reviewers will complete written evaluations of the application, identifying strengths and weaknesses related to each of the review criteria. Primary reviewers will independently assign a score for each criterion, as well as an overall score, for each application they review. Based on the overall scores assigned by primary reviewers, an average overall score for each application will be calculated and a preliminary rank order of applications prepared before the full peer review panel convenes to complete the review of applications.

The full panel will consider and score only those applications deemed to be the most competitive and to have the highest merit, as reflected by the preliminary rank order. A panel member may nominate for consideration by the full panel any proposal that he or she believes merits full panel review but would not have been included in the full panel meeting based on its preliminary rank order.

16. REVIEW CRITERIA FOR SCIENTIFIC MERIT

The goal of Institute-supported research is to contribute to the solution of education problems and to provide reliable information about the education practices that support learning and improve academic achievement and access to education for all students. Reviewers will be expected to assess the following aspects of an application in order to judge the likelihood that the proposed research will have a substantial impact on the pursuit of that goal. Information pertinent to each of these criteria is also described above in the section on Requirements of the Proposed Research and in the description of the research narrative, which appears in the section on Contents and Page Limits of Application.

a. Significance. Does the applicant present a compelling rationale for the proposed project? Are there strong theoretical reasons, empirical support, and practical reasons to justify the development and/or evaluation of the proposed intervention or assessment? Does the applicant make a compelling case for the potential contribution of the project to the solution of an education problem? Does the applicant clearly describe the components of the intervention or assessment and the relations among the components? For cases in which the applicant proposes to develop or evaluate an intervention, does the applicant present a strong rationale justifying the need to evaluate the selected intervention (e.g., does prior evidence suggest that the intervention is likely to substantially improve student learning and achievement)?

b. Research Plan. Does the applicant present (a) clear hypotheses or research questions; (b) clear descriptions of and strong rationales for the sample, the measures (including information on the reliability and validity of measures), data collection procedures, and research design; and (c) a detailed and well-justified data analysis plan? Does the research plan meet the requirements described in the section on the Requirements of the Proposed Research and in the description of the research narrative in

the section on Contents and Page Limits? Is the research plan appropriate for answering the research questions or testing the proposed hypotheses?

c. Personnel. Does the description of the personnel make it apparent that the principal investigator, project director, and other key personnel possess the training and experience and will commit sufficient time to competently implement the proposed research?

d. Resources. Does the applicant have the facilities, equipment, supplies, and other resources required to support the proposed activities? Do the commitments of each partner show support for the implementation and success of the project?

17. RECEIPTS AND START DATE SCHEDULE

A. Letter of Intent Receipt Dates:

Topics with July 27, 2006 Transmittal Deadline	June 1, 2006
Topics with November 16, 2006, Transmittal Deadline	September 14, 2006

B. Application Transmittal Deadlines:

Topics with July 27, 2006 Transmittal Deadline	July 27, 2006
Topics with November 16, 2006, Transmittal Deadline	November 16, 2006

C. Earliest Anticipated Start Date:

Topics with July 27, 2006 Transmittal Deadline	March 1, 2007
Topics with November 16, 2006, Transmittal Deadline	July 1, 2007

18. AWARD DECISIONS

The following will be considered in making award decisions:

- Scientific merit as determined by peer review
- Responsiveness to the requirements of this request
- Performance and use of funds under a previous Federal award
- Contribution to the overall program of research described in this request
- Availability of funds

19. INQUIRIES MAY BE SENT TO:

A. Early Intervention, Early Childhood Special Education, and Assessment for Young Children with Disabilities Special Education Research Grants Program

Dr. Kristen Lauer
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: Kristen.Lauer@ed.gov
Telephone: (202) 219-0377

B. Mathematics and Science Special Education Research Grants Program

Dr. David Malouf
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: David.Malouf@ed.gov
Telephone: (202) 219-1309

C. Reading, Writing, and Language Development Special Education Research Grants Program

Dr. Celia Rosenquist
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: Celia.Rosenquist@ed.gov
Telephone: (202) 219-2024

D. Serious Behavior Disorders Special Education Research Grants Program

Dr. Patricia Gonzalez
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E. Special Education Research Grants Program on Assessment for Accountability

Dr. David Malouf
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Washington, DC 20208

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F. Special Education Research Grants Program on Individualized Education Programs and Individualized Family Service Plans

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Institute of Education Sciences
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Washington, DC 20208

Email: Kristen.Lauer@ed.gov

Telephone: (202) 219-0377

G. Secondary and Transition Services Special Education Research Grants Program
Dr. David Malouf
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555 New Jersey Avenue, NW
Washington, DC 20208

Email: David.Malouf@ed.gov
Telephone: (202) 219-1309

H. Research Grants Program on the Quality of Teacher and Other Service Providers for Students with Disabilities
Dr. David Malouf
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555 New Jersey Avenue, NW
Washington, DC 20208

Email: David.Malouf@ed.gov
Telephone: (202) 219-1309

I. Autism Spectrum Disorders– Special Education Research Grants Program
Dr. Celia Rosenquist
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: Celia.Rosenquist@ed.gov
Telephone: (202) 219-2024

J. Response to Intervention – Special Education Research Grants Program
Dr. Kristen Lauer
Institute of Education Sciences
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Washington, DC 20208

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20. PROGRAM AUTHORITY

20 U.S.C. 9501 et seq., the "Education Sciences Reform Act of 2002," Title I of Public Law 107-279, November 5, 2002. This program is not subject to the intergovernmental review requirements of Executive Order 12372.

21. APPLICABLE REGULATIONS

The Education Department General Administrative Regulations (EDGAR) in 34 CFR parts 74, 77, 80, 81, 82, 84, 85, 86 (part 86 applies only to institutions of higher education), 97, 98, and 99. In addition 34 CFR part 75 is applicable, except for the provisions in 34 CFR 75.100, 75.101(b), 75.102, 75.103, 75.105, 75.109(a), 75.200, 75.201, 75.209, 75.210, 75.211, 75.217, 75.219, 75.220, 75.221, 75.222, and 75.230.

22. REFERENCES

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