REQUEST FOR APPLICATIONS

Reading for Understanding
Research Initiative
CFDA Number: 84.305F

COMPETITION ROUND	OCTOBER
Letter of Intent Due Date (https://ies.constellagroup.com/)	08/03/2009
Application Package Available (http://www.grants.gov/)	08/03/2009
Application Due Date (http://www.grants.gov/)	10/01/2009

1. REQUEST FOR APPLICATIONS

In this announcement, the Institute of Education Sciences (Institute) requests applications for research projects that will contribute to its Reading for Understanding Research Initiative. The Institute will consider only applications that meet the requirements outlined below under Part II Requirements of the Proposed Research.

Separate funding announcements are available on the Institute's website that pertain to the other research and research training grant programs funded through the Institute (http://ies.ed.gov/funding).

2. BACKGROUND
A. The Challenge

Although the nation has invested billions of dollars in teaching children to read, many American students continue to struggle in reading. The latest data from the National Assessment of Educational Progress show that 1 out of 3 fourth-graders and 1 out of 4 eighth-graders cannot read at the basic level. That is, when reading grade appropriate material, these students do not understand what they read. It is difficult to imagine that students who cannot understand what they read will be successful in school or gain the skills necessary to succeed in the 21st century workforce.

Much of the research informing reading instruction today was grounded in the theoretical framework known as "The Simple View of Reading" (Gough & Tunmer, 1986).   According to this model, reading comprehension emerges from two distinct strands of knowledge, both of which are necessary for comprehension. One strand emphasizes word recognition skills; the other strand focuses on language comprehension and the skills needed to integrate oral language knowledge with word recognition skills. Decades of reading research have focused on word recognition skills – phonemic awareness, phonological processing, and decoding. This research is the foundation for developing instruction to enable children to "crack the code" – to get the words off the page – but mastering word level skills by themselves does not enable children to read with understanding. Word level skills are certainly necessary for children to be able to read but *not sufficient* for enabling children to read with understanding (Bowery, 2007; Nation, 2007).

B. Overview of the Reading for Understanding Research Initiative

Through the Reading for Understanding Research Initiative, the Institute intends to establish a Research and Development (R&D) Network that focuses on the development of reading comprehension from prekindergarten through Grade 12. The R&D Network will be comprised of a small number of Core Teams and one or two Assessment Teams. The collaborative efforts of the R&D Network will be guided by the Leadership Team, which will be comprised of two members from the Institute and two members from each of the funded Core and Assessment Teams.

The work of the Core Teams includes (a) examining underlying processes of reading comprehension and identifying malleable processes that may be targets of interventions for enhancing reading comprehension and (b) developing and testing interventions intended to improve reading comprehension. Each Core Team will be comprised of scientists who focus on (1) understanding the underlying cognitive processes (e.g., oral language and development of general knowledge, text processing, reading comprehension), (2) developing interventions (e.g., instructional approaches, curricula, technology, teacher professional development), and (3) evaluating the impact of interventions. In addition, each Core Team will include school and district personnel who will contribute to the development of interventions that are feasible and practical for implementation within existing school structures. The work of each Assessment Team is to (a) advance our theoretical understanding of reading comprehension, (b) conduct research that examines the underlying model of the development of reading comprehension from prekindergarten through Grade 12, and (c) develop and test a set of summative reading comprehension assessments.

The Institute intends for the Reading for Understanding R&D Network as a group to cover reading comprehension from prekindergarten through Grade 12.   Each Core Team will address the improvement of reading comprehension for a specific grade range that covers at least 5 years between prekindergarten and Grade 12: (a) early grades from prekindergarten through Grade 3 or 4 or 5; (b) middle grades from Grade 3 or 4 or 5 through Grade 8 or 9; and (c) upper grades from Grade 7 or 8 through Grade 12. The Institute anticipates that there will be some overlap across teams with respect to grades covered (e.g., one core team covering prekindergarten through Grade 4 and another core team covering grades 3 through 8). The reading comprehension assessment team(s) will cover assessment of reading comprehension from prekindergarten through Grade 12. The basic organizational structure for the R&D Network is depicted below. Although the Institute anticipates funding at least one Core Team in each age span and at least one Assessment Team, funding will depend on the receipt of meritorious applications and the availability of funds. In FY 2010 the Institute will not fund more than two applications that cover the same (or approximately the same – for example, prekindergarten through Grade 3 and prekindergarten through Grade 4) grade span. In FY 2010, the Institute will not fund more than two assessment team applications. The figure below is intended to show the general organizational structure of the R&D network (i.e., the leadership team with, for illustrative purposes only, five Core Teams, and one Assessment Team) as well as the anticipated organizational structure for one Core Team.
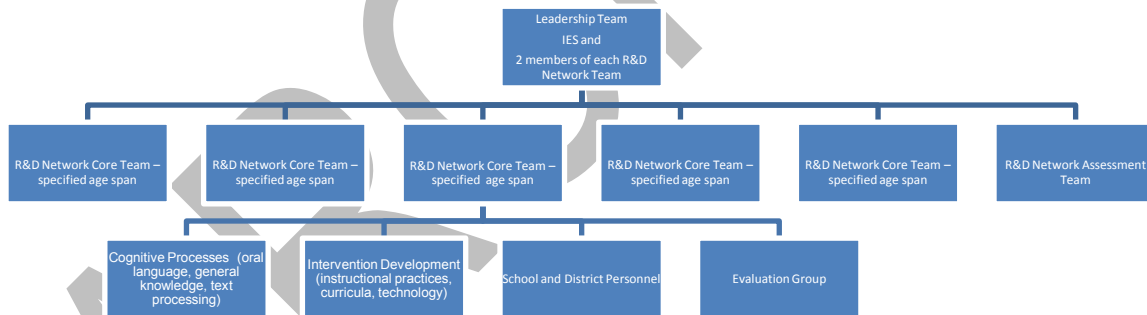
In conceptualizing the Reading for Understanding R&D Network, the Institute began with a general theoretical framework for reading comprehension that includes word level, oral language, and text

processing skills. Although the Institute recognizes that there are a number of models of reading comprehension, for the purpose of illustration, Perfetti's (1999) model, which integrates these three components, is described here. In this model, reading comprehension depends upon word knowledge to support both word recognition and comprehension processes. Perfetti specifies a word recognition component that includes a mapping from the visual presentation of the word to the phonological representation of the same word. This mapping is informed by reader's recognition of letters, as well as their ability to map the visual representation of the word to the word's meaning. Consequently, the process of word recognition informs (and is informed by) comprehension processes. Comprehension processes, in turn, depend upon the reader's ability to use word level information to build a representation of the text being made, to draw inferences from the text, and to represent the meaning of the text. In addition, he posits that comprehension depends upon the reader's linguistic and general knowledge.

As many reading researchers acknowledge, there are many ways in which a child can fail to comprehend what he or she has read. The research supported through the Reading for Understanding R&D Network will focus on developing interventions designed to improve the comprehension outcomes of students across the school years.

a. Oral language and general knowledge of the world
When children are first learning to read, the correlation between oral language and reading comprehension is low (e.g., Sticht & James, 1984). Word-level skills are the most important factor in determining reading comprehension for beginning readers. However, once children have mastered word level skills, the correlations between oral language and reading comprehension increase. Longitudinal studies indicate that measures of preschool children's oral language directly predict reading comprehension outcomes in fourth grade (e.g., Storch & Whitehurst, 2002).   Among college students, correlations of .90 have been obtained between oral language and reading comprehension (Gernsbacher, Varner, & Faust, 1990). Other studies of adult learners with varying reading skill levels also find high correlations between listening comprehension and reading comprehension (e.g., Braze, Tabor, Shankweiler, & Mencl, 2008), as well as substantial contributions of vocabulary knowledge to reading comprehension. In addition, a number of studies have documented strong correlations between background knowledge and reading comprehension (e.g., Anderson & Pearson, 1984; Bransford & Johnson, 1972). Whereas the growth of understanding of word recognition skills has been exponential over the past 25 years, substantially less is known about how to develop oral language and background knowledge and how to support the integration of that knowledge with word level skills to foster reading comprehension. Although we recognize that children with large vocabularies are typically skilled readers, research on how to develop oral language in the context of school is still in its infancy.

What are the challenges? Language development begins early, and there are vast differences in children's vocabularies by the time they reach preschool. The average vocabulary score of children entering Head Start in 2003 was 85.6, a standard deviation below the national average of 100.[1]   How can we change the trajectory of young children's oral language development for those children who enter preschool or kindergarten substantially behind their peers? We need to discover how to markedly increase the rate of growth of children's oral language and with that growth in oral language also growth in general knowledge about the world. How can we sustain an accelerated rate of growth for children who begin school behind their peers so that they can catch up and maintain a rate of growth sufficient to keep the reading gap closed across the school years?

b. Development of text processing skills for reading
In addition to enhancing word recognition skills and oral language, cognitive psychologists argue that reading instruction should incorporate a third element – a focus on developing the skills unique to

---

[1] FACES 2003 Research Brief: Children's Outcomes and Program Quality in Head Start. Downloaded from http://www.acf.hhs.gov/programs/opre/hs/faces/reports/research_2003/research_2003.pdf on February 20, 2009.

reading texts (e.g., O'Reilly & McNamara, 2007; Snow, 2002). Good readers build inferences, self-monitor their comprehension, understand different text structures, and use multiple strategies, such as question asking and summarization, to build understanding during reading. Although we do not yet know how each text-related skill contributes to reading comprehension (or if the full set of text-related skills has been identified), we are beginning to recognize the importance of teaching children text-related skills. However, there is limited research on how to teach children these skills.

c. Development and validation of reading comprehension measures

Research and practice to improve word-level skills benefited from fundamental research to identify and assess the component skills that constitute word-level decoding skills. Likewise, we need to develop and validate reading comprehension measures, particularly for use in classroom settings. Much of the progress made in understanding the development of word level skills has come from the availability of reliable, sensitive, and valid measures of those skills (e.g., Capsize & Fuchs, 2005; Connor, et al., 2009; Wood, Hill, Meyer, & Flowers, 2005). Equivalent measures that can be used in the context of reading comprehension instruction in upper elementary school and beyond simply do not exist.

3. PURPOSE OF THE READING FOR UNDERSTANDING RESEARCH INITIATIVE

The Reading for Understanding Research Initiative (Reading Initiative) is intended to support applied basic research to (a) identify underlying processes that are malleable and potential targets for intervention, (b) develop and evaluate interventions (e.g., instructional approaches, curricula, technology, teacher professional development programs) to improve reading comprehension for students in prekindergarten through Grade 12, and (c) develop and validate assessments of reading comprehension. The Reading Initiative will take a comprehensive approach to tackling the problem of improving reading comprehension. In addition, the Institute plans for the Reading Initiative to change the way in which research on reading has been conducted by accelerating the research process and creating a tightly linked network of researchers.

The progress we have made on teaching children word recognition skills is grounded in decades of research. However, as a nation, we simply cannot wait 20 or 30 more years to improve the reading comprehension of our children. One challenge is to accelerate the process that takes ideas from basic research through development, testing, and dissemination of interventions and assessments. Research typically proceeds in a linear fashion with individual researchers pursuing separate lines of work. Researchers apply theories to specific instantiations of problems – for example, the role of oral language in reading comprehension might be translated into an intervention designed to promote reading comprehension through classroom discussion around stories in first grade. The researchers would develop specific strategies for enhancing discussion, test, and refine them. If the researchers find that these discussion strategies can enhance comprehension on a small scale, they still need to develop a way to help large numbers of teachers adopt and use the strategies appropriately and then evaluate whether this scaled-up version improves reading comprehension. Another researcher might focus on enhancing oral language in fifth-grade science classes; another might target English language learners; and so on. Each line of research takes several years to complete, and once completed there is further delay in having the research disseminated to the practice community. But, the research process does not have to proceed in this fashion. Although there have been instances in which necessity or national pride has brought together teams of researchers to tackle a problem and generate solutions much more rapidly than would normally occur (e.g., the Manhattan Project, President Kennedy's race to the moon challenge), in general the path from discovering underlying processes to developing, testing, and ultimately disseminating successful education interventions is long and slow.

The Institute believes that rapid development and testing can be accomplished through tight networking and coordination of multiple multidisciplinary research and development (R&D) teams including experts in cognitive science, oral language, reading comprehension, measurement and assessment, curriculum and instruction, education technology, teacher professional development, and education systems. A group of tightly networked R&D teams would work together to (a) identify underlying cognitive processes involved

in reading comprehension and contribute to the theoretical foundation of reading comprehension and (b) create instructional strategies, technology, and other materials that would be *simultaneously* tested in multiple content areas and in several grades from prekindergarten through Grade 12. Rather than creating a single instantiation of a theoretical principle – say, an instructional strategy to be used in one content area and at one grade level – the instructional strategy is simultaneously adapted for use in several content domains and at several grade levels. It is tested and refined based on what is learned across the different versions. To enhance the utility and sustainability of interventions, school-level and district-level personnel would be included on the R&D teams to ensure that the created interventions are easily implemented within schools and that practices are sustainable within the infrastructure of schools and districts from the beginning. Rather than the typical practice of importing interventions from external researchers that need to be adapted to the school/district context, school and district staff would be involved in the creation of interventions that would be designed to work in classrooms and schools.

Accelerating the research process also depends on the coordination of efforts *across* the Core and Assessment Teams. The R&D Network Leadership Team will be instrumental in establishing a structure that will result in maximum collaboration and cooperation across the Teams in ways that lead to productive exchange of ideas, materials, and data. The Institute is establishing the R&D Network to create a research enterprise that tears down traditional walls that surround each research team and allows them to collectively advance our understanding of reading comprehension and improve reading outcomes. For example, Teams will be expected to share research findings with other members of the R&D Network so as to inform the ongoing work of other R&D Network Teams. The Core Teams will be expected to incorporate reading comprehension assessment measures developed by the Assessment Teams into their efficacy studies. The Institute intends for the value of the R&D Network to be much greater than the sum of the parts.

A 1968 editorial in *Science* attributed the accomplishments of the U.S. space program that ultimately led to a successful mission to the moon to the management efforts of the National Aeronautics and Space Administration (NASA). "Many of the large problems that confront us—for example, health care, the control of pollution, and the remaking of our urban living and working accommodations—differ from those of the space program in focusing on people rather than on rockets and space vehicles….But the social programs, like the space program, call for management structures linking government, industry, and universities. The new programs will involve research, planning, coordination, and testing. And they will be bothered by multiple divisions of responsibility, conflicting ambitions and interests, decisions to use existing facilities or to assemble new ones, multiple channels of communication and authority, and the problems of building up and of phasing down as priorities shift to new targets or as new opportunities open up. In all of these respects NASA has had extensive…experience; its procedures have been deliberately thought out; and its records are available" (Wolfle, 1968). President Kennedy's goal to land an American on the moon within 10 years seemed *almost* unimaginable in 1961. Surely the goal of teaching our children how to read for understanding is as important to each child and to the nation as a whole as being the first country to reach the moon. The Institute believes that a tightly networked and coordinated group of social scientists can work together to accomplish the goal of rapidly increasing the nation's ability to teach children how to read for understanding.

PART II REQUIREMENTS OF THE PROPOSED RESEARCH

4. BASIC REQUIREMENTS
A. Type of Application
Applicants must designate whether an application is for a Core Team award or for the Assessment Team award. Under this competition, a research team may receive only one award whether the award is a Core Team award or an Assessment Team award.

a. Core Team application

Applicants for a Core Team award must designate the grade range that will be covered by the proposal (e.g., Grades 5 through 9). The grade range must be for at least five consecutive grades but may cover more than five consecutive grades (e.g., prekindergarten through Grade 6). For illustrative purposes, the Institute anticipates a division by early, middle, and upper grades, which might be (a) early grades from prekindergarten through Grade 3 or 4 or 5, (b) middle grades from Grade 3 or 4 or 5 through Grade 8 or Grade 9, (c) upper grades from Grade 7 or 8 through Grade 12. However, applicants are free to propose projects that cover wider grade ranges (e.g., prekindergarten through Grade 6; Grade 6 through Grade 12). The Institute is not specifying exact grade ranges for the Core Team applications because of local variation in grouping of grades in buildings. However, applicants proposing to work with early grades must begin with prekindergarten, and applicants proposing to work with upper grades must end with Grade 12.

Although the Institute anticipates funding at least one Core Team in each age span, funding will depend on the receipt of meritorious applications and the availability of funds. In FY 2010 the Institute will not fund more than two applications that cover the same (or approximately the same – for example, prekindergarten through Grade 3 and prekindergarten through Grade 4) grade span.

b. Assessment Team application

Applicants for an Assessment Team award must cover reading comprehension assessment from prekindergarten through Grade 12. The Institute recognizes that assessment of "reading comprehension" for younger children may more appropriately be construed as assessment of component skills (e.g., oral language). The point, however, is that the Assessment Team will cover assessment relevant to reading comprehension across the span from prekindergarten (age 4) through Grade 12.

Although the Institute anticipates funding at least one assessment team, funding will depend on the receipt of meritorious applications and the availability of funds. In FY 2010, the Institute will not fund more than two assessment team applications.

5. REQUIREMENTS FOR R&D NETWORK CORE TEAM APPLICATION

Applications for R&D Network Core Team awards will be evaluated on five criteria as noted in section 19: (a) significance, (b) research plan, (c) personnel, (d) management plan, and (e) resources. Information on each of these criteria must be included in the project narrative.

A. Significance of the Project

R&D Network Core Teams will be conducting a variety of research projects over the course of the project period including (a) basic research to examine underlying processes and identify potential targets for intervention, (b) research to develop and test the feasibility, utility, and promise of interventions, and (c) evaluation of the efficacy of interventions. As detailed in the next section (II.5.B Methodological Requirements), applicants are required to describe three projects: (1) applied basic research to examine underlying cognitive processes involved in reading comprehension, (2) development of a set of interventions, and (3) evaluation of the efficacy an intervention. The Institute expects the work in Years 1 and 2 of the project to emphasize basic research on underlying processes and development of interventions. Work in subsequent years would progress to evaluation of interventions with continued research on underlying processes and development of additional interventions.

To judge the significance of the proposed program of research, reviewers will consider (a) the rationale for the proposed research on underlying cognitive processes and the potential contribution of the proposed line of research to advancing understanding of reading comprehension and (b) the theoretical and empirical rationale for the proposed set of interventions for enhancing oral language, the general theory of change for the set of interventions, the description of the intervention, and the potential contribution of the proposed line of research to advancing understanding of oral language.

B. Methodological Requirements

As noted above, R&D Network Core Teams will be conducting a variety of research projects over the course of project period. Methodological approaches appropriate for the different types of projects vary. Applicants for R&D Network Core Team awards must describe three projects in sufficient detail for reviewers to judge their capacity to conduct each type of research: (1) basic research to examine underlying cognitive processes involved in reading comprehension, (2) development of a set of interventions, and (3) efficacy evaluation of an intervention.

a. Basic research on underlying cognitive processes

Applicants must describe a line of applied basic research to examine underlying cognitive processes involved in reading comprehension and inform the development of interventions to improve reading comprehension.

(i)   Rationale.

The proposed research must be grounded in cognitive theory and supported by relevant prior empirical evidence, both of which must be well articulated. Applicants should articulate the potential contribution of this line of research to advancing scientific understanding of reading comprehension.

(ii)   Methodological approach.

Research questions or hypotheses must be clearly specified. Research methods must be appropriate for addressing the specified research questions or hypotheses.

The applicant should carefully describe the sample, measures (including reliability and validity), procedures proposed for collecting data, and the design of the study. If observational data are collected, applicants should describe how the data would be collected (e.g., procedures for maintaining inter-observer reliability), coded, and quantified to allow quantitative analyses predicting the relation between what was observed and the outcomes of interest.

The applicant must include detailed descriptions of data analysis procedures. The relation between hypotheses, measures, and independent and dependent variables should be well specified.

b. Development of a set of interventions

Applicants must describe a line of work to develop a set of interventions for improving oral language and general world knowledge (i.e., conceptual development). As discussed in the background section, oral language and world knowledge are hypothesized to be critical factors in reading comprehension. Although the Institute has funded the development and evaluation of vocabulary interventions, there continues to be a need for interventions that have the potential to accelerate growth in oral language and world knowledge in ways that are likely to close reading comprehension gaps. The set of interventions would represent multiple instantiations of a particular principle (or general theory of change). Applicants should describe how they would coordinate the simultaneous development of multiple instantiations of the basic intervention across grade levels and content areas.

(i)   Intervention, theory of change, and theoretical and empirical rationale.

Applicants should clearly describe the general theory of change for the set of interventions, provide a clear description of the basic intervention (e.g., curriculum, technology, instructional approach), and show how it would be adapted across grade levels and content areas. Applicants should provide a strong theoretical and empirical justification for the design and sequencing of the features or components of the intervention. Applicants should articulate the potential

contribution of this line of research to advancing scientific understanding of oral language development and reading comprehension.

(ii) Iterative development process.

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 intervention according to the theory of change that they describe. Applicants should explain (a) how they define "operating as intended" for the proposed intervention; (b) what data they will collect to determine how the intervention (or component) is operating; (c) how they will use the data they collect to revise the intervention; and (d) what criteria they will use to determine if the intervention (or component) operates as intended. The number of times a component or intervention is revised, implemented, observed, and revised depends on the complexity of the intervention and its implementation. Reviewers need to understand the iterative development process to be used in the design and refinement of the proposed intervention.

Applicants should describe how teachers or other school personnel will be involved in the design of the intervention. Applicants should make clear how rapid prototyping of interventions will occur (i.e., development of multiple instantiations of the basic intervention for use in different grades and potentially across different content areas) – how will they coordinate the development of multiple instantiations of the intervention and take advantage of having data on use of the intervention across different grades for the revision and refinement of the intervention.

c. Evaluation of the efficacy of an intervention

Applicants must describe an example of an evaluation study to determine the efficacy of an intervention. To eliminate the need to describe a theory of change, theoretical, and empirical rationale for the intervention to be developed, applicants should propose to evaluate whatever intervention they proposed to develop in section II.5.B.b Development of a set of interventions.

(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, including justification for exclusion and inclusion criteria. Additionally, the applicant should describe strategies to increase the likelihood that participants will remain in the study over the course of the evaluation (i.e., reduce attrition).

(ii) Research design, methods, and analysis.

The applicant must provide a detailed research design. Applicants should describe how potential threats to internal and external validity would be addressed. Studies using random assignment to intervention and comparison conditions have the strongest internal validity for causal conclusions and thus are preferred whenever they are feasible. 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) or participants to intervention and comparison conditions. Applicants may propose a quasi-experiment rather than a randomized trial when randomization is not possible or when the external validity of the quasi-experiment provides valuable information that is not obtainable from a randomized counterpart. Acceptable quasi-experiments will substantially minimize selection bias or allow it to be modeled. In all cases in which a quasi-experimental design is proposed, applicants should explicitly address the threats to internal validity that are not addressed convincingly by the design and how conclusions from the research will be tempered in light of these threats.

Applicants should clearly address the power of the evaluation design to detect a reasonably expected and minimally important effect. When justifying what constitutes a reasonably expected

effect, applicants should indicate clearly (e.g., by including the statistical formula) how the effect size was calculated. Strong applications will include empirical justification for the intraclass correlation and anticipated effect size used in the power analysis.

Applicants should describe the measures to be used and the procedures for data collection. They should justify the appropriateness of the chosen measures and provide information on the reliability and validity of the proposed measures. Applicants must include measures of relevant student outcomes. In addition, applicants should include measures of the key mediators and moderators of the relation between the intervention and reading comprehension.

The applicant should specify how the implementation of the intervention would be documented and measured. Investigators should make clear how the fidelity measures capture the critical features of the intervention. In strong applications, investigators will propose methods that permit the identification and assessment of factors associated with the fidelity of implementation.

In strong proposals, applicants compare intervention and comparison groups on the implementation of critical features of the intervention so that, for example, if there is no observed difference between intervention and comparison student outcomes, they can determine if key elements of the intervention were also provided in the comparison condition (i.e., a lack of distinction between the intervention treatment and the comparison treatment).

(iii)   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, and independent and dependent variables should be clear. For qualitative data, the specific methods used to index, summarize, and interpret data should be delineated. Strong applications will provide sufficient detail for reviewers to judge the appropriateness of the data analysis strategy.

C. Personnel
Competitive applicants will have research teams that collectively demonstrate expertise in (a) understanding the underlying cognitive processes (e.g., oral language and development of general knowledge, text processing, reading comprehension), (b) developing interventions (e.g., instructional approaches, curricula, technology), (c) evaluating the impact of interventions, and (d) working with teachers, schools, and districts. In the project narrative, applicants should briefly describe the qualifications, roles, responsibilities, and percent of time to be devoted to the project for key personnel.

Each Core Team must include school and district personnel who will contribute to the development of interventions that are feasible and practical for implementation within existing school structures. Applicants should clearly articulate how the expertise of school and district personnel will be incorporated into the design and development of interventions.

D. Management Plan
Applicants must describe plans for coordinating the work of the various subgroups (e.g., cognitive scientists, intervention development, evaluation) within the Core Team. Large projects are often difficult to coordinate, and subgroups within a research team have a tendency to work independently without necessarily understanding where the rest of the team is headed. The Institute believes that management of each Core Team is critical for the success of this research initiative. The work of a subgroup within a Core Team needs to be informed by the work of the other subgroups within the Core Team; the work of each Core Team needs to be informed by the work of the other Teams in the Network. For example, how will the work on underlying processes inform the development of interventions? How will the activities of researchers working on the development interventions be coordinated? How will the input of school and district personnel be incorporated into the design of interventions? How will the work of the

evaluation researchers be coordinated with the work of other researchers in the Core Team, and how will the evaluation researchers maintain the objectivity needed for conducting efficacy evaluations of interventions? How does the applicant anticipate facilitating the coordination of the work across the other Core Teams and the Assessment Teams?

E. Resources
In competitive proposals, applicants will describe having access to institutional resources that adequately support research activities and access to schools in which to conduct the research. Strong applications 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
Awards for R&D Network Core Teams will average between $2,000,000 to $4,000,0000 (total cost = direct + indirect costs) per year for a maximum of 5 years. The amount per year depends on the work planned for a particular year. The size of the award depends on the scope of the project.

6. APPLICATION FOR R&D NETWORK ASSESSMENT TEAM
Applications for R&D Network Assessment Team awards will be evaluated on five criteria as noted in section 19: (a) significance, (b) research plan, (c) personnel, (d) management plan, and (e) resources. Information on each of these criteria must be included in the project narrative.

A. Significance of the Project
R&D Network Assessment Teams will be conducted a number of research projects over the course of the project period including (a) developing and validating a series of age-graded summative reading comprehension assessments, (b) testing their underlying theoretical model of reading comprehension, and (c) *potentially* developing and validating formative reading comprehension assessments. The primary focus of the Assessment Teams is on the first two tasks.

By describing (a) the theoretical models of reading comprehension and the development of reading comprehension, (b) the justification for the underlying theoretical models of reading comprehension and its development, (c) the proposed summative assessments, and (d) the practical utility of the assessment, applicants are addressing aspects of the significance of their proposal.

a. Rationale
Applicants should present and justify their theoretical model of reading comprehension. Because the Assessment Team must cover assessment from prekindergarten through Grade 12, applicants should clearly explain and justify their model of the *development* of reading comprehension. Reviewers will consider the theoretical and empirical justification for the proposed model of reading comprehension and its development.

b. Description of the summative assessments.
Applicants should clearly describe the proposed age-graded summative assessments and explicate how their theoretical model is reflected in the age-graded summative assessments. Applicants should identify the constructs that are intended to be measured and provide examples of items that are intended to operationalize each construct. Applicants should provide sufficient detail of the proposed summative assessments so that reviewers can judge their utility for measuring growth in reading comprehension over time.

Because the reading comprehension assessments are intended for use by schools, researchers should keep in mind the pragmatic constraints (e.g., number of students, limited class time, time required to train individuals 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. Reviewers will consider the practical utility of the proposed assessments.

B. Methodological Requirements

Applicants must clearly address (a) the proposed methods for testing the theoretical models of reading comprehension and its development, (b) the proposed methods for developing and refining the assessment, and (c) the proposed research methods for obtaining evidence of the *validity and reliability* of the assessment.

a. Testing the theoretical models

Although there has been some convergence of models of reading comprehension, evaluations of reading comprehension assessments indicate that there is variation in the underlying constructs that are tapped by different measures (e.g., Cutting & Scarborough, 2006; Keenan, Betjemann, & Olson, 2008). In addition, the associations between component skills (e.g., phonemic awareness, listening comprehension) and overall reading comprehension varies across tests, and those associations are in turn moderated by the age and skill level of the reader. Applicants must describe a line of research to test the underlying theoretical models of reading comprehension and the development of reading comprehension.

Research questions or hypotheses should be clearly specified. The applicant should clearly describe the design of the study(ies) (e.g., longitudinal, cross-sectional, experimental), sample, measures, and procedures for collecting data. If observational data are collected, applicants should describe how the data would be collected (e.g., procedures for maintaining inter-observer reliability), coded, and quantified to allow quantitative analyses predicting the relation between what was observed and the outcomes of interest.

The applicant must include detailed descriptions of data analysis procedures. The relation between hypotheses, measures, and independent and dependent variables should be well specified.

b. Assessment development

Applicants should describe the iterative development process to be used in the design and refinement of the proposed measurement tool. Applicants should detail the proposed procedures for developing the assessment. Strong applications will include descriptions of (a) the procedures for determining the constructs that will be tapped by the instrument; (b) the procedures for developing and selecting items to be used in the assessment, including assessing difficulty of selected items, and obtaining representative responses to items; and (c) the process for determining the administrative procedures for conducting the assessment (e.g., mode of administration, inclusion/exclusion of individual test takers, and whether alternative administrative conditions will be allowed). Applicants should describe the process they will use to collect empirical data that will provide feedback for refining specific components of the assessment.

c. Assessment evaluation

Applicants should clearly describe the research plans for determining the validity and reliability of the assessment. Applicants should describe the characteristics, size, and analytic adequacy of samples to be used in each study, including justification for exclusion and inclusion criteria.

Applicants proposing to use existing datasets (e.g., state or local student achievement databases) to validate an assessment should explicitly address how exclusion from testing, or missing data, will be handled within the statistical analysis. If multiple data sets will be linked for the proposed analyses, applicants should provide sufficient detail for reviewers to judge the feasibility of the plan.

Applicants proposing to collect original data should carefully describe the sample, measures (including reliability and validity), and procedures proposed for the primary data collection. If observational data are

collected, applicants should describe how the data would be collected (e.g., procedures for maintaining inter-observer reliability), coded, and analyzed.

The applicant must include detailed descriptions of data analysis procedures (e.g., statistical and/or psychometric models), plans for treatment of missing responses, and criteria for interpreting results.

C. Other Proposed Research

Applicants may propose to develop formative reading comprehension assessments to use in any grade levels from prekindergarten through Grade 12. Development of formative assessments, however, are not a requirement. Applicants who wish to conduct such work should (a) identify and justify the grade levels for which formative assessments will be developed, (b) clearly describe the formative assessments, (c) describe the iterative process that will be used to develop the formative assessments, and (d) describe the procedures for evaluating the validity and reliability of the formative assessments.

Applicants may propose to test the efficacy of using the formative assessments for improving reading comprehension. Applicants proposing to do so must include the research plan for the efficacy evaluation. The requirements for the efficacy evaluation are the same as the requirements for evaluating the efficacy of an intervention and are described in section II.5.B.c Evaluation of the efficacy of an intervention.

D. Personnel

Competitive applicants will have research teams that collectively demonstrate expertise in (a) reading comprehension, oral language development, and text processing; (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. In the project narrative, applicants should briefly describe the qualifications, roles, responsibilities, and percent of time to be devoted to the project for key personnel.

E. Management Plan

Applicants must describe plans for coordinating the work of the various groups within the R&D Network Assessment Team.

The Assessment Team will provide their most current version of the summative assessment to the R&D Network Core Teams for use in the efficacy evaluations of interventions developed by the Core Teams. The applicant should describe how the Assessment Team anticipates facilitating the coordination of the work across the R&D Network Core Teams.

F. Resources

In competitive proposals, applicants will describe having access to institutional resources that adequately support research activities and access to schools in which to conduct the research. Applicants should also demonstrate access to statistical and measurement resources and the technical expertise needed for developing and studying assessment instruments and techniques.

G. Awards

The award for the R&D Network Assessment Team will be between $1,000,000 to $3,000,0000 (total cost = direct + indirect costs) per year for a maximum of 5 years. The amount per year depends on the work planned for a particular year. The size of the award depends on the scope of the project.

PART III GENERAL SUBMISSION AND REVIEW INFORMATION

7. MECHANISM OF SUPPORT
The Institute intends to award cooperative agreements pursuant to this Request for Applications. Through the cooperative agreements, the Institute will be involved in the coordination and direction of the awarded projects.

The length of the award period is 5 years.

8. FUNDING AVAILABLE
The size of the award depends on the scope of the project. Please see specific details in Part II Requirements of the Proposed Research section of the announcement.

Although the Institute anticipates funding at least one Core Team in each age span and at least one Assessment Team, funding will depend on the receipt of meritorious applications and the availability of funds. In FY 2010 the Institute will not fund more than two applications that cover the same (or approximately the same – for example, prekindergarten through Grade 3 and prekindergarten through Grade 4) grade span. In FY 2010, the Institute will not fund more than two Assessment Team applications.

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. Institute-funded investigators should submit final, peer-reviewed manuscripts resulting from research supported in whole or in part by the Institute to the Educational Resources Information Center (ERIC, http://eric.ed.gov) upon acceptance for publication. An author's final manuscript is defined as the final version accepted for journal publication, and includes all graphics and supplemental materials that are associated with the article. The Institute will make the manuscript available to the public through ERIC no later than 12 months after the official date of publication. Institutions and investigators are responsible for ensuring that any publishing or copyright agreements concerning submitted articles fully comply with this requirement.

Applicants must budget for three working meetings each year in Washington, D.C., with other grantees and Institute staff for a duration of up to three days, as well as one meeting in Washington, D.C. to attend the IES Research Conference each year (up to three days). At least three project representatives must attend each meeting.

Grant recipients will be expected to make their data available to others for the purpose of research. Data should be made as freely available as possible while safeguarding the privacy of participants, and protecting confidential and proprietary data. To facilitate data sharing, applicants will be expected to submit a plan for sharing research data for research purposes prior to final award. The Institute expects the timely release and sharing of data to be no later than the acceptance for publication of the main findings from each specific study.

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. Applicants who are or include for-profit entities should describe how they will ensure that objectivity is maintained.

The R&D Network Assessment Team will provide their most current version of the summative reading comprehension assessment to the R&D Network Core Teams for use in the efficacy evaluations of interventions developed by the Core Teams.

The Institute strongly advises applicants to establish a written agreement among all key collaborators and their institutions (e.g., principal and co-principal investigators) regarding roles, responsibilities, access to data, publication rights, and decision-making procedures within three months of receipt of an award.

11. DESIGNATION OF PRINCIPAL INVESTIGATOR

The applicant institution is responsible for identifying the Principal Investigator. The Principal Investigator is the individual who has the authority and responsibility for the proper conduct of the research, including the appropriate use of federal funds and the submission of required scientific progress reports. An applicant institution may elect to designate more than one principal investigator. In so doing, the applicant institution identifies them as individuals who share the authority and responsibility for leading and directing the research intellectually and logistically. All principal investigators will be listed on any grant award notification. However, institutions applying for funding must designate a single point of contact for the project. The role of this person is primarily for communication purposes on the scientific and related budgetary aspects of the center and should be listed as the Principal Investigator. All other principal investigators should be listed as Co-Principal Investigators.

12. LETTER OF INTENT

The Institute asks all applicants to submit a Letter of Intent by 4:30 p.m. Washington D.C. time on the due date listed in Section 20.A Letter of Intent Receipt Date. The information in the Letters of Intent enable Institute staff to identify the expertise needed for the scientific peer review panels and secure sufficient reviewers to handle the anticipated number of applications. The Institute encourages all interested applicants to submit a Letter of Intent, even if they think that they might later decide not to submit an application. The letter of intent is not binding and does not enter into the review of a subsequent application.

The letter of intent form must be submitted electronically using the instructions provided at: https://ies.constellagroup.com. Receipt of the letter of intent will be acknowledged via email.

A. Content
The letter of intent should include:
    a. Descriptive title
    b. Brief description of the proposed project that identifies the grade/age range to be the focus of the proposed R&D team
    c. Name, institutional affiliation, address, telephone number and e-mail address of the principal investigator(s)
    d. Name and institutional affiliation of any key collaborators and contractors
    e. Duration of the proposed project
    f. Estimated total budget request (The estimate need only be a rough approximation.)

B. Format and Page Limitation
Fields are provided in the letter of intent form for each of the content areas described above. The project description should be single-spaced and should not exceed one page (about 3,500 characters).

13. MANDATORY SUBMISSION OF ELECTRONIC APPLICATIONS

Grant applications must be submitted electronically through the Internet using the software provided on the Grants.gov Web site: http://www.grants.gov/. Applicants must follow the application procedures and submission requirements described in the Institute's Grants.gov Application Submission Guide and the instructions in the User Guide provided by Grants.gov.

Applications submitted in paper format will be rejected unless the applicant (a) qualifies for one of the allowable exceptions to the electronic submission requirement described in the Federal Register notice announcing the Institute's education research and research training grant competitions (CFDA Number 84.305) and (b) submits, no later than two weeks before the application deadline date, a written statement to the Institute that documents that the applicant qualifies for one of these exceptions.

For more information on using Grants.gov, applicants should visit the Grants.gov web site.

14. APPLICATION INSTRUCTIONS AND APPLICATION PACKAGE
A. Documents Needed to Prepare Applications

To complete and submit an application, applicants need to review and use three documents: the Request for Applications, the IES Grants.gov Application Submission Guide, and the Application Package.

- The *Request for Applications* for the Reading for Understanding Research Initiative (CFDA 84.305F) describes the substantive requirements for a research application.

  ✓ Request for Applications   http://ies.ed.gov/funding/

- The *IES Grants.gov Application Submission Guide* provides the instructions for completing and submitting the forms. It is available on the Institute's website and on Grants.gov.

  ✓ IES Grants.gov Application Submission Guide   http://ies.ed.gov/funding/ or
                                                                                  http://www.Grants.gov/

- The *Application Package* provides all of the forms that need to be completed and submitted. The application form approved for use in the competitions specified in this RFA is the government-wide SF424 Research and Related (R&R) Form (OMB Number 4040-0001). The applicant must follow the directions in section III.14.C below to download the Application Package from Grants.gov.

  ✓ Application Package   http://www.Grants.gov

B. Date Application Package is Available on Grants.gov

The application package will be available on http://www.Grants.gov/ beginning on the following date:

October Application Package Available on   August 3, 2009

Additional help navigating Grants.gov is available in the Grants.gov User Guide:

  ✓ Grants.gov User Guide   http://www.grants.gov/help/user_guides.jsp

C. Download Correct Application Package
a. CFDA number

Applicants must first search by the CFDA number for each IES Request for Applications *without* the alpha suffix to obtain the correct downloadable Application Package. For the Reading for Understanding Research Initiative Request for Applications, applicants must search on: **CFDA 84.305**.

b. Reading for Understanding Research Initiative Application Package
The Grants.gov search on CFDA 84.305 will yield more than one application package. For the Reading for Understanding Research Initiative, applicants must download the package for the appropriate package marked:

> **Application Package:**   **CFDA 84.305F Reading for Understanding Research Initiative Application Package**

In order for the application to be submitted to the correct grant competition, applicants must download the Application Package that is designated for the grant competition and competition deadline. Using a different Application Package, even if that package is for an Institute competition, will result in the application being submitted to the wrong competition.

15. SUBMISSION PROCESS AND DEADLINE
Applications must be submitted **electronically by 4:30 p.m**., **Washington, DC time** on the application deadline date, using the standard forms in the Application Package and the instructions provided on the Grants.gov website.

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

16. APPLICATION CONTENT AND FORMATTING REQUIREMENTS
A. Overview
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) Appendix A, and (e) Appendix B. Instructions for all other documents to be included in the application (e.g., forms, budget narrative, human subjects narrative) are provided in the IES Grants.gov Application Submission Guide.

B. General Format Requirements
Margin, format, and font size requirements for the project summary/abstract, project narrative, bibliography, Appendix A, and Appendix B are described in this section. 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.

a. Page and margin specifications
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.

b. Spacing
Text must be single spaced in the narrative.

c. Type size (font size)
Type must conform to the following three requirements:

- The height of the letters must not be smaller than a type size of 12 point.
- Type density, including characters and spaces, must be no more than 15 characters per inch (cpi). For proportional spacing, the average for any representative section of text must not exceed 15 cpi.
- Type size must yield no more than 6 lines of type within a vertical inch.

Applicants should check the type size using a standard device for measuring type size, rather than relying on the font selected for a particular word processing/printer combination. The type size used must

conform to all three requirements. Small type size makes it difficult for reviewers to read the application; consequently, the use of small type will be grounds for the Institute to return the application without peer review.

Adherence to type size and line spacing requirements is necessary so that no applicant will have an unfair advantage, by using small type or by providing more text in their applications. **Note, these requirements apply to the PDF file as submitted**. As a practical matter, applicants who use a 12-point Times New Roman font without compressing, kerning, condensing or other alterations typically meet these requirements.

Figures, charts, tables, and figure legends may be in a smaller type size but must be readily legible.

d. Graphs, diagrams, tables
Applicants must use only black and white in graphs, diagrams, tables, and charts. The application must contain only material that reproduces well when photocopied in black and white.

C. Project Summary/Abstract
a. Submission
The project summary/abstract will be submitted as a .PDF attachment.

b. Page limitations and format requirements
The project summary/abstract is limited to one single-spaced page and must adhere to the margin, format, and font size requirements above.

c. Content
The project summary/abstract should include:
        (1)   Title of the project;
        (2)   Type of project (applicants should clearly identify if the application is for an Core Team and for what grade span or for the Assessment Team award)
        (3)   Brief description of the proposed research
        (4)   List of key personnel

Please see the website http://ies.ed.gov/ncer/projects/ for examples of project summaries/abstracts.

D. Project Narrative
a. Submission
The project narrative will be submitted as a .PDF attachment.

b. Page limitations and format requirements
The project narrative is limited to **40 single-spaced pages** for all applicants. The 40-page limit for the project narrative does not include any of the SF424 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, subaward 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 using the top or bottom right-hand corner.

c. Format for citing references in text
To ensure that all applicants have the same amount of available space in which to describe their projects in the project narrative, applicants should use the author-date style of citation (e.g., James, 2004), such as that described in the *Publication Manual of the American Psychological Association, 5th Ed.* (American Psychological Association, 2001).

d. Content

To be compliant with the requirements of the Request for Applications, the project narrative must include five sections: (a) Significance, (b) Research Plan, (c) Personnel, (d) Management Plan, and (e) Resources. Information to be included in each of these sections is detailed in **Part II: Requirements of the Proposed Research**. Incorporating the requirements outlined in these sections provides the majority of the information on which reviewers will evaluate the proposal.

E. Bibliography and References Cited

a. Submission

The section will be submitted as a separate .PDF attachment.

b. Page limitations and format requirements

There are no limitations to the number of pages in the bibliography. The bibliography must adhere to the margin, format, and font size requirements described in section III.16.B. General Format Requirements.

c. Content

Applicants should include complete citations, including the names of all authors (in the same sequence in which they appear in the publication), titles (e.g., article and journal, chapter and book, book), page numbers, and year of publication for literature cited in the research narrative.

F. Appendix A

a. Submission

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

b. Page limitations and format requirements

Appendix A is limited to 15 pages. It must adhere to the margin, format, and font size requirements described in section III.16.B. General Format Requirements.

c. Content

(i)   Purpose.

The purpose of Appendix 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. 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 narrative.

(ii)   Letters of agreement.

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 Institute recognizes that some applicants may have more letters of agreement than 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.

G. Appendix B (Optional)

a. Submission

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

b. Page limitations and format requirements
The appendix is limited to 10 pages. The Appendix B must adhere to the margin, format, and font size requirements described in section III.16.B. General Format Requirements.

c. Content
The purpose of Appendix B is to allow applicants to include examples of curriculum material, computer screens, test items, or other materials used in the proposed 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. 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 40-page research narrative.

17. APPLICATION PROCESSING
Applications must be received by **4:30 pm, Washington, D.C. time** on the application deadline 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.

18. PEER REVIEW PROCESS
Applications that are compliant and responsive to this request will be evaluated for scientific and technical merit. The review of written applications 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 four 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 will be 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. Panel members will discuss the proposal and independently assign a score for each criterion, as well as an overall score.

19. REVIEW CRITERIA FOR SCIENTIFIC MERIT
Reviewers will be expected to assess the following aspects of an application. Information pertinent to each of these criteria is also described above in Part II Requirements of the Proposed Research.

A. Significance
Does the applicant provide a compelling rationale for the significance of the project as defined in the Significance of Project section for each of the three projects that must be described in the proposal?

B. Research Plan
Does the applicant meet the requirements described in the methodological requirements section for each of the three projects that must be described in the proposal?

C. Personnel

Does the description of the personnel make it apparent that the principal investigator, project director, and other key personnel possess appropriate training and experience and will commit sufficient time to competently implement the proposed research? Does the team have a history of successful collaborations?

For Core Team applications, does the applicant demonstrate that school and district personnel will contribute to the development and implementation of interventions?

D. Management Plan

Do the plans and procedures for the overall management of the project indicate that the applicant has the capacity to efficiently and successfully complete the proposed research and coordinate with other members of the Reading for Understanding Research Network? 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 proposed activities?

E. 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?

20. RECEIPT AND START DATE SCHEDULE

A. Letter of Intent Receipt Date

August 3, 2009

B. Application Deadline Date

October 1, 2009

C. Earliest Anticipated Start Date

July 1, 2010

21. AWARD DECISIONS

The following will be considered in making award decisions:
- o Scientific merit as determined by peer review
- o Responsiveness to the requirements of this request
- o Performance and use of funds under a previous Federal award
- o Contribution to the overall program of research described in this request
- o Availability of funds

22. INQUIRIES MAY BE SENT TO:

Dr. Elizabeth Albro
Institute of Education Sciences
555 New Jersey Avenue, NW
Washington, DC 20208

Email: Elizabeth.Albro@ed.gov
Telephone: (202) 219-2148

23. PROGRAM AUTHORITY

20 U.S.C. 9501 <u>et</u> <u>seq</u>., 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.

24. 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.

25. REFERENCES

American Psychological Association, Research Office (2001). *Publications Manual of the American Psychological Association (5th ed.)*. Washington, DC: American Psychological Association.

Anderson, R. C., & Pearson, P. D. (1984). A schema-thematic view of basic processes in reading comprehension (pp. 255-291). In P. D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of Reading Research.* New York: Longman.

Bowery, J. A. (2007). Predicting individual differences in learning to read. In M. J. Snowling & C. Hulme (Eds.), *The Science of Reading: A Handbook* (pp. 155-172). Malden, MA: Blackwell Publishing.

Bransford, J. D., & M. K. Johnson (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behavior, 11*: 717-726.

Braze, D., Tabor, W., Shankweiler, D. P., & Mencl, W. E. (2008). Speaking up for vocabulary: reading skill differences in young adults. *Journal of Learning Disabilities, 40*(3), 226-243.

Capsize, A. M., & Fuchs, L. S. (2005). Effect of curriculum-based measurement with and withoutdiagnostic feedback on teacher planning. Remedial and Special Education, 26, 159–174.

Connor, C. M., Piasta, S. B., Fishman, B., Glasney, S., Schatschneider, C., Crowe, E., Underwood, P., Morrison, F. J. (2009). Individualizing Student Instruction Precisely: Effects of Child × Instruction Interactions on First Graders' Literacy Development. *Child Development, 80*: 77-100.

Cutting, L. E., & Scarborough, H. S. (2006). Prediction of reading comprehension: Relative contributions of word recognition, language proficiency, and other cognitive skills can depend on how comprehension is measured. *Scientific Studies of Reading, 10*(3): 277-299.

Gernsbacher, M. M., Varner, K. R., & Faust, M. E. (1990). Investigating individual differences in general comprehension skill. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16,* 430-445.

Gough, P. B., & Tunmer, W.E. (1986). Decoding, reading and reading disability. *Remedial and Special Education, 7,* 6-10.

Keenan, J. M, Betjemann, R. S., & Olson, R. K., (2008). Reading comprehension tests vary in the skills they assess: Differential dependence on decoding and oral comprehension. *Scientific Studies of Reading, 12*(3): 281-300.

Nation, K. (2007). Children's reading comprehension difficulties. In M. J. Snowling & C. Hulme (Eds.), *The Science of Reading: A Handbook* (pp. 248-265). Malden, MA: Blackwell Publishing.

O'Reilly, T., & McNamara, D. S. (2007). The impact of science knowledge, reading skill, and reading strategy knowledge on more traditional "high-stakes" measures of high school students' science achievement. *American Educational Research Journal, 44*(1): 161-196.

Perfetti, C. (1999). Comprehending written language: A blueprint of the reader. In C. Brown & P. Hagoort (Eds.), *The neurocognition of language* (pp. 167-208). Oxford University Press.

Snow, C.E. (2002). Reading for understanding : toward a research and development program in reading comprehension. Report of the RAND Reading Study Group. Santa Monica, CA: RAND.

Sticht, T.G., & James, J. H. (1984). Listening and reading. In R. Barr, M. Kamil, and P. Mosenthal (Eds.), Handbook of Reading Research. New York: Longmans.

Storch, S. A., & Whitehurst, G. J. (2002). Oral language and code-related precursors to reading: Evidence from a longitudinal structural model. *Developmental Psychology, 38 (6)*, 934-947.

Wolfle, D. (November, 15, 1968). The administration of NASA. *Science, 162 (3855)*, 753.

Wood, F. B., Hill, D.F., Meyer, M. S., & Flowers, D. L. (2005). Predictive assessment of reading. *Annals of Dyslexia, 55*(2), 193-216.