



# REQUEST FOR APPLICATIONS

## EDUCATION RESEARCH AND DEVELOPMENT CENTER PROGRAM

### CFDA Number: 84.305C

Milestone	Date	Website
<i>Letter of Intent Due</i>	May 21, 2015	<a href="https://iesreview.ed.gov/">https://iesreview.ed.gov/</a>
<i>Application Package Available</i>	May 21, 2015	<a href="http://www.grants.gov/">http://www.grants.gov/</a>
<i>Application Due</i>	<b>By 4:30:00pm Washington DC time on August 20, 2015</b>	<a href="http://www.grants.gov/">http://www.grants.gov/</a>
<i>Applicants Notified</i>	By July 1, 2016	<a href="https://iesreview.ed.gov/">https://iesreview.ed.gov/</a>
<i>Possible Start Dates</i>	July 1, 2016 to September 1, 2016	

# Table of Contents

<b>PART I: OVERVIEW AND GENERAL REQUIREMENTS</b> .....	<b>1</b>
<b>A. INTRODUCTION</b> .....	<b>1</b>
1. Technical Assistance for Applicants .....	2
<b>B. GENERAL REQUIREMENTS</b> .....	<b>2</b>
1. Student Education Outcomes .....	2
2. Authentic Education Settings .....	3
<b>C. APPLICANT REQUIREMENTS</b> .....	<b>4</b>
1. Eligible Applicants .....	4
2. The Principal Investigator and Authorized Organization Representative .....	4
3. Common Applicant Questions .....	4
<b>D. CHANGES IN THE FY 2016 REQUEST FOR APPLICATIONS</b> .....	<b>5</b>
<b>E. READING THE REQUEST FOR APPLICATIONS</b> .....	<b>6</b>
1. Requirements .....	6
2. Pre-Award Requirements .....	6
<b>PART II: R&amp;D CENTER REQUIREMENTS</b> .....	<b>7</b>
<b>A. GENERAL REQUIREMENTS FOR ALL R&amp;D CENTER APPLICATIONS</b> .....	<b>7</b>
1. Requirements for the Focused Program of Research .....	7
2. Requirements for Other Center Activities .....	7
3. Management and Institutional Resources .....	8
4. Personnel .....	8
<b>B. R&amp;D CENTER TOPIC REQUIREMENTS</b> .....	<b>9</b>
1. Virtual Learning .....	9
<b>PART III: COMPETITION REGULATIONS AND REVIEW CRITERIA</b> .....	<b>18</b>
<b>A. FUNDING MECHANISMS AND RESTRICTIONS</b> .....	<b>18</b>
1. Mechanism of Support.....	18
2. Funding Available.....	18
3. Cooperative Agreements .....	18
4. Special Considerations for Budget Expenses .....	18
5. Program Authority.....	19
6. Applicable Regulations.....	19
<b>B. ADDITIONAL AWARD REQUIREMENTS</b> .....	<b>19</b>
1. Public Availability of Data and Results .....	19
2. Special Conditions on Grants.....	19
3. Demonstrating Access to Data and Authentic Education Settings.....	20
<b>C. OVERVIEW OF APPLICATION AND PEER REVIEW PROCESS</b> .....	<b>20</b>
1. Submitting a Letter of Intent .....	20

2. Resubmissions and Multiple Submissions .....	21
3. Application Processing .....	21
4. Peer Review Process .....	22
5. Review Criteria for Scientific Merit .....	22
6. Award Decisions .....	23
<b>PART IV: PREPARING YOUR APPLICATION .....</b>	<b>24</b>
<b>A. OVERVIEW .....</b>	<b>24</b>
<b>B. GRANT APPLICATION PACKAGE .....</b>	<b>24</b>
1. Date Application Package is Available on Grants.gov .....	24
2. How to Download the Correct Application Package .....	24
<b>C. GENERAL FORMATTING .....</b>	<b>24</b>
1. Page and Margin Specifications .....	25
2. Page Numbering .....	25
3. Spacing .....	25
4. Type Size (Font Size) .....	25
5. Graphs, Diagrams, and Tables .....	25
<b>D. PDF ATTACHMENTS .....</b>	<b>26</b>
1. Center Summary/Abstract .....	26
2. Center Narrative .....	26
3. Appendix A (Required for Resubmissions) .....	27
4. Appendix B (Optional) .....	27
5. Appendix C (Optional) .....	27
6. Appendix D (Required) .....	28
7. Bibliography and References Cited .....	28
8. Research on Human Subjects Narrative .....	28
9. Biographical Sketches of Senior/Key Personnel .....	29
10. Current & Pending Support of Senior/Key Personnel .....	30
11. Narrative Budget Justification .....	30
<b>PART V: SUBMITTING YOUR APPLICATION .....</b>	<b>32</b>
<b>A. MANDATORY ELECTRONIC SUBMISSION OF APPLICATIONS AND DEADLINE .....</b>	<b>32</b>
<b>B. REGISTER ON GRANTS.GOV .....</b>	<b>32</b>
1. Register Early .....	32
2. How to Register .....	32
<b>C. SUBMISSION AND SUBMISSION VERIFICATION .....</b>	<b>33</b>
1. Submit Early .....	33
2. Verify Submission is OK .....	34
3. Late Applications .....	35
<b>D. TIPS FOR WORKING WITH GRANTS.GOV .....</b>	<b>35</b>

1. Working Offline.....	35
2. Connecting to the Internet .....	35
3. Software Requirements .....	36
4. Attaching Files .....	36
<b>E. REQUIRED RESEARCH &amp; RELATED (R&amp;R) FORMS AND OTHER FORMS.....</b>	<b>37</b>
1. Application for Federal Assistance SF 424 (R&R) .....	37
2. Research & Related Senior/Key Person Profile (Expanded).....	41
3. Project/Performance Site Location(s).....	42
4. Research & Related Other Project Information .....	42
5. Research & Related Budget (Total Federal+Non-Federal)-Sections A & B; C, D, & E; F-K.....	45
6. R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form.....	49
7. Other Forms Included in the Application Package.....	50
<b>F. SUMMARY OF REQUIRED APPLICATION CONTENT .....</b>	<b>51</b>
<b>G. APPLICATION CHECKLIST .....</b>	<b>53</b>
<b>H. PROGRAM OFFICER CONTACT INFORMATION.....</b>	<b>55</b>
<b>GLOSSARY .....</b>	<b>i</b>
<b>REFERENCES .....</b>	<b>iv</b>
<b>ALLOWABLE EXCEPTIONS TO ELECTRONIC SUBMISSIONS .....</b>	<b>v</b>

# PART I: OVERVIEW AND GENERAL REQUIREMENTS

## A. INTRODUCTION

In this announcement, the Institute of Education Sciences (Institute) requests applications for research centers that will contribute to its Education Research and Development Center program (CFDA 84.305C). Under the Education Sciences Reform Act of 2002, the Institute supports National Research and Development Centers (R&D Centers) that are intended to contribute significantly to the solution of education problems in the United States by engaging in research, development, evaluation, and national leadership activities aimed at improving the education system and, ultimately, student achievement. Each of the R&D Centers conducts a focused program of research in its topic area. In addition, each Center conducts supplemental activities within its broad topic area and provides national leadership in advancing evidence-based practice and policy within its topic area. For information on existing Institute R&D Centers, please see <http://ies.ed.gov/ncer/RandD/>.

The Institute's R&D Centers grapple with key education issues that face our nation. Through this program, researchers have greater resources to tackle more complex education problems, create innovative education solutions, and contribute to knowledge and theory in the education sciences. For the FY 2016 Education Research and Development Center competition, the Institute invites applications in one topic area - **Virtual Learning** - and is interested in applications that offer the greatest promise for the following:

- Contributing to the solution of a specific education problem within the R&D Center topic and to the generation of new knowledge and theories relevant to the focus of the R&D Center.
- Providing relatively rapid research and scholarship on supplemental questions that emerge within the R&D Center's topic area and that are not being addressed adequately elsewhere.
- Providing national leadership within the R&D Center's topic by developing position papers, hosting meetings, and engaging in dialogue with researchers, practitioners, and policymakers in order to identify promising areas of research, development, and dissemination for the field and to advance evidence-based policy and practice.

For the FY 2016 competition, the Institute will consider only applications that are [responsive](#) and [compliant](#) to the requirements described in this Request for Applications (RFA) *and* submitted electronically via Grants.gov (<http://www.grants.gov>) on time. Separate funding announcements are available on the Institute's web site that pertain to the other research and research training grant programs funded through the Institute's National Center for Education Research (<http://ncer.ed.gov>) and to the discretionary grant competitions funded through the Institute's National Center for Special Education Research (<http://ncser.ed.gov>). An overview of the Institute's research grant programs is available at <http://ies.ed.gov/funding/overview.asp>.

The work of the Institute is grounded in the principle that effective education research must address the interests and needs of education practitioners and policymakers, as well as students, parents, and community members (see <http://ies.ed.gov/director/board/priorities.asp> for the Institute's priorities). The Institute encourages researchers to develop partnerships with education stakeholder groups to advance the relevance of their work and the accessibility and usability of their findings for the day-to-day work of education practitioners and policymakers. In addition, researchers should plan for disseminating their results to a wide range of audiences that includes researchers, policymakers, practitioners, and the public.

This RFA is organized in the following fashion. Part I sets out the general requirements for a grant application to the Institute. Part II describes general requirements for an R&D Center as well as requirements specific to the topic being competed in FY 2016. Part III provides general information on funding, award requirements and the review process. Part IV describes how to prepare an application. Part V describes how to submit an application electronically using Grants.gov. You will also find a glossary

of important terms located at the end of this RFA. The first use of each term is hyperlinked to the Glossary within each Part of this RFA.

## 1. Technical Assistance for Applicants

The Institute encourages you to contact the Program Officer for this competition as you develop your application. The Institute's program officers can provide guidance on substantive aspects of your application and answer any questions prior to submitting an application. Program Officer contact information is listed in [Part II.B](#) and [Part V.H](#).

The Institute asks potential applicants to submit a Letter of Intent 90 days prior to the application submission deadline. Letters of Intent are optional but strongly encouraged by the Institute. If you submit a Letter of Intent, a Program Officer will contact you regarding your proposed research. Institute staff also uses the information in the letters of intent to identify the expertise needed for the scientific peer-review panels and to secure a sufficient number of reviewers to handle the anticipated number of applications.

In addition, the Institute encourages you to sign up for the Institute's Funding Opportunities Webinars for advice on choosing the correct research competition, grant writing, or submitting your application. For more information regarding webinar topics, dates, and the registration process, see <http://ies.ed.gov/funding/webinars/index.asp>.

## B. GENERAL REQUIREMENTS

### 1. Student Education Outcomes

All research supported under the Education Research and Development Center program must address the [education outcomes](#) of students and include measures of these outcomes. The Institute is most interested in student [academic outcomes](#) and student [social and behavioral competencies](#) that support success in school and afterwards.

The Institute supports research on a diverse set of student academic outcomes that fall under two categories. The first category includes **academic outcomes that reflect learning and achievement in the core academic content areas** (e.g., measures of understanding and achievement in reading, writing, math, and science). The second category includes academic outcomes that reflect **students' successful progression through the education system** (e.g., course and grade completion and retention in grades K through 12; high school graduation and dropout; postsecondary enrollment, progress, and completion). **Social and behavioral competencies** encompass a range of student social skills, attitudes, and behaviors that may be important to students' academic and post-academic success.

The Institute also sets out the student academic outcomes of interest by education level as follows:

- For **PreKindergarten** (PreK; 3- to 5-year-olds), school readiness is the primary student academic outcome (i.e., pre-reading, language, vocabulary, early science and mathematics knowledge, and social and behavioral competencies that are seen as a key component of school readiness).
- For **Kindergarten through Grade 12**, the primary student academic outcomes include learning, achievement, and higher-order thinking in the core academic content areas of reading, writing, mathematics, and science measured by specific assessments (e.g., researcher-developed assessments, standardized tests, grades, end-of-course exams, exit exams) and student progression through education (e.g., course and grade completion, retention, high school graduation, and dropout).
- For **Postsecondary Education** (Grades 13-16), the primary student academic outcomes are access to, persistence in, progress through, and completion of postsecondary education, which

includes programs for students in developmental and bridge programs as well as programs that lead to occupational certificates, or associate's or bachelor's degrees. For students in developmental programs, additional outcomes include achievement in reading, writing, English language proficiency, and mathematics. The Institute is also interested in student achievement in postsecondary gateway courses for mathematics and science degrees and introductory English composition courses.

- For **Adult Education** (i.e., for students at least 16 years old and outside of the K-12 system who are engaged in Adult Basic Education, Adult Secondary Education, adult English literacy programs, and preparation programs for high school equivalency exams), the primary outcomes are student achievement in reading, writing, English language proficiency, and mathematics as measured by specific assessments, as well as access to, persistence in, progress through, and completion of adult education courses and programs.

## 2. Authentic Education Settings

Proposed research must be relevant to education in the United States and must address factors under the control of the U.S. education system (be it at the national, state, local, and/or school level). To help ensure such relevance, the Institute requires research to work within or with data from [authentic education settings](#). Authentic education settings include both in-school settings (including PreK centers) and formal programs that take place after school or out of school (e.g., after-school programs, distance learning programs, on-line programs) under the control of schools or state and local education agencies. Formal programs not under the control of schools or state and local education agencies are not considered as taking place in an authentic education setting and are not appropriate for study under the Education Research and Development Center program. Authentic education settings can be identified for the following education levels:

- **Authentic PreK Education Settings** are defined as center-based prekindergarten settings that include:
  - Public prekindergarten programs.
  - Child care centers.
  - Head Start programs.
- **Authentic K-12 Education Settings** are defined as the following:
  - Schools and alternative school settings (e.g., alternative schools or juvenile justice settings).
  - School systems (e.g., local education agencies or state education agencies).
  - Settings that deliver supplemental education services (as defined in Section 1116(e) of the Elementary and Secondary Education Act of 1965, as amended by the No Child Left Behind Act of 2001) (<http://www2.ed.gov/policy/elsec/leg/esea02/index.html>).
  - Career and Technical Education Centers affiliated with schools or school systems.
- **Authentic Postsecondary Education Settings** are defined as the following:
  - 2-year and 4-year colleges and universities that have education programs leading to occupational certificates or associate's or bachelor's degrees.
  - Career and Technical Education Centers affiliated with postsecondary institutions.
- **Authentic Adult Education Settings** include colleges, universities, K-12 institutions that serve adults, career and technical education centers, or alternative settings (e.g., libraries, community centers, correctional institutions) where the following are provided:
  - Adult English language programs.
  - Adult Basic Education (ABE).
  - Adult Secondary Education (ASE).
  - Programs to prepare students for high school equivalency exams.
  - Programs that assist students who lack secondary education credentials (e.g., diploma or GED) or basic skills that lead to course credit or certificates.

## C. APPLICANT REQUIREMENTS

### 1. 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.

### 2. The Principal Investigator and Authorized Organization Representative

#### *The Principal Investigator*

The Principal Investigator (PI) 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.<sup>1</sup>

Your institution is responsible for identifying the PI on a grant application and may elect to designate more than one person to serve in this role. In so doing, your institution identifies these PIs as sharing the authority and responsibility for leading and directing the research project intellectually and logistically. All PIs 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 project and should be listed as the PI. All other PIs should be listed as Co-Principal Investigators.

The PI will attend one meeting each year (for up to 2 days) in Washington, DC with other Institute grantees and Institute staff. The project's budget should include this meeting. Should the PI not be able to attend the meeting, he/she can designate another person who is key personnel on the research team to attend.

#### *The Authorized Organization Representative*

The Authorized Organization Representative (AOR) for the applicant institution is the official who has the authority to legally commit the applicant to (1) accept federal funding and (2) execute the proposed project. When your application is submitted through Grants.gov, the AOR automatically signs the cover sheet of the application, and in doing so, assures compliance with U.S. Department of Education policy on public access to scientific publications and data as well as other policies and regulations governing research awards (see [Part III.B Additional Award Requirements](#)).

### 3. Common Applicant Questions

- *May I submit an application if I did not submit a Letter of Intent?* Yes, but the Institute strongly encourages you to submit one. If you miss the deadline for submitting a Letter of Intent, contact the program officer listed in [Part II.B](#). Please see [Part III.C.1 Submitting a Letter of Intent](#) for more information.
- *Is there a limit on the number of times I may revise and resubmit an application?* No. Currently, there is no limit on resubmissions. Please see [Part III.C.2 Resubmissions and Multiple Submissions](#) for important information about requirements for resubmissions.
- *May I submit the same application to more than one of the Institute's grant programs?* No.

---

<sup>1</sup> The Institute uses the uniform format for reporting performance progress on Federally-funded research projects, the Research Performance Progress Report (RPPR <http://www.nsf.gov/bfa/dias/policy/rppr/>) for these reports.

- *May I submit multiple applications?* Yes. You may submit multiple applications if they are substantively different from one another. Multiple applications may be submitted within the same topic, across different topics, or across the Institute's grant programs.
- *May I apply if I work at a for-profit developer or distributor of an intervention or assessment?* Yes. You may apply if you or your collaborators develop, distribute, or otherwise market products or services (for-profit or non-profit) that can be used as interventions, components of interventions, or assessments in the proposed research activities. However, the involvement of the developer or distributor must not jeopardize the objectivity of the research. In cases where the developer or distributor is part of the proposed research team, you should discuss how you will ensure the objectivity of the research in the project narrative.
- *May I apply if I intend to copyright products (e.g., curriculum) developed using grant funds?* Yes. Products derived from Institute-funded grants may be copyrighted and used by the grantee for proprietary purposes, but the U.S. Department of Education reserves a royalty-free, non-exclusive, and irrevocable right to reproduce, publish, or otherwise use such products for Federal purposes and to authorize others to do so [34 C.F.R. § 74.36(a) (2013) ([http://www.ecfr.gov/cgi-bin/text-idx?SID=114a76aaaec6398e1309d731056ee2df&node=pt2.1.200&rgn=div5#se2.1.200\\_1315](http://www.ecfr.gov/cgi-bin/text-idx?SID=114a76aaaec6398e1309d731056ee2df&node=pt2.1.200&rgn=div5#se2.1.200_1315))].
- *May I apply to do research on non-U.S. topics or using non-U.S. data?* Yes, but research supported by the Institute must be relevant to education in the United States.
- *May I apply if I am not located in the United States or if I want to collaborate with researchers located outside of the United States?* Yes, you may submit an application if your institution is not located in the territorial United States. You may also propose working with sub-awardees who are not located in the territorial United States. In both cases, your proposed work must be relevant to education in the United States. Also, institutions not located in the territorial United States (both primary grantees and sub-awardees) cannot charge indirect costs.

## **D. CHANGES IN THE FY 2016 REQUEST FOR APPLICATIONS**

Changes were made to the RFA for the Research and Development Centers Program (CFDA 84.305C) competition in FY 2016. While the major changes are listed below, applicants (submitting new applications or resubmissions) should carefully read the Center requirements (see [Part II](#)), as well as the instructions for preparing your application (see [Part IV Preparing your Application](#)) to ensure that you understand and follow these changes. Major changes include the following:

- The Research and Development Center Program is only competing one topic – Virtual Learning – for the FY16 competition.
- Within the Virtual Learning topic, changes include the following:
  - More information is provided about the focus on low-income/low-performing students.
  - More information is provided about the kinds of instructional platforms that may be studied and the Institute's expectations for how the Center's research should be useful to the field.
  - There is now a maximum annual budget of \$2,000,000 (the maximum total budget remains \$10,000,000).

## E. READING THE REQUEST FOR APPLICATIONS

The Institute encourages both **Principal Investigators and Authorized Organization Representatives** to read this Request for Applications to learn how to prepare an application that meets three types of criteria:

- (i) Criteria that are required for an application to be sent forward for peer review (Requirements)
- (ii) Criteria that make for a strong (competitive) application and are used by the peer reviewers to assess the quality of the application.
- (iii) Criteria that are required for a highly-rated application to receive funding (Pre-Award Requirements)

### 1. Requirements

The Institute will examine all applications and determine whether they meet the following criteria. Applications that do not meet these criteria will not be sent forward for peer review.

- **RESPONSIVENESS**

- Meets general and topic-specific **R&D Center requirements** (see [Part II](#)).
- Meets the **Award requirements**.

R&D Center topic	Maximum Grant Duration	Maximum Grant Award
Virtual Learning	5 years	\$2,000,000/year (\$10,000,000 total)

- **COMPLIANCE** (see [Part IV](#))

- Follows **formatting and font size requirements** (see [Part IV.C](#)).
- Follows **page limits** (see [Part IV.D](#)).
- Includes only **allowable content** (see [Part IV.D](#)).
- Includes all **required content**, including Appendix A (if a resubmission) and Appendix D (see [Part IV.D](#)).

- **SUBMISSION** (see [Part IV](#) and [Part V](#))

- Submitted electronically via Grants.gov no later than **4:30:00 pm**, Washington, DC time, on August 20, 2015.
- Completed using the **correct application package** downloaded from Grants.gov (see [Part IV.B](#)).
- Includes **PDF files** that are **named and formatted appropriately** and that are **attached to the proper forms** in the application package (see [Part IV.D](#) and [Part V](#)).

### 2. Pre-Award Requirements

- If your application is being considered for funding following peer review, you may be required to provide further information on the proposed research activities (see [Part III.B](#)) before a grant award is made. For example, you may be required to provide updated letters of agreement showing access to the authentic education settings where your work is to take place or to the secondary data sets you have proposed to analyze. You may be asked for additional detail regarding your capacity to disseminate research findings. You may be required to provide greater detail regarding your proposed work. Significant revisions to the project that arise from these information requests will have to be addressed under the original budget. The Institute strongly encourages applicants to carefully review all Requirements and criteria that make for a strong (competitive) application to ensure that their applications propose high-quality work.

## **PART II: R&D CENTER REQUIREMENTS**

### **A. GENERAL REQUIREMENTS FOR ALL R&D CENTER APPLICATIONS**

#### **1. Requirements for the Focused Program of Research**

The Institute intends for the work of the R&D Centers to include a focused program of research that ideally will result in solutions or answers to specific education problems at the end of 5 years. The Institute expects the focused program of research to comprise at least 75 percent of a Center's activities. The exact percentage will depend on the cost and effort required to carry out the focused program of research.

For the FY 2016 R&D Center competition, the Institute expects the focused program of research to consist of a set of tightly linked studies that build on each other and together accomplish the goals specified for the topic of **Virtual Learning**. The Institute strongly discourages applications that propose a model in which multiple investigators each conduct separate studies that are only loosely coordinated around the topic.

Although the Centers have broader functions than conducting a focused program of research, the focused research program is the only portion of the activities of a Center that can be well-specified in advance and, thus, can provide a fair basis for comparing and evaluating applications for funding. Consequently, the majority of the application should be a detailed description of the focused program of research.

In addition, you should describe the major publications and products that will emerge from the Center's work. Your description should explain whether the findings from the R&D Center's studies will be integrated, or if you intend to report on these findings separately. The Institute encourages applicants to consider at least one publication that will synthesize the research and draw lessons across studies and study sites.

The Institute encourages applicants to consider the various audiences for the research and the types of publications and products that will be best suited to their needs. These may include reports, research briefs, methodological papers, data collection tools, and other documents. The Institute encourages publications in scholarly journals, but also encourages applicants to consider venues that are more likely to be read by policymakers and practitioners.

#### **2. Requirements for Other Center Activities**

In addition to research on the focal topic, R&D Centers are required to conduct supplemental activities as needed and to provide leadership in the topic area. The Institute will work cooperatively with the Center to develop complete plans for these activities once the Center is awarded.

##### **a) Supplemental Activities**

As part of the Center's work, you may conduct supplemental activities (e.g., meetings, smaller-scale studies) that speak to other issues that are important within the context of the broad topic of the Center. The R&D Center will work cooperatively with the Institute to select and design these supplemental activities to respond to pressing policy and practice needs within the topic covered by the Center. For this reason, the Institute does not expect a detailed plan for these supplemental activities in the application. Capacity for conducting supplemental activities will carry weight in the scoring of the application. You should set aside up to 5 percent of the Center's budget annually to support these supplemental activities.

##### **b) National Leadership and Outreach Activities**

As part of the Center's work, you are expected to provide national leadership within the Center's topic area by engaging in dialogue with researchers, policymakers, and practitioners to identify promising areas

of research, development, and dissemination for the field. The Institute expects applicants to develop a Center website that provides links to reports, papers, and other resources that have been peer reviewed or have been through a comparable quality review process. The Institute also encourages webinars, podcasts, and other innovative uses of technology to share information and encourage discussion of the Center's work among policymakers and practitioners. In this section, you should describe the audiences you intend to reach and the various activities you will undertake to communicate with these audiences. Live events as well as virtual forums are encouraged. To save on costs for Washington, DC meetings, the Institute can arrange for free use of meeting spaces at the Department of Education.

Explain why the proposed Center staff is qualified to fulfill this leadership role if awarded a Center. If appropriate, identify appropriate organizations and agencies with which you might work in carrying out leadership activities. Include a discussion of the review process you will use for Center reports and papers. Capacity for carrying out leadership and national activities will carry weight in the scoring of the application.

### **3. Management and Institutional Resources**

The Institute anticipates that the focused program of research, the supplemental activities, and the national leadership activities will require the coordination of multiple scientists and other partners. Therefore, describe your plans and procedures for the overall management of the Center and its diverse activities.

If the plans for the first year of grant activities include substantial work to be conducted in schools or other [authentic education settings](#), document the availability and cooperation of the schools or other authentic education settings that will be required to carry out that work via a letter of agreement from the education organization(s) in [Appendix D](#) of your application.

### **4. Personnel**

Competitive applications will have leadership and staff that collectively demonstrate the following:

- Expertise in the content areas relevant to the Center topic.
- The methodological expertise to carry out the proposed projects.
- Sufficient experience working with authentic education settings to carry out the proposed projects.
- Experience that is relevant to national leadership activities.

In the Center narrative, briefly describe the qualifications, roles, responsibilities, and percent of time (effort over the calendar year) to be devoted to the Center for all key personnel.

## B. R&D CENTER TOPIC REQUIREMENTS

### 1. Virtual Learning

Program Officer: Dr. Erin Higgins (202-208-3749; [Erin.Higgins@ed.gov](mailto:Erin.Higgins@ed.gov))

Technological advances are rapidly changing education and are widely seen as having the potential to improve student learning and reduce achievement gaps; however, to date that potential has not been fully realized (Davies and West, 2014). Online and blended learning strategies that combine digital and classroom instruction create new opportunities for teachers and students; Massive Open Online Courses (MOOCs) and other digital interventions reach great numbers of users far beyond what is traditionally found in a single classroom; and education technology tools may allow researchers and practitioners to gather and analyze large amounts of data quickly and easily. Digital interactions have the potential to be logged automatically and examined systematically to identify, with efficiency, which students are capable of more demanding assignments, need extra help, or are at risk of dropping out. With these data, developers and researchers can also make rapid adjustments to technological interventions and online instructional delivery and conduct experiments to identify the most effective instructional practices for individual students (Aleven, Beal, and Graesser, 2013; Baker and Siemens, 2014). Notwithstanding the promise of these technological advances, there are still many open questions about whether education technologies and the “big data” they generate can lead to meaningful improvements in teaching and learning. Moreover, still emerging and needing attention are the infrastructure to support the analytic and instructional use of the data, to store and share these data with others, and to mine data generated from the use of education technologies. Finally, the Institute is particularly interested in learning about how such technologies may support the academic needs of low-income and/or low-performing students.

In response to these questions and challenges, the Institute seeks to create a national Research and Development Center, referred to here as the Virtual Learning Laboratory (Lab). Its broad purposes are to support research on and evaluation of the instructional practices, content, and learning tools provided to students within widely-used online instructional delivery platforms,<sup>2</sup> and to explore how the large amounts of data generated within such platforms can be used to address the practical needs and questions posed by school administrators, teachers, policymakers and researchers. The Institute is particularly interested in supporting projects that will help states and schools make better use of education technology to address the academic needs of low-income students and/or low-performing students. The Lab is expected to impact the field by developing and/or demonstrating the value of 1) methodological approaches to researching and developing the instructional practices, content, and learning tools offered by online instructional delivery platforms and 2) approaches to analyzing the data produced by those platforms. Importantly, the Lab is also expected to engage with the larger education community to exchange ideas; disseminate information and resources, including methodological papers that may benefit other researchers developing and evaluating online instructional delivery platforms and education technologies; and provide workshops or other opportunities for practitioners and/or researchers.

Specifically, the Lab is expected to **conduct a focused program of research** that will:

- (i) Use experimental methods to evaluate and improve the instructional practices, content, and/or learning tools offered by one or more widely-used online instructional delivery platforms, with a particular focus on making improvements for low-income and low-performing students in K-12.

---

<sup>2</sup> By “online instructional delivery platform,” the Institute means the technological infrastructure used to deliver any of a number of education technologies, and collect large amounts of information about students, and includes, for example, learning management systems (e.g., Blackboard), intelligent tutors, state level virtual schools (e.g., Florida Virtual Schools), and MOOCs, among others. By “widely used,” the Institute means used across multiple states, in the majority of districts in a single state, or in the majority of schools in one or more large districts.

- (ii) Advance the field's understanding of how the large amounts of data generated within online instructional delivery platforms may be used to address important research questions and improve teaching and learning.

In addition, the Lab will provide **leadership and outreach** that will:

- (i) Inform policymakers, practitioners, and other nontechnical audiences about big data for education research and practice.
- (ii) Create a "hub" where researchers, developers, and practitioners will come together – both virtually and in person – to discuss research goals and methods related to online learning, review emerging research findings, and support new partnerships and collaborations.
- (iii) Build the field's capacity to conduct well-designed studies of online learning and to use big data by offering workshops and other activities.

The potential of education technology to improve teaching and learning has led to its widespread adoption within the education system (Davies and West, 2014). Developers and researchers have partnered to create state-of-the-art education technologies that are being used by schools and districts across the country. States such as Florida are implementing Virtual Schools, where online courses are available across the K-12 continuum. Some teachers are using "flipped classrooms," where instruction occurs at home through freely-available videos on the internet (e.g., from the Kahn Academy) or online courses, so that teachers or staff can use classroom time to review the conveyed material, answer questions, and provide human, real-time feedback to students as they complete assigned work. At the postsecondary level, consortia composed of major universities, faculty and developers are creating MOOCs (e.g., Udacity, Coursera, EdX) to supplement traditional classroom instruction or to enable students to earn course credits online. To support such activities, there is a growing set of online resources (e.g., Better Lesson, Gooru, LearnZillion, and others) where instructors can locate, create, share, modify, review, and rate various digital materials.<sup>3</sup>

Many private and public funders, including the Institute, have made substantial investments in the development of a wide range of education technology tools and practices that can be deployed via these online platforms. The Institute's investment in more than 100 individual research projects reflects the diversity of education technologies currently available.<sup>4</sup> For example, the Institute has supported the development and testing of a system that automatically analyzes text features and enables a match between reader and text (Graesser, et al., 2011), an intelligent tutor intended to support improvements in students' reading comprehension (Wijekumar and Meyer, 2006), and a web-delivered system that both supports completion of math homework and assesses student performance (Koedinger, et al., 2010). In addition, the Institute also awarded two national Research and Development (R&D) Centers on Instructional Technology in 2008 to develop and test the potential of leveraging gaming technology to support improvements in academic outcomes.<sup>5</sup>

The widespread interest in and support for education technology is related to the many potential benefits it offers, including the opportunities it affords teachers to supplement traditional classroom activities and deliver personalized instruction to students (Davies and West, 2014). Another important benefit is the ability of education technology to capture the digital interactions of users. These data may be used to

---

<sup>3</sup> For a review of online resources, see chapter 5 of U.S. Department of Education (2013). *Expanding Evidence Approaches for Learning in a Digital World*. Washington, D.C.: U.S. Department of Education.

<sup>4</sup> These projects are supported across different topics and program areas in the Institute's National Research Centers, including Cognition and Student Learning, Mathematics and Science Education, Reading and Writing, Small Business Innovation Research, and Education Technology. See <http://ies.ed.gov/ncser/projects/> and <http://ies.ed.gov/ncser/projects>.

<sup>5</sup> See <http://ies.ed.gov/ncser/randd/> for information on the Institute's R&D Centers.

measure student learning outcomes as well as to provide insights into students' thought processes and learning strategies. They may also be linked with other information systems to provide a complete picture of students' backgrounds and academic performance. For example, log data generated by students using an intelligent tutor may be combined with school-level administrative records to determine how these students perform on standardized assessments or to examine usage by students in different demographic groups. Such datasets may be valuable for predicting which groups of students may be in need of additional education support and for developing new strategies for improving student outcomes and reducing academic achievement gaps (West, 2012).

As developers continue to create education technologies and make them available to practitioners via online platforms, an open question is whether and how these education technologies effectively improve teaching and learning. On the one hand, a recent special issue of the *Journal of Educational Psychology* focused on advanced learning technologies generally supports the assertion that these technologies can have a "substantial positive impact on student's learning outcomes" (Aleven, Beal, and Graesser, 2013, pg. 929). In addition, a recent meta-analysis concludes that intelligent tutoring systems, a subset of online instructional delivery, can have positive effects on college students' academic learning (Steenbergen-Hu and Cooper, 2013a). On the other hand, reviews of technological interventions in K-12 settings find few rigorous evaluations that show improved student learning outcomes compared to typical classroom instruction (Dynarski, et al., 2007; Campuzano, et al., 2009; Steenbergen-Hu and Cooper, 2013b).

One particularly challenging issue that developers and researchers of education technology must address is how states and schools can make better use of education technology to meet the academic needs of low-income students and/or low-performing students. These students have the potential to benefit greatly from personalized instruction, and their teachers may benefit from rich data about students' individual needs; however, both students and teachers may face barriers to using education technologies as intended, such as access to technology (e.g., internet access, computing resources at the school) and lack of experience with technology inside and outside of the classroom. Without including this high risk population of students, and their teachers, in the development and evaluation process, education technologies will fall short of impacting learning for students who have the greatest needs and could stand to benefit most.

Given the omnipresence of technology in modern life, it may be that the most pertinent research questions have less to do with the effectiveness of online and blended learning relative to traditional (i.e., non-technological) modes of instruction and more to do with understanding how to improve delivery so that more students derive greater benefit. Such questions may include:

- How can online and blended learning be used to address the instructional needs of learners across the spectrum – typical, advanced, and struggling – more effectively?
- How can online instruction be designed and implemented to promote the learning and retention of material, not just in the short term, but also over longer school-relevant time periods?
- How can online courses be designed so that students are more likely to persist in and complete the instruction?
- How can online instruction be targeted and delivered to meet the needs of low-income students more effectively, and to reduce achievement gaps between higher- and lower-performing students?

There are also many questions about how the data generated from the education technologies delivered through online platforms can be used to advance education research and practice, such as:

- What data, metadata, analytical tools, and models are most useful for understanding and improving student learning?

- How can big data be used to predict students' performance and help them receive the instruction and services they need?
- What practices, protocols, and policies should researchers and Institutional Review Boards (IRBs) be attentive to as they strive to protect students' privacy?
- Which research and academic skill sets are needed to effectively conduct this type of work, and what training can be employed so others can develop the necessary skills?

The Institute recognizes that many researchers and developers of online instruction are already tackling these and other questions. The Lab is intended to augment these efforts by supporting new research on the instructional practices, content, and/or learning tools within online learning platforms that are already in wide use, with the goal of developing and/or demonstrating the value of particular methodological approaches to iteratively developing and evaluating the instructional practices, content, and/or learning tools within online learning platforms and developing new tools and guidelines to help education researchers and practitioners use big data in meaningful and responsible ways.

#### **a) Significance of the Focused Program of Research**

In order to be responsive and sent forward for peer review for the Virtual Learning Lab, you **must** identify **one** widely-used online instructional delivery platform that will be used to conduct your research. **This platform must be intended for use by students in an [authentic K-12 education setting](#)** (e.g., schools and classrooms). You may choose to include additional platforms in your research, and these may be intended for use either by K-12 or with postsecondary students. All online instructional delivery platforms included **must** be intended to impact student outcomes in reading, writing, mathematics, and/or science. The online instructional delivery platform(s) you choose may be used to provide any of the following:

- Online courses offered by a state, school district, or postsecondary institution and limited to their students.
- Online courses with open enrollment (i.e., MOOCs).
- Online schools or certificate/degree programs.
- Intelligent tutors.
- Blended learning models that combine online and classroom instruction.
- "Flipped" models in which students receive instruction online and use classroom time for homework or other activities.

You should propose an overall vision for the Lab. You should explain your understanding of the issues and challenges the Lab is meant to address, and describe a coordinated set of research, leadership and outreach activities that you believe will provide the greatest benefit for the field. You should include a review of the research literature that will inform the Lab's work, and make clear how the Lab will contribute to this base of knowledge. **The Institute is particularly interested in supporting projects that will help states and schools make better use of education technology to address the academic needs of low-income students and/or low-performing students.**

Your application should introduce and describe the widely-used online instructional delivery platform (or platforms) you intend to use for your Virtual Learning Lab. You should describe the educational goals and objectives of the platform, and provide data on the number and characteristics of students who use it. Identify the content area or areas addressed by the platform. The Institute does not have the expectation that the platform (or platforms) being studied will address all content areas or serve students of all ages. Strong proposals will likely have a clear, focused goal (e.g., to improve middle school students' mathematics performance). You should include a rationale for why the content area and student population you have chosen are critical to address.

Describe the problems or issues with the instructional practices, content, and/or learning tools delivered through the platform(s) that have been identified as needing improvement. For example, do students who use an online learning tool have difficulty understanding major concepts, or retaining the skills they learn? Do students who begin an online course drop off before completion? Do teachers who use a blended learning or flipped classroom model struggle with developing classroom activities that complement the online instruction and improve student learning? You should describe the problems or issues that the Lab will address in detail, and provide data, if possible, to support your argument that the problems or issues are significant.

The Institute recognizes that the online instructional delivery platform will likely be intended for a specific content area (e.g., reading/vocabulary instruction) and population (e.g., elementary school students), and will address that area in a particular way (e.g., through an intelligent tutoring system); therefore, the research findings may not be generalizable to the field as a whole. However, the research questions addressed should be broad enough that the findings will benefit more than a single education agency or developer/provider of online instruction (e.g., studies will seek to identify promising principles of instructional practice to improve elementary school reading comprehension performance; such findings may also be informative for other types of education technologies as well as for in vivo instructional practice).

The Institute strongly encourages applicants to propose partnerships between researchers, platform developers, and practitioners within states and/or school districts who use online instructional delivery platforms. For example, you may partner with a developer and a state or school district to implement and evaluate changes in a widely used online course, or to compare alternative approaches to using technology in a flipped classroom environment. Such partnerships are intended to help the research team formulate plans that focus on critical issues and generate useful results. Importantly, the partnerships are also intended to ensure that researchers have access to the data needed for the research. In your application, you should identify the platform developers, states, and/or school districts you intend to work with, and explain what factors you considered in choosing them (e.g., the size and academic needs of their student population, their commitment to technological innovation, etc.). You should also explain how the partnerships will operate and what roles platform developers and state and/or school district personnel will play in the Lab. In [Appendix D](#), you **must** attach letters of agreement from all the key partners that describe their roles.

For the focused program of research, you **must** propose two sets of activities: **experimental studies** and **measurement studies**. The goal of the experimental studies is to identify ways to improve the instructional practices, content, and learning tools delivered to students within widely-used online platforms in order to produce better outcomes for students, with a particular focus on low-income and/or low-performing K-12 students. The goals of the measurement studies are to explore whether and how the large amounts of data generated through the education technologies offered by online platforms may be used to develop valid and reliable indicators of student learning and progress, and to demonstrate how such indicators may be used to predict students' performance and deliver the instruction or support they need. The Institute encourages applicants to consider how the methodological lessons from the research may benefit other researchers working with online instructional delivery platforms.

### **(1) Experimental Studies**

**Applicants must propose at least two experimental studies** (and possibly more, depending on the scope of each of the studies). The experiments should focus on testing strategies to improve the instructional practices, content, and/or learning tools provided to students within online instructional delivery platforms. The Institute is especially interested in studies that examine effective strategies to differentiate instructional practices, content, and/or learning tools based on student needs. Applicants have the option of proposing a study of a [fully developed](#) education technology that does not need to

undergo an improvement process before it is evaluated; however, at least one study should be designed with the intention of improving an education technology that is in wide use.

The Institute strongly encourages applicants to take advantage of the special features of online learning in designing their experiments, including the ability to introduce changes in content, instructional delivery, and format easily, and to observe results quickly. For example, applicants may consider conducting a series of small experiments to test changes in online course content that are designed to improve students' comprehension and retention of major concepts, or to increase students' persistence and completion. Log data generated automatically through the use of digital technologies may provide insights into how students are responding to the new material and whether it is leading to the desired changes in student outcomes. Administrative data from a state education agency or school district may provide covariates to help identify which types of students benefit most (or least) from the course changes. The experiments should be designed to help technology developers and school officials make decisions on which changes to adopt, and to identify where new strategies may need to be developed and tested. After completing a series of small experiments, applicants may want to conduct an experiment in which they test the impact of the full set of changes they have made against an earlier version of the online course to determine whether it produces significantly better outcomes for students. They may also want to test the course against an alternative model, in order to determine which is more effective for particular groups of students.

## **(2) Measurement Studies**

As noted earlier, one of the benefits of education technology is its ability to capture large amounts of information on students' digital interactions, but the fact that the data are "big" does not necessarily mean that they are informative or useful. In response, the Institute asks applicants to propose one or more measurement studies that address questions such as the following:

- How can researchers use the large amounts of data generated by education technologies delivered through online platforms to create valid and reliable measures of student learning or other outcomes?
- What measures are most useful for predicting which students may need additional supports or other kinds of instruction?
- How can the data generated by education technologies delivered through online platforms be used as a measurement tool to identify factors that mediate student learning or other outcomes?
- What tools and procedures could be developed to help visualize and display big data for use by education researchers and practitioners?

## **b) Research Plan for the Focused Program of Research**

### **(1) Experimental Studies**

In your application, you should explain your approach to conducting experiments that are designed to help education technology developers and education practitioners make improvements in the instructional practices, content, and/or learning tools they are using. Present a detailed research plan that includes the following:

- (i) A clear statement of the problem or issue that your study will address.
- (ii) An explanation of the strategy (or strategies) you will introduce to improve student outcomes.
- (iii) Your [theory of change](#) for how your strategy (or strategies) will lead to better student outcomes.
- (iv) A description of your research sample.

- (v) A clear explanation of your experimental design and random assignment process.
- (vi) The student outcomes you will measure.
- (vii) The data sources you will use.
- (viii) The procedures you will use to analyze your data and make decisions on whether the strategies you are testing lead to meaningful improvements in student outcomes.
- (ix) A timeline for your research, including the timing and frequency of your experiments.
- (x) A description of how you will work with the developer and/or the education agency to make improvements, based on your analysis.

The Institute anticipates that most, if not all, of the data collected during the experimental studies will derive from the digital interactions with the education technologies offered by the online platforms and administrative records provided by states or school districts, but applicants may collect and analyze other data. For example, you may propose to conduct surveys of students to capture academic or social-behavioral outcomes that are not available through automated sources, or to conduct observations or interviews with teachers and students to identify mediating factors that may affect student outcomes. If you propose this type of work, you should explain its purpose and how it will support the goals of your study. You should also provide an explanation of your methodology, including your sampling strategy, data collection plans, and analytic approach.

The Institute recognizes that some applicants may have a compelling reason to conduct an experiment of a fully developed education technology (i.e., one that does not need to go through an improvement process before it is ready to be evaluated). This would be analogous to a Goal 3 [Efficacy Study](#) or a Goal 4 Effectiveness Study under the Institute's Education Research Grants Program (CFDA 84.305A). For example, a state or school district may be considering an education technology that is used elsewhere, but wants to conduct an evaluation to test its effects before deciding whether it wants to adopt the new technology statewide or district-wide. Applicants may propose such research so long as they also propose at least one study that uses experimental methods to make improvements in a widely-used online instructional delivery platform, as outlined above. If you propose an efficacy or effectiveness study of a fully developed technology, be sure to explain how it will address the most critical research questions posed by the education agencies and/or technology developers with whom you are working. Your research plan should include a detailed discussion that includes:

- (i) The research questions or hypotheses you will address.
- (ii) A research design for the study of the technology's impact on student education outcomes.
- (iii) Your theory of change for how the technology will improve student outcomes.
- (iv) A description of your research sample.
- (v) A clear explanation of your experimental design and random assignment process.
- (vi) The student outcomes you will measure.
- (vii) The data sources you will use.
- (viii) A power analysis.
- (ix) Your data analysis plan.
- (x) Your timeline for completing the study.
- (xi) A description of how you will work with education agencies and/or the technology developer to use the results of the study to inform their decision-making.

Applicants who propose an efficacy or effectiveness study are encouraged to review the research requirements for a Goal 3 or Goal 4 study in the Institute's Education Research Grants program to make sure your research plan is complete. The Institute expects such experiments to meet the What Works Clearinghouse evidence standards, with or without reservations (<http://ies.ed.gov/ncee/wwc>).

## (2) Measurement Studies

For each measurement study you propose, you should make clear why it is needed and how it will advance the field. You should also present a research plan that explains:

- (i) The methods for developing and [validating](#) the [assessment\(s\)](#), or modifying and validating an existing assessment(s).
- (ii) The practical applications of the assessments for education researchers and/or practitioners.
- (iii) How psychometric evidence will be gathered to support the utility of the assessment(s) for the prescribed purpose.
- (iv) The sample and setting and how they will be appropriate for meeting the research aims of the project.
- (v) The characteristics, size, and analytic adequacy of the sample to be used in the study, including justification for exclusion and inclusion criteria.
- (vi) A timeline.

If you are proposing to develop and validate a new measure or set of measures, you should provide a detailed description of the [iterative development processes](#) that you will use to develop the assessment(s), including field testing procedures and processes for item revision. Include a detailed description of the validation activities and the types of evidence you will gather on the [reliability](#) and [validity](#) of the assessment(s) for the specified purpose, populations, and contexts. The Institute recommends that you refer to the guidelines for a Goal 5 Measurement study in its Education Research Grants Program (CFDA 84.305A) to make sure your research plan is complete.

Finally, the Institute recognizes that there may be practical, legal or ethical concerns related to big data that need to be considered. For example, it may be possible to use big data to create extensive educational profiles of individual students. While such profiles may have beneficial uses (e.g., to help schools identify students who may need extra support), there could also be unintended, negative uses (e.g., labeling students as "slow learners," and relegating them to programs that reduce their educational opportunities). Given such possibilities, what rules and procedures should be established for sharing and linking student data? Who should have access and for what purposes? What steps must be taken to protect personally identifiable information and guard against potential misuses? The Institute encourages applicants to anticipate such questions and issues while developing plans for their studies, and to consider publishing a paper or developing written guidelines that will help others benefit from the Lab's thinking and experience.

### c) Leadership and Outreach Activities

The Lab is intended to function as an objective, reliable source of information on virtual learning and the uses of big data for education research and practice. You should identify the audiences you plan to reach – including both technical and nontechnical audiences – and the various publications and products you will create for these audiences. You should also describe the efforts you will make to disseminate your publications and products. At a minimum, the Institute expects the Lab to maintain a website that describes its goals and activities and makes its research reports, methodological tools, and other products readily accessible to the public. The Institute also encourages the use of webinars, podcasts, videos, and other new media to broaden the reach of the Lab at a relatively low cost.

The Institute envisions the Lab to serve as a “hub” where researchers, developers and practitioners will come together – both virtually and in person – to discuss research goals and methods related to online learning; review emerging research findings; and help foster new research partnerships and collaborations. This could be achieved through a variety of activities, such as hosting researchers and developers from other organizations to spend time working on Lab projects; offering summer workshops to give graduate students, researchers or practitioners who are not directly affiliated with the Lab an opportunity to understand how big data can be used to answer important research questions; and organizing visits by state or school district leaders to the sites where the Lab is conducting its research, to see firsthand how education technologies are being used and improved. The Institute is not prescribing any particular set of activities and encourages applicants to propose their own ideas. Whatever you propose, be sure to include information on the types of individuals or groups you hope to engage in the Lab’s activities, and describe the strategies you will use to reach out to and involve them.

#### **d) Management and Institutional Resources**

As noted above, the Institute encourages partnerships between researchers, platform developers, and practitioners within states and/or school districts who use online instructional delivery platforms. Describe your plans and procedures for the overall management of the Center, its diverse set of partnerships, and its diverse activities.

In [Appendix D](#), you **must** attach letters of agreement from all the key partners that describe their roles. If the plans for the first year of grant activities include substantial work to be conducted in schools or other [authentic education settings](#), document the availability and cooperation of the schools or other authentic education settings that will be required to carry out that work via a letter of agreement from the education organization(s) in Appendix D of your application.

#### **e) Personnel**

Strong applications will include leadership and staff that collectively demonstrate the following:

- Expertise in the development and implementation of online instructional delivery platforms;
- Experience working with low-income and/or low-performing K-12 students;
- Content expertise in the content area(s) addressed by the online platform(s) being studied and expertise in the learning sciences to inform the development and identification of promising instructional practices, content, and learning tools;
- Expertise in the methodological approaches used for the experimental and measurement studies;
- Sufficient experience working with authentic education settings to carry out the proposed projects; and
- Experience that is relevant to the national leadership activities being proposed in the application.

In the Center narrative, briefly describe the qualifications, roles, responsibilities, and percent of time (effort over the calendar year) to be devoted to the Center for all key personnel.

#### **f) Award Requirements**

**The maximum duration of the Virtual Learning Laboratory R&D Center is 5 years.** An application proposing a Center length of greater than 5 years will be deemed nonresponsive to the Request for Applications and will not be accepted for review. **The maximum annual award for the VLL is \$2,000,000 (annual cost = direct costs + indirect costs), and the total award is not to exceed \$10,000,000 (total cost = direct costs + indirect costs).** An application of this type proposing a budget higher than the maximum annual or maximum total award amount will be deemed nonresponsive to the Request for Applications and will not be accepted for review. **The focused program of research is to comprise at least 75 percent of the total budget** for the Lab.

# PART III: COMPETITION REGULATIONS AND REVIEW CRITERIA

## A. FUNDING MECHANISMS AND RESTRICTIONS

### 1. Mechanism of Support

The Institute intends to award one cooperative agreement pursuant to this Request for Applications.

### 2. Funding Available

Although the Institute intends to support the R&D Center topic described in this announcement, all awards pursuant to this Request for Applications are contingent upon the availability of funds and the receipt of meritorious applications. The Institute makes its awards to the highest quality applications as determined through scientific peer review.

Please attend to the maximums set for Center length and budget. **If you request an award length longer than the maximum or an annual or total budget higher than the maximum, your application will be deemed nonresponsive and will not be reviewed.**

- *R&D Center on Virtual Learning*

The size of the award depends on the scope of work for the Center. The **maximum duration of the award is 5 years**. The **maximum annual award for the Center is \$2,000,000** (annual cost = direct costs + indirect costs), **and the total award is not to exceed \$10,000,000** (total cost = direct costs + indirect costs).

The Institute expects the *focused program of research* to comprise at least 75 percent of a Center's activities depending on the cost and effort required to carry out the focused program of research, with the remainder of the budget devoted to supplemental activities, leadership activities, and any administrative activities not included in the focused program of research. You should allocate at least 5 percent of the Center's budget annually to the supplemental activities of the Center that will be determined cooperatively with the Institute after an award is made.

Although the plans of the Institute include the Education Research and Development Center topic 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. No more than one cooperative agreement will be awarded under the Virtual Learning topic because **the Institute only intends to establish one Center for this topic**. However, because the Institute is committed to funding only high quality work, the Institute will make an award for a Center only if at least one application is deemed meritorious under peer review.

### 3. Cooperative Agreements

Through the terms of the cooperative agreement, grantees will work with the Institute to plan work related to supplemental and leadership activities.

### 4. Special Considerations for Budget Expenses

#### *Indirect Cost Rate*

When calculating your expenses for research conducted in field settings, you should apply your institution's negotiated off-campus indirect cost rate. Questions about indirect cost rates should be directed to the U.S. Department of Education's Indirect Cost Group <http://www2.ed.gov/about/offices/list/ocfo/fipao/icgindex.html>.

Institutions, both primary grantees and subawardees, not located in the territorial U.S. cannot charge indirect costs.

### *Meetings and Conferences*

If you are requesting funds to cover expenses for hosting meetings or conferences, please note that there are statutory and regulatory requirements in determining whether costs are reasonable and necessary. Please refer to OMB's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance), 2 CFR, [§200.432 Conferences](#).

In particular, federal grant funds cannot be used to pay for alcoholic beverages or entertainment, which includes costs for amusement, diversion, and social activities. In general, federal funds may not be used to pay for food. A grantee hosting a meeting or conference may not use grant funds to pay for food for conference attendees unless doing so is necessary to accomplish legitimate meeting or conference business. You may request funds to cover expenses for working meetings (e.g., working lunches); however, the Institute will determine whether these costs are allowable in keeping with the Uniform Guidance Cost Principles. Grantees are responsible for the proper use of their grant awards and may have to repay funds to the Department if they violate the rules for meeting- and conference-related expenses or other disallowed expenditures.

## **5. 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.

## **6. Applicable Regulations**

Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) codified at CFR Part 200. The Education Department General Administrative Regulations (EDGAR) in 34 CFR parts 77, 81, 82, 84, 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.

## **B. ADDITIONAL AWARD REQUIREMENTS**

### **1. Public Availability of Data and Results**

Recipients of awards are expected to publish or otherwise make publicly available the results of the work supported through this program. Institute-funded investigators must submit [final 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. Investigators and their institutions are responsible for ensuring that any publishing or copyright agreements concerning submitted articles fully comply with this requirement.

### **2. Special Conditions on Grants**

The Institute may impose special conditions on a grant if the grantee is not financially stable, has a history of unsatisfactory performance, has an unsatisfactory financial or other management system, has not fulfilled the conditions of a prior grant, or is otherwise not responsible.

### 3. Demonstrating Access to Data and Authentic Education Settings

The research you propose to do will most likely require that you have (or will obtain) access to [authentic education settings](#) (e.g., classrooms, schools, districts), secondary data sets, or studies currently under way. In such cases, you will need to provide evidence that you have access to these resources prior to receiving funding. Whenever possible, include letters of agreement in [Appendix D](#) from those who have responsibility for or access to the data or settings you wish to incorporate when you submit your application. Even in circumstances where you have included such letters with your application, **the Institute may require additional supporting evidence prior to the release of funds**. If you cannot provide such documentation, the Institute may not award the grant or may withhold funds.

You will need supporting evidence of partnership or access if you are:

- *Conducting research in or with authentic education settings* - If your application is being considered for funding based on scientific merit scores from the peer-review panel and your research relies on access to authentic education settings (e.g., schools), you will need to provide documentation that you have access to the necessary settings in order to receive the grant. This means that if you do not have permission to conduct the proposed project in the necessary number of settings at the time of application, you will need to provide documentation to the Institute indicating that you have successfully recruited the necessary number of settings for the proposed research before the full first-year costs will be awarded. If you recruited sufficient numbers of settings prior to the application, the Institute may ask you to provide documentation that the settings originally recruited for the application are still willing to partner in the research.
- *Using secondary data sets* - If your application is being considered for funding based on scientific merit scores from the peer-review panel and your research relies on access to secondary data sets (such as federally-collected data sets, state or district administrative data, or data collected by you or other researchers), you will need to provide documentation that you have access to the necessary data sets in order to receive the grant. This means that if you do not have permission to use the proposed data sets at the time of application, you must provide documentation to the Institute from the entity controlling the data set(s) before the grant will be awarded. This documentation must indicate that you have permission to use the data for the proposed research for the time period discussed in the application. If you obtained permission to use a proposed data set prior to submitting your application, the Institute may ask you to provide updated documentation indicating that you still have permission to use the data set to conduct the proposed research during the project period.
- *Building off of existing studies* - You may propose studies that piggyback onto an ongoing study (i.e., that require access to subjects and data from another study). In such cases, the Principal Investigator of the existing study should be one of the members of the research team applying for the grant to conduct the new project.

In addition to obtaining evidence of access, the Institute strongly advises applicants to establish a written agreement, within 3 months of receipt of an award, 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.

## C. OVERVIEW OF APPLICATION AND PEER REVIEW PROCESS

### 1. Submitting a Letter of Intent

The Institute strongly encourages potential applicants to submit a Letter of Intent by May 21, 2015. Letters of Intent are optional, non-binding, and not used in the peer review of a subsequent application. However, when you submit a Letter of Intent, one of the Institute's Program Officers will contact you

regarding your proposed research to offer assistance. The Institute also uses the Letter of Intent to identify the expertise needed for the scientific peer-review panels and to secure a sufficient number of reviewers to handle the anticipated number of applications. Should you miss the deadline for submitting a Letter of Intent, you still may submit an application. If you miss the Letter of Intent deadline, the Institute asks that you inform the relevant program officer of your intention to submit an application.

Letters of Intent are submitted online at (<https://iesreview.ed.gov>). **Select the Letter of Intent form for the topic under which you plan to submit your application.** The online submission form contains fields for each of the seven content areas listed below. Use these fields to provide the requested information. The project description should be single-spaced and should not exceed one page (about 3,500 characters).

- Descriptive title
- R&D Center Topic that you will address
- Brief description of the proposed R&D Center
- Name, institutional affiliation, address, telephone number and e-mail address of the Principal Investigator and any Co-Principal Investigators
- Name and institutional affiliation of any key collaborators and contractors
- Duration of the proposed R&D Center (attend to the duration maximum)
- Estimated total budget request (attend to the annual and total budget maximums)

## **2. Resubmissions and Multiple Submissions**

If you intend to revise and resubmit an application that was submitted to one of the Institute's previous competitions but that was not funded, you must indicate on the [SF-424 Form of the Application Package \(Items 4a and 8\) \(see Part V.E.1.\)](#) that the FY 2016 application is a resubmission (Item 8) and include the application number of the previous application (an 11-character alphanumeric identifier beginning "R305" or "R324" entered in Item 4a). Prior reviews will be sent to this year's reviewers along with the resubmitted application. You must describe your response to the prior reviews using [Appendix A \(see Part IV.D.3.\)](#). Revised and resubmitted applications will be reviewed according to this FY 2016 Request for Applications.

If you submitted a somewhat similar application in the past and did not receive an award but are submitting the current application as a new application, you should indicate on the application form that the FY 2016 application is a new application. Provide a rationale explaining why the FY 2016 application should be considered a new application rather than a revision using [Appendix A \(see Part IV.D.3.\)](#). Without such an explanation, if the Institute determines that the current application is similar to a previously unfunded application, the Institute may send the reviews of the prior unfunded application to this year's reviewers along with the current application.

You may submit applications to more than one of the Institute's FY 2016 grant programs. In addition, within a particular grant program or topic, you may submit multiple applications. However, you may submit a given application only once for the FY 2016 grant competitions (i.e., you may not submit the same application or similar applications to multiple grant programs, multiple topics, or multiple times within the same topic). If you submit the same or similar applications, the Institute will determine whether and which applications will be accepted for review and/or will be eligible for funding.

## **3. Application Processing**

**Applications must be submitted electronically and received by 4:30:00 p.m., Washington, DC time on August 20, 2015** through the Internet using the software provided on the Grants.gov website: <http://www.grants.gov/>. You must follow the application procedures and submission requirements described in [Part IV Preparing Your Application](#) and [Part V Submitting Your Application](#) and the

instructions in the User Guides provided by Grants.gov  
<http://www.grants.gov/web/grants/applicants/applicant-resources.html>.

After receiving the applications, Institute staff will review each application for [compliance](#) and [responsiveness](#) to this Request for Applications. Applications that do not address specific requirements of this request will not be considered further.

Once you formally submit an application, Institute staff will not comment on its status until the award decisions are announced (no later than July 1, 2016) except with respect to issues of compliance and responsiveness. This communication will come through the Applicant Notification System (<https://iesreview.ed.gov/>).

**Once an application has been submitted and the application deadline has passed, you may not submit additional materials for inclusion with your application.**

#### **4. Peer Review Process**

The Institute will forward all applications that are compliant and responsive to this Request for Applications to be evaluated for scientific and technical merit. Scientific reviews are conducted in accordance with the review criteria stated below and the review procedures posted on the Institute's website, [http://ies.ed.gov/director/sro/peer\\_review/application\\_review.asp](http://ies.ed.gov/director/sro/peer_review/application_review.asp), by a panel of scientists who have substantive and methodological expertise appropriate to the program of research and Request for Applications.

Each compliant and responsive application is 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, the Institute calculates an average overall score for each application and prepares a preliminary rank order of applications 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 application that he or she believes merits full panel review but that would not have been included in the full panel meeting based on its preliminary rank order.

#### **5. Review Criteria for Scientific Merit**

The purpose of Institute-supported research is to contribute to solving 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. The Institute expects reviewers for all applications 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 described in [Part II R&D Center Requirements](#).

##### **a) Significance of the Focused Program of Research**

Does the applicant provide a compelling rationale for the significance of the Center as defined in the sections on the significance of the focused program of research?

##### **b) Research Plan for the Focused Program of Research**

Does the applicant meet the requirements and address the recommendations described in the sections detailing the methodological requirements for the focused program of research?

**c) Plans for Other Center Activities**

Does the description of the applicant's capacity to conduct supplemental and leadership activities demonstrate that the applicant has the ideas, experience, and capability to successfully carry-out such activities in cooperation with the Institute? Does the applicant propose meaningful leadership and outreach activities for the Center?

**d) Management and Institutional Resources**

Do the plans and procedures for the overall management of the Center indicate that the applicant has the capacity to efficiently and successfully complete the proposed research, dissemination, and leadership activities? 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 Center activities?

**e) Personnel**

Does the description of the personnel make it apparent that the Principal Investigator/Center Director and other key personnel possess the appropriate training and experience and will commit sufficient time to competently implement the proposed research?

**6. Award Decisions**

The following will be considered in making award decisions for responsive and compliant applications:

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

## PART IV: PREPARING YOUR APPLICATION

### A. OVERVIEW

The application contents – individual forms and their PDF attachments – represent the body of an application to the Institute. All applications for Institute funding must be self-contained. As an example, reviewers are under no obligation to view an internet website if you include the site address (URL) in the application. In addition, **you may not submit additional materials directly to the Institute after the application package is submitted.**

### B. GRANT APPLICATION PACKAGE

The Application Package for this competition (84-305C2016) provides all of the forms that you must complete and submit. The application form approved for use in the competition specified in this Request for Applications is the government-wide SF-424 Research and Related (R&R) Form (OMB Number 4040-0001).

#### 1. Date Application Package is Available on Grants.gov

The Application Package will be available on <http://www.grants.gov/> by May 21, 2015.

#### 2. How to Download the Correct Application Package

To find the correct downloadable Application Package, you must first search by the CFDA number for this research competition without the alpha suffix. To submit an application to the Education Research and Development Center program, you must search on: CFDA 84.305.

The Grants.gov search on CFDA 84.305 will yield more than one Application Package. For the Education Research and Development Center program, you must download the Application Package marked:

- Education Research and Development Center CFDA 84.305C

You must download the Application Package that is designated for this grant competition. If you use a different Application Package, even if it is for another Institute competition, the application will be submitted to the wrong competition. Applications submitted using the incorrect application package run the risk of not being reviewed according to the requirements and recommendations for the Education Research and Development Center competition.

See [Part V Submitting Your Application](#), for a complete description of the forms that make up the application package and directions for filling out these forms.

### C. GENERAL FORMATTING

For a complete application, you must submit the following as individual attachments to the R&R forms that are contained in the application package for this competition in Adobe Portable Document Format (PDF):

- Center Summary/Abstract;
- Center Narrative and, if applicable, Appendix A, Appendix B, Appendix C, and Appendix D (all together as one PDF file);
- Bibliography and References Cited;
- Research on Human Subjects Narrative (i.e., Exempt or Non-Exempt Research Narrative);
- A Biographical Sketch for each senior/key person;
- A List of Current and Pending Support for each senior/key person;

- A Narrative Budget Justification for the total Center budget; and
- Subaward Budget(s) that has (have) been extracted from the R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form, if applicable.

Information about the formatting requirements for all of these documents except the [Subaward budget attachment \(see Part V.E.6.\)](#) is provided below.

### **1. Page and Margin Specifications**

For all Institute research grant applications, a “page” is 8.5 in. x 11 in., on one side only, with 1 inch margins at the top, bottom, and both sides.

### **2. Page Numbering**

Add page numbers using the header or footer function, and place them at the bottom or upper right corner for ease of reading.

### **3. Spacing**

Text must be single spaced.

### **4. 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 six lines of type within a vertical inch.

You 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. These requirements apply to the PDF file as submitted. As a practical matter, if you use a 12-point Times New Roman font without compressing, kerning, condensing or other alterations, the application will typically meet these requirements.

### **5. Graphs, Diagrams, and Tables**

You are encouraged to use black and white in graphs, diagrams, tables, and charts. If color is used, you should ensure that the material reproduces well when photocopied in black and white.

Text in figures, charts, and tables, including legends, may be in a type size smaller than 12 point but must be readily legible.

## D. PDF ATTACHMENTS

### 1. Center Summary/Abstract

#### a) Submission

You must submit the center summary/abstract as a separate PDF attachment at Item 7 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

#### b) Page limitations

The center summary/abstract is limited to one single-spaced page.

#### c) Content

The center summary/abstract should include the following:

- Title of the proposed Center,
- The topic under which the applicant is applying (e.g., “Education Research and Development Center on Virtual Learning”),
- Brief description of the focused program of research, and
- A list of the key Center personnel.

Please see <http://ies.ed.gov/ncer/projects> for examples of the content to be included in your center summary/abstract.

### 2. Center Narrative

#### a) Submission

You must submit the center narrative as a separate PDF attachment at Item 8 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

#### b) Page limitations

The center narrative is limited to 35 pages. **If the narrative exceeds this page limit, the Institute will remove any pages after the 35<sup>th</sup> page of the narrative.**

To help reviewers locate information and conduct the highest quality review, you should write a concise and easy to read narrative, with pages numbered consecutively using the header or footer function to place numbers at 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 centers in the center narrative, use the author-date style of citation (e.g., James, 2004), such as that described in the Publication Manual of the American Psychological Association, 6th Ed. (American Psychological Association, 2009).

#### d) Content

Your center narrative **must** include five sections in order to be compliant with the requirements of this Request for Applications: (1) Significance of the Focused Program of Research, (2) Research Plan for the Focused Program of Research, (3) Other Center Activities, (4) Management and Institutional Resources, and (5) Personnel. Information to be included in each of these sections is detailed in [Part II R&D Center Requirements](#). **The information you include in each of these five sections will provide the majority of the information on which reviewers will evaluate the application.**

### **3. Appendix A (Required for Resubmissions)**

#### **a) Submission**

If your application is a resubmission you must include Appendix A at the end of the center narrative. If your application is one that you consider to be new but that is similar to a previous application, you should include Appendix A. Include Appendix A after the center narrative as part of the same PDF attachment at Item 8 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

#### **b) Page limitations**

Appendix A is limited to three pages.

#### **c) Content**

**Appendix A is required if you are resubmitting an application.** Use Appendix A to describe how the revised application is responsive to prior reviewer comments.

If you have submitted a somewhat similar application in the past but are submitting the current application as a new application, you should use Appendix A to provide a rationale explaining why the current application should be considered a “new” application rather than a “resubmitted” application.

These are the only materials that may be included in Appendix A; all other materials will be removed prior to review of the application.

### **4. Appendix B (Optional)**

#### **a) Submission**

If you choose to have an Appendix B, you must include it at the end of the center narrative, following Appendix A (if applicable), and submit it as part of the same PDF attachment at Item 8 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

#### **b) Page limitations**

Appendix B is limited to 15 pages.

#### **c) Content**

You may include figures, charts (e.g., timelines for your research projects), or tables that supplement the project narrative as well as examples of measures (e.g., tests, surveys, observation and interview protocols) to be used in the project in Appendix B. These are the only materials that may be included in Appendix B; all other materials will be removed prior to review of the application. You should include narrative text that describes your project in the 35-page center narrative, not in Appendix B.

### **5. Appendix C (Optional)**

#### **a) Submission**

If you choose to have an Appendix C, you must include it at the end of the center narrative, following Appendix B (if no Appendix B is included, then Appendix C should follow Appendix A if it is included) and submit it as part of the same PDF attachment at Item 8 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

#### **b) Page limitations**

Appendix C is limited to 10 pages.

### **c) Content**

In Appendix C, if you are proposing to study, develop, evaluate, or validate an intervention or assessment you may include examples of curriculum material, computer screen shots, assessment items, or other materials used in the intervention or assessment to be studied, developed, evaluated, or validated. These are the only materials that may be included in Appendix C; all other materials will be removed prior to review of the application. You should include narrative text describing these materials in the 35-page center narrative, not in Appendix C.

## **6. Appendix D (Required)**

### **a) Submission**

Appendix D must be included at the end of the center narrative, following Appendix C (if no Appendix C is included, then Appendix D should follow Appendix B if it is included, or Appendix A if it is included) and submit it as part of the same PDF attachment at Item 8 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

### **b) Page limitations**

Appendix D does not have a page limit.

### **c) Content**

Include in Appendix D the letters of agreement from partners (e.g., schools and districts), data sources (e.g., state agencies holding administrative data), and consultants. Ensure that the letters reproduce well so that reviewers can easily read them. Do not reduce the size of the letters. Although, see [Part V.D.4 Attaching Files](#) for guidance regarding the size of file attachments.

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 R&D Center that will be required if the application is funded. A common reason for projects to fail is loss of participating schools and districts. Letters of agreement regarding the provision of data should make it clear that the author of the letter will provide the data described in the application for use in the proposed research and in time to meet the proposed schedule.

## **7. Bibliography and References Cited**

### **a) Submission**

You must submit this section as a separate PDF attachment at Item 9 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

### **b) Page limitations**

The Bibliography and References Cited does not have a page limit.

### **c) Content**

You 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 project narrative.

## **8. Research on Human Subjects Narrative**

### **a) Submission**

The human subjects narrative must be submitted as a PDF attachment at Item 12 of the Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)).

**b) Page limitations**

The human subjects narrative does not have a page limit.

**c) Content**

The human subjects narrative should address the information specified by the U.S. Department of Education's Regulations for the Protection of Human Subjects (see <http://www2.ed.gov/about/offices/list/ocfo/humansub.html> for additional information).

*Exempt Research on Human Subjects Narrative*

Provide an "exempt" narrative if you checked "yes" on Item 1 of the Research & Related Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)). The narrative must contain sufficient information about the involvement of human subjects in the proposed research to allow a determination by the Department that the designated exemption(s) are appropriate. The six categories of research that qualify for exemption from coverage by the regulations are described on the Department's website <http://www2.ed.gov/policy/fund/guid/humansub/overview.html>.

*Non-exempt Research on Human Subjects Narrative*

If some or all of the planned research activities are covered (not exempt) from the Human Subjects Regulations and you checked "no" on Item 1 of the Research & Related Other Project Information form (see [Part V.E.4 Research & Related Other Project Information](#)), provide a "nonexempt research" narrative. The nonexempt narrative should describe the following: the characteristics of the subject population; the data to be collected from human subjects; recruitment and consent procedures; any potential risks; planned procedures for protecting against or minimizing potential risks; the importance of the knowledge to be gained relative to potential risks; and any other sites where human subjects are involved.

Note that the U.S. Department of Education does not require certification of Institutional Review Board approval at the time you submit your application. However, if an application that involves non-exempt human subjects research is recommended/selected for funding, the designated U.S. Department of Education official will request that you obtain and send the certification to the Department within 30 days after the formal request.

**9. Biographical Sketches of Senior/Key Personnel****a) Submission**

Each sketch will be submitted as a separate PDF attachment and attached to the Research & Related Senior/Key Person Profile (Expanded) form (see [Part V.E.2 Research & Related Senior/Key Person Profile \(Expanded\)](#)).

**b) Page limitations**

Each biographical sketch is limited to four pages.

**c) Content**

Provide a biographical sketch for the Principal Investigator, each co-Principal Investigator, and each co-Investigator that includes information sufficient to demonstrate that key personnel possess training and expertise commensurate with their specified duties on the proposed project (e.g., publications, grants, and relevant research experience). If you'd like, you may also include biographical sketches for consultants (this form will allow for up to 40 biographical sketches in total).

## 10. Current & Pending Support of Senior/Key Personnel

### a) Submission

Each list of current and pending support will be submitted as a separate PDF attachment to the Research & Related Senior/Key Person Profile (Expanded) form (see [Part V.E.2 Research & Related Senior/Key Person Profile \(Expanded\)](#)).

### b) Page limitations

Each list is limited to one page.

### c) Content

Provide a list of current and pending grants for the Principal Investigator, each co-Principal Investigator, and each co-Investigator, along with the proportion of his/her time, expressed as percent effort over a 12-month calendar year, allocated to each project. This information should be provided as a table.

Note: Each senior/key person must include the proposed R&D Center as one of his/her pending grants in this list. If the total 12-month calendar year percent effort across all current and pending projects exceeds 100 percent, you must explain how time will be allocated if all pending applications are successful in the Narrative Budget Justification.

## 11. Narrative Budget Justification

### a) Submission

The narrative budget justification must be submitted as a PDF attachment at Section K of the first project period of the Research & Related Budget (SF 424) Sections A & B; C, D, & E; and F-K form for the Project (see [Part V.E.5 Research & Related Budget \(Total Federal + Non-Federal\) - Sections A & B; C, D, & E; and F-K](#)). For grant submissions with a subaward(s), a separate narrative budget justification for each subaward must be submitted and attached at Section K of the Research & Related Budget (SF 424) for the specific Subaward/Consortium that has been extracted and attached using the R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form (see [Part V.E.6](#)).

### b) Page limitations

The narrative budget justification does not have a page limit.

### c) Content

A narrative budget justification must be submitted for the Center budget, and a separate narrative budget justification must be submitted for any subaward budgets included in the application. Each narrative budget justification should provide sufficient detail to allow reviewers to judge whether reasonable costs have been attributed to the project and its subawards, if applicable. The budget justification should correspond to the itemized breakdown of project costs that is provided in the corresponding Research & Related Budget (SF 424) Sections A & B; C, D, & E; and F-K form for each year of the project. The narrative should include the time commitments for key personnel expressed as annual percent effort (i.e., calculated over a 12-month period) 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 purchases, supplies, travel (including information regarding number of days of travel, mode of transportation, per diem rates, number of travelers, etc.), 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). Demonstrate that at least 75 percent of the Center's total budget is devoted to the focused program of research and that up to 5 percent annually is devoted to the supplemental activities of the Center.

**d) Indirect cost rate**

You must use your institution's federally negotiated indirect cost rate see [Part III.A.4: Special Considerations for Budget Expenses](#)). When calculating your indirect costs on expenses for research conducted in field settings, you should apply your institution's federally negotiated off-campus indirect cost rate.

If your institution does not have a federally negotiated indirect cost rate you should consult a member of the Indirect Cost Group (ICG) in the U.S. Department of Education's Office of the Chief Financial Officer <http://www2.ed.gov/about/offices/list/ocfo/fipao/icgreps.html> to help you estimate the indirect cost rate to put in your application.

## PART V: SUBMITTING YOUR APPLICATION

This part of the RFA describes important submission procedures you need to be aware of to ensure your application is received on time (no later than 4:30:00pm Washington, DC time on August 20, 2015) and accepted by the Institute. Any questions that you may have about electronic submission via Grants.gov should first be addressed to the Grants.gov Contact Center at [support@grants.gov](mailto:support@grants.gov), <http://www.grants.gov/web/grants/about/contact-us.html>, or call 1-800-518-4726.

Additional help with submitting an application electronically through the Grants.gov website is available at <http://www.grants.gov/web/grants/applicants/applicant-resources.html>. The Institute also offers webinars on the application submission process <http://ies.ed.gov/funding/webinars/index.asp>.

### A. MANDATORY ELECTRONIC SUBMISSION OF APPLICATIONS AND DEADLINE

Applications must be submitted electronically through the Internet using the software and application package provided on the Grants.gov web site: <http://www.grants.gov/>. Applications must be received (fully uploaded and processed by Grants.gov) no later than 4:30:00 pm Washington, DC time on August 20, 2015. Applications received by Grants.gov after the 4:30:00 pm application deadline will be considered late and will not be sent forward for scientific peer review.

Electronic submission is required unless you qualify for one of the exceptions to the electronic submission requirement *and* submit, no later than 2 weeks before the application deadline date, a written statement to the Department that you qualify for one of these exceptions. A description of the Allowable Exceptions to Electronic Submissions is provided at the end of this document.

Please consider submitting your application ahead of the deadline date (the Institute recommends 3 to 4 days in advance of the closing date and time) to avoid running the risk of a late submission that will not be reviewed. The Institute does not accept late applications.

### B. REGISTER ON GRANTS.GOV

To submit an application through Grants.gov, your institution must be registered with Grants.gov (<http://www.grants.gov/web/grants/register.html>).

Grants.gov registration involves many steps including registration in the System for Award Management (SAM, formerly known as the CCR - Central Contractor Registry, <http://www.sam.gov>). Grants.gov recommends that your institution begin the registration process at least 4 weeks prior to the application deadline date.

#### 1. Register Early

Registration involves multiple steps (described below) and takes at least 3 to 5 business days, or as long as 4 weeks, to complete. You must complete all registration steps to allow a successful application submission via Grants.gov. You may begin working on your application while completing the registration process, but you will not be permitted to submit your application until all of the Registration Steps are complete.

#### 2. How to Register

- Choose "Organization Applicant" for the type of registration.
- Complete the DUNS OR DUNS+4 Number field.

- If your organization does not already have a DUNS Number, you can request one online by using the form at the Dun & Bradstreet website <http://fedgov.dnb.com/webform> or by phone (866-705-5711).
- To submit your application successfully, the DUNS number in your application must be the one that was used when you registered as an Authorized Organization Representative (AOR) on Grants.gov. This DUNS number is typically the same number used when your organization registered with the SAM. **If you don't enter the same DUNS number as the DUNS you registered with, Grants.gov will reject your application.**
- Register with the System for Award Management (SAM) <http://www.sam.gov>.
  - You can learn more about the SAM and the registration process for grant applicants in the SAM user guide: [https://www.sam.gov/sam/transcript/Quick\\_Guide\\_for\\_Grants\\_Registrations\\_v1.7.pdf](https://www.sam.gov/sam/transcript/Quick_Guide_for_Grants_Registrations_v1.7.pdf)  
  
For further assistance, please consult the tip sheet that the U.S. Department of Education has prepared for help with the SAM system <http://www2.ed.gov/fund/grant/apply/sam-faqs.html>.
  - Registration with the SAM may take a week to complete, but could take as many as several weeks to complete, depending on the completeness and accuracy of the data entered into the SAM database by an applicant. **The SAM registration must be updated annually.**
  - Once your SAM registration is active, it will take 24 to 48 hours for the information to be available in Grants.gov. You will only be able to submit your application via Grants.gov once the SAM information is available in Grants.gov.
- Create your Username & Password
  - Complete your AOR profile on Grants.gov and create your username and password. You will need to use your organization's DUNS Number to complete this step. <https://apply07.grants.gov/apply/OrcRegister>.
- AOR Authorization
  - The E-Business Point of Contact (E-Biz POC) at your organization must login to Grants.gov to confirm you as an AOR. Please note that there can be more than one AOR for your organization. In some cases the E-Biz POC is also the AOR for an organization.

## C. SUBMISSION AND SUBMISSION VERIFICATION

### 1. Submit Early

The Institute strongly recommends that you not wait until the deadline date to submit an application. Grants.gov will put a date/time stamp on the application and then process it after it is fully uploaded. **The time it takes to upload an application will vary depending on a number of factors including the size of the application and the speed of your internet connection.** If Grants.gov rejects your application due to errors in the application package, you will need to resubmit successfully before 4:30:00 p.m. Washington, DC time on the deadline date as determined by Grants.gov. As an example, if you begin the submission process at 4:00:00 p.m. Washington, DC time on the deadline date, and Grants.gov rejects the application at 4:15:00 p.m. Washington, DC time, there may not be enough

time for you to locate the error that caused the submission to be rejected, correct it, and then attempt to submit the application again before the 4:30:00 p.m. Washington, DC time deadline. **You are strongly encouraged to begin the submission process at least 3 to 4 days before the deadline date to ensure a successful, on-time submission.**

## 2. Verify Submission is OK

The Institute urges you to verify that Grants.gov and the Institute have received the application on time and that it was validated successfully. To see the date and time that your application was received by Grants.gov, you need to log on to Grants.gov and click on the "Track My Application" link <http://www.grants.gov/web/grants/applicants/track-my-application.html>. For a successful submission, the date/time received should be no later than 4:30:00 p.m. Washington DC time on the deadline date, AND the application status should be: (1) Validated (i.e., no errors in submission), (2) Received by Agency (i.e., Grants.gov has transmitted the submission to the U.S. Department of Education), or (3) Agency Tracking Number Assigned (the U.S. Department of Education has assigned a unique PR/Award Number to the application).

Note: If the date/time received is later than 4:30:00 p.m. Washington, DC time on the deadline date, the application is late. If the application has a status of "Received" it is still awaiting validation by Grants.gov. Once validation is complete, the status will change either to "Validated" or "Rejected with Errors." If the status is "Rejected with Errors," the application has not been received successfully. Grants.gov provides information on reasons why applications may be rejected in its Frequently Asked Questions (FAQ) page.

- Grants.gov FAQ  
<http://www.grants.gov/web/grants/support/general-support/faqs.html>
- Grants.gov Adobe Reader FAQs  
<http://www.grants.gov/web/grants/support/general-support/faqs/adobe-reader-faqs.html>

You will receive four emails regarding the status of your submission; the first three will come from Grants.gov and the fourth will come from the U.S. Department of Education. Within 2 days of submitting a grant application to Grants.gov, you will receive three emails from Grants.gov:

- The first email message will confirm receipt of the application by the Grants.gov system and will provide you with an application tracking number beginning with the word "GRANT", for example GRANT00234567. You can use this number to track your application on Grants.gov using the "Track My Application" link <http://www.grants.gov/web/grants/applicants/track-my-application.html> before it is transmitted to the U.S. Department of Education.
- The second email message will indicate that the application EITHER has been successfully validated by the Grants.gov system prior to transmission to the U.S. Department of Education OR has been rejected due to errors, in which case it will not be transmitted to the Department.
- The third email message will indicate that the U.S. Department of Education has confirmed retrieval of the application from Grants.gov once it has been validated.

If the second email message indicates that the application, as identified by its unique application tracking number, is valid and the time of receipt was no later than 4:30:00 p.m. Washington DC time, then the application is successful and on-time.

Note: You should not rely solely on e-mail to confirm whether an application has been received on-time and validated successfully. The Institute urges you to use the "Track My Application" link on Grants.gov to verify on-time, valid submissions in addition to the confirmation emails.

<http://www.grants.gov/web/grants/applicants/track-my-application.html>

Once Grants.gov validates the application and transmits it to the U.S. Department of Education, you will receive an email from the U.S. Department of Education.

- This fourth email message will indicate that the application has been assigned a PR/Award number unique to the application beginning with the letter R, followed by the section of the CFDA number unique to that research competition (e.g., 305C), the fiscal year for the submission (e.g., 16 for fiscal year 2016), and finally four digits unique to the application, for example R305C16XXXX. If the application was received after the closing date/time, this email will also indicate that the application is late and will not be given further consideration.

Note: The Institute strongly recommends that you begin the submission process at least 3 to 4 days in advance of the deadline date to allow for a successful and timely submission.

### 3. Late Applications

If your application is submitted after 4:30:00 p.m. Washington, DC time on the application deadline date your application will not be accepted and will not be reviewed. **The Institute does not accept late applications.**

However, if you believe that a technical problem with the Grants.gov system prevented you from being able to submit your application on time, you must contact the Grants.gov Support Desk at [support@grants.gov](mailto:support@grants.gov), <http://www.grants.gov/web/grants/about/contact-us.html>, or call 1-800-518-4726. The Grants.gov Support Desk will assign a Case Number (e.g., 1-12345678) that you must keep as a record of the problems. If you wish to petition that the Institute accept your late application due to technical problems with the Grants.gov system you should contact the Program Officer for the topic designated in your application and provide an explanation of the problem experienced with Grants.gov, along with the Grants.gov Support Desk Case Number. **Your application will be accepted only if it is possible to confirm that a technical problem occurred with the Grants.gov system and that the problem (as documented with the Grants.gov Support Desk) affected your ability to submit the application by 4:30:00 p.m. Washington, DC time on the application deadline date.** The Institute will contact you approximately 1 month after the submission deadline as to whether the application will be accepted.

## D. TIPS FOR WORKING WITH GRANTS.GOV

The Institute strongly encourages you to use the “Check Application for Errors” button at the top of the grant application package to identify errors or missing required information that can prevent an application from being processed and sent forward for review.

Note: You must click the “Save and Submit” button at the top of the application package to upload the application to the Grants.gov website. The “Save and Submit” button will become active only after you have used the “Check Package for Errors” button and then clicked the “Save” button. Once the “Save and Submit” button is clicked, you will need to enter the user name and password that were created upon registration with Grants.gov.

### 1. Working Offline

When you download the application package from Grants.gov, you will be working offline and saving data on your computer. You will need to logon to Grants.gov to upload the completed application package and submit the application.

### 2. Connecting to the Internet

- Using a dial-up connection to upload and submit an application can take significantly longer than using a high-speed connection to the internet (e.g., cable modem/DSL/T1). Although times will

vary depending upon the size of the application, it can take a few minutes to a few hours to complete the grant submission using a dial-up connection.

- **Browser Support:** Grants.gov is a Custom Java Application that uses standard web-browsers as the client. Grants.gov leverages the latest web technologies such as Ajax which relies extensively on JavaScript, HTML, and CSS. Grants.gov recommends you use the most up-to-date web browser to ensure an on-time submission.

### 3. Software Requirements

You will need Adobe software (at least Adobe Reader 10.1.14) to read and complete the application forms for submission through Grants.gov. You can verify if your Adobe software version is compatible with Grants.gov, and if it is not a compatible version, you can download the necessary version of Adobe from Grants.gov (<http://www.grants.gov/web/grants/support/technical-support/recommended-software.html>).

### 4. Attaching Files

The forms included in the application package provide the means for you to attach Adobe Portable Document Format (PDF) files. **You must attach read-only, non-modifiable PDF files**; any other file attachment will cause your application to be rejected by Grants.gov.

Grants.gov provides help for converting files to a PDF format:

<http://www.grants.gov/web/grants/support/general-support/faqs/adobe-reader-faqs.html>.

If you include scanned documents as part of a PDF file (e.g., Letters of Agreement in Appendix D), scan them at the lowest resolution to minimize the size of the file and expedite the upload process. PDF files that contain graphics and/or scanned material can greatly increase the size of the file attachments and can result in difficulties opening the files. The average discretionary grant application package totals 1 to 2 MB; therefore, **check the total size of your application package before you attempt to submit it**. Very large application packages can take a long time to upload, putting the application at risk of being received late and therefore not accepted by the Institute.

PDF files included in the application **must** be:

- **In a read-only, non-modifiable format.**
- **Individual files** (attachments that contain files within a file, such as PDF Portfolio files, or an interactive or fillable PDF file will not be read).
- **Not password protected.**
- **Given a file name that:**
  - **Is unique** - Grants.gov cannot process an application that includes two or more file attachments that have the same name.
  - **Is no more than 50 characters.**
  - **Contains no special characters (e.g., &, -, \*, percent, /, #), blank spaces, periods, or accent marks in the file name** (you may use an underscore to indicate word separation in file names such as "my\_Attached\_File.pdf").

Please note that if these guidelines are not followed, your application will be rejected by Grants.gov and not forwarded to the U.S. Department of Education.

## E. REQUIRED RESEARCH & RELATED (R&R) FORMS AND OTHER FORMS

You must complete and submit the R&R forms described below. All of these forms are provided in the application package for this competition (84-305C2016). Please note that fields marked by an asterisk, highlighted in yellow and outlined in red on these forms are required fields and must be completed to ensure a successful submission.

Note: Although not required fields, Items 4a (Federal Identifier) and b (Agency Routing Number) on the Application for Federal Assistance SF 424 (R&R) form provide critical information to the Institute and should be filled out for an application to this research grant competition.

### 1. Application for Federal Assistance SF 424 (R&R)

This form asks for general information about the applicant, including but not limited to the following: contact information; an Employer Identification Number (EIN); a DUNS number; a descriptive title for the project; an indication of the project topic and the appropriate goal; Principal Investigator contact information; start and end dates for the project; congressional district; total estimated project funding; and Authorized Representative contact information.

Because information on this form populates selected fields on some of the other forms described below, you should complete this form first. This form also allows you to attach a cover letter; however, the Institute does not require a cover letter so do not attach one here.

Provide the requested information using the drop down menus when available. Guidance for completing selected items follows.

- Item 1

Type of Submission. Select either "Application" or "Changed/Corrected Application." "Changed/Corrected Application" should only be selected in the event that you need to submit an updated version of an already submitted application (e.g., due to an error). The Institute does not require Pre-applications for its grant competitions.

- Item 2

Date Submitted. Enter the date the application is submitted to the Institute.

Applicant Identifier. Leave this blank.

- Item 3

Date Received by State and State Application Identifier. Leave these items blank.

- Item 4

Note: This item provides important information that is used by the Institute to screen applications for responsiveness to the competition requirements and for assignment to the appropriate scientific peer review panel. **It is critical that you complete this information completely and accurately or the application may be rejected as nonresponsive or assigned inaccurately for scientific review of merit.**

- Item 4a: Federal Identifier. **Enter information in this field if this is a Resubmission.** If this application is a revision of an application that was submitted to an Institute grant competition in a prior fiscal year (e.g., FY 2015) that received reviewer feedback, then this application is considered a "Resubmission" (see Item 8 Type of Application). You should

**enter the PR/Award number that was assigned to the prior submission (e.g., R305C15XXXX) in this field.**

- Item 4b: Agency Routing Number. **Enter the code for the topic the application addresses in this field.** Applications to the Education Research and Development Center Program (CFDA 84.305C) program must be submitted to the Virtual Learning topic, as this is the only topic being offered in the FY16 Education Research and Development Center competition.

Topic	Code
Virtual Learning	NCER-VL

**It is critical that you use the appropriate code in this field and that the code shown in this field agrees with the information included in the application abstract.** Indicating the correct code facilitates the appropriate processing and review of the application. Failure to do so may result in delays to processing and puts your application at risk for being identified as nonresponsive and not considered for further review.

- Item 4c: Previous Grants.gov Tracking ID. If you are submitting a “Changed/Corrected” application (see Item 1) to correct an error, enter the Grants.gov Tracking Number associated with the application that was already submitted through Grants.gov. Note: If you need to correct an error and submit a “Changed/Corrected” application, contact the Program Officer listed on the application package and provide the Grants.gov tracking numbers associated with both applications (the one with the error and the one that has been corrected) and identify which one should be reviewed by the Institute.
- Item 5

Applicant Information. Enter all of the information requested, including the legal name of the applicant, the name of the primary organizational unit (e.g., school, department, division, etc.) that will undertake the activity, and the address, including the county and the 9-digit ZIP/Postal Code of the primary performance site (i.e., the Applicant institution) location. This field is required if the Project Performance Site is located in the United States. The field for “Country” is pre-populated with “USA: UNITED STATES.” For applicants located in another country, contact the cognizant program officer (see [Part II.B R&D Center Topic Requirements](#) or the [list](#) of program officers in Part V.H) before submitting the application. Use the drop down menus where they are provided.

Organizational DUNS. Enter the DUNS or DUNS+4 number of the applicant organization. A **Data Universal Numbering System (DUNS)** number is a unique 9-character identification number provided by the commercial company Dun & Bradstreet (D&B) to identify organizations. If your institution does not have a DUNS number and therefore needs to register for one, a DUNS number can be obtained through the Dun & Bradstreet website <http://fedgov.dnb.com/webform/displayHomePage.do>.

Note: The DUNS number provided on this form must be the same DUNS number used to register on Grants.gov (and the same as the DUNS number used when registering with the SAM). **If the DUNS number used in the application is not the same as the DUNS number used to register with Grants.gov, the application will be rejected with errors by Grants.gov.**

Person to Be Contacted on Matters Involving this Application. Enter all of the information requested, including the name, telephone and fax numbers, and email address of the person to be contacted on matters involving this application. The role of this person is primarily for

communication purposes on the budgetary aspects of the project. As an example, this may be the contact person from the applicant institution's office of sponsored projects. Use the drop down menus where they are provided.

- Item 6

Employer Identification (EIN) or (TIN). Enter either the Employer Identification Number (EIN) or Tax Identification Number (TIN) as assigned by the Internal Revenue Service. If the applicant organization is not located in the United States, enter 44-4444444.

- Item 7

Type of Applicant. Use the drop down menu to select the type of applicant. If Other, please specify.

Small Business Organization Type. If "Small Business" is selected as Type of Applicant, indicate whether or not the applicant is a "Women Owned" small business – a small business that is at least 51% owned by a woman or women, who also control and operate it. Also indicate whether or not the applicant is a "Socially and Economically Disadvantaged" small business, as determined by the U.S. Small Business Administration pursuant to section 8(a) of the Small Business Act U.S.C. 637(a).

- Item 8

Type of Application. Indicate whether the application is a "New" application or a "Resubmission" of an application that was submitted under a previous Institute competition and received reviewer comments. Only the "New" and "Resubmission" options apply to Institute competitions. Do not select any option other than "New" or "Resubmission."

Submission to Other Agencies. Indicate whether or not this application is being submitted to another agency or agencies. If yes, indicate the name of the agency or agencies.

- Item 9

Name of Federal Agency. Do not complete this item. The name of the federal agency to which the application is being submitted will already be entered on the form.

- Item 10

Catalog of Federal Domestic Assistance Number. Do not complete this item. The CFDA number of the program competition to which the application is being submitted will already be entered on the form. The CFDA number can be found in the Federal Register Notice and on the face page of the Request for Applications.

- Item 11

Descriptive Title of Applicant's Project. **Enter a distinctive, descriptive title for the Center.** The maximum number of characters allowed in this item field is 200.

- Item 12

Proposed Project Start Date and Ending Date. Enter the proposed start date of the Center and the proposed end date of the Center. The start date must not be earlier than July 1, 2016, which

is the Earliest Anticipated Start Date listed in this Request for Applications, and must not be later than September 1, 2016. The end date is restricted based on the duration maximums for the topic selected (see Part II).

- Item 13

Congressional District of Applicant. For both the applicant and the project, enter the Congressional District in this format: 2-character State Abbreviation and 3-character District Number (e.g., CA-005 for California's 5th district, CA-012 for California's 12th district). Grants.gov provides help for finding this information <http://www.grants.gov/web/grants/applicants/applicant-fags/applying-for-grants.html> under "How can I find my congressional district code?" If the program/project is outside the U.S., enter 00-000.

- Item 14

Project Director/Principal Investigator Contact Information. Enter all of the information requested for the Project Director/Principal Investigator, including position/title, name, address (including county), organizational affiliation (e.g., organization, department, division, etc.), telephone and fax numbers, and email address. Use the drop down menus where they are provided.

- Item 15

Estimated Project Funding

- Total Federal Funds Requested. Enter the total Federal funds requested for the entire project period.
- Total Non-federal Funds. Enter the total Non-federal funds requested for the entire project period.
- Total Federal & Non-Federal Funds. Enter the total estimated funds for the entire project period, including both Federal and non-Federal funds.
- Estimated Program Income. Identify any program income estimated for the project period, if applicable.

- Item 16

Is Application Subject to Review by State Executive Order 12372 Process? The Institute is not soliciting applications that are subject to review by Executive Order 12372; therefore, check the box "Program is not covered by E.O. 12372" to indicate "No" for this item.

- Item 17

This is the Authorized Organization Representative's electronic signature.

By providing the electronic signature, the Authorized Organization Representative certifies the following:

- To the statements contained in the list of certifications
- That the statements are true, complete and accurate to the best of his/her knowledge.

By providing the electronic signature, the Authorized Organization Representative also provides the required assurances, agrees to comply with any resulting terms if an award is accepted, and acknowledges that any false, fictitious, or fraudulent statements or claims may subject him/her to criminal, civil, or administrative penalties.

Note: The certifications and assurances referred to here are described in [Part V.E.7 Other Forms Included in the Application Package](#)).

- Item 18

SF LLL or other Explanatory Documentation. Do not add the SF LLL here. A copy of the SF LLL is provided as an optional document within the application package. See [Part V.E.7 Other Forms Included in the Application Package](#) to determine applicability. If it is applicable to the grant submission, choose the SF LLL from the optional document menu, complete it, and save the completed SF LLL form as part of the application package.

- Item 19

Authorized Representative. The Authorized Representative is the official who has the authority both to legally commit the applicant to (1) accept federal funding and (2) execute the proposed project. Enter all information requested for the Authorized Representative, including name, title, organizational affiliation (e.g., organization, department, division, etc.), address, telephone and fax numbers, and email address of the Authorized Representative. Use the drop down menus where they are provided.

Signature of Authorized Representative. Leave this item blank as it is automatically completed when the application is submitted through Grants.gov.

Date Signed. Leave this item blank as the date is automatically generated when the application is submitted through Grants.gov.

- Item 20

Pre-application. Do not complete this item as the Institute does not require pre-applications for its grant competitions.

- Item 21

Cover letter. Do not complete this item as the Institute does not require cover letters for its grant competitions.

## **2. Research & Related Senior/Key Person Profile (Expanded)**

This form asks you to: (a) identify the Project Director/Principal Investigator and other senior and/or key persons involved in the project; (b) specify the role key staff will serve; and (c) provide contact information for each senior/key person identified. The form also requests information about the highest academic or professional degree or other credentials earned and the degree year.

This form also provides the means for attaching the Biographical Sketches of senior/key personnel and the Lists of Current and Pending Funding for senior/key personnel as PDF files. This form will allow for the attachment of a total of 40 biographical sketches and 40 lists of current and pending support: one of each for the project director/principal investigator and up to 39 additional sketches and lists for senior/key staff. See [Part IV.D.9 Biographical Sketches of Senior/Key Personnel](#) for information about

page limitations, format requirements, and content to be included in the biographical sketches and lists of current and pending funding. The persons listed on this form should be the same persons listed in the Personnel section of the Center Narrative.

### **3. Project/Performance Site Location(s)**

This form asks you to identify the primary site where project work will be performed. You must complete the information for the primary site. If a portion of the project will be performed at any other site(s), the form also asks you to identify and provide information about the additional site(s). As an example, a research proposal to an Institute competition may include the applicant institution as the primary site and one or more schools where data collection will take place as additional sites. The form permits the identification of eight project/performance site locations in total. This form requires the applicant to identify the Congressional District for each site. See above, [Application for Federal Assistance SF 424 \(R&R\)](#), Item 13 for information about Congressional Districts. DUNS number information is optional on this form.

### **4. Research & Related Other Project Information**

This form asks you to provide information about any research that will be conducted involving Human Subjects, including: (a) whether human subjects are involved; (b) if human subjects are involved, whether or not the project is exempt from the human subjects regulations; (c) if the project is exempt from the regulations, an indication of the exemption number(s); and, (d) if the project is not exempt from the regulations, whether an Institutional Review Board (IRB) review is pending; and if IRB approval has been given, the date on which the project was approved; and, the Human Subject Assurance number. This form also asks you: (a) whether there is proprietary information included in the application; (b) whether the project has an actual or potential impact on the environment; (c) whether the research site is designated or eligible to be designated as an historic place; and, (d) if the project involves activities outside the U.S., to identify the countries involved.

This form also provides the means for attaching a number of PDF files (see [Part IV.D PDF Attachments](#) for information about page limitations, format requirements, and content) including the following:

- Center Summary/Abstract,
  - Center Narrative and Appendices,
  - Bibliography and References Cited, and
  - Research on Human Subjects Narrative.
- 
- Item 1

Are Human Subjects Involved? If activities involving human subjects are planned at any time during the proposed project at any performance site or collaborating institution, you must check "Yes." (You must check "Yes" even if the proposed project is exempt from Regulations for the Protection of Human Subjects.) If there are no activities involving human subjects planned at any time during the proposed project at any performance site or collaborating institution, you may check "No" and skip to Item 2.

Is the Project Exempt from Federal Regulations? If all human subject activities are exempt from Human Subjects regulations, then you may check "Yes." You are required to answer this question if you answered "yes" to the first question "Are Human Subjects Involved?"

If you answer "yes" to the question "Is the Project Exempt from Federal Regulations?" you are required to check the appropriate exemption number box or boxes corresponding to one or more of the exemption categories. The six categories of research that qualify for exemption from

coverage by the regulations are described on the U.S. Department of Education's website <http://www2.ed.gov/policy/fund/guid/humansub/overview.html>. Provide an Exempt Research on Human Subjects Narrative at Item 12 of this form (see [Part IV.D.8 Research on Human Subjects Narrative](#)).

If you answer "no" to the question "Is the Project Exempt from Federal Regulations?" you will be prompted to answer questions about the Institutional Review Board (IRB) review.

If no, is the IRB review pending? Answer either "Yes" or "No."

If you answer "yes" because the review is pending, then leave the IRB approval date blank. If you answer "no" because the review is not pending, then you are required to enter the latest IRB approval date, if available. Therefore, you should select "No" only if a date is available for IRB approval.

Note: IRB Approval may not be pending because you have not begun the IRB process. In this case, an IRB Approval Date will not be available. However, a date must be entered in this field if "No" is selected or the application will be rejected with errors by Grants.gov. Therefore, you should check "Yes" to the question "Is the IRB review pending?" if an IRB Approval date is not available.

If you answer "no" to the question "Is the Project Exempt from Federal Regulations?" provide a Non-exempt Research on Human Subjects Narrative at Item 12 of this form (see [Part IV.D.8 Research on Human Subjects Narrative](#)).

Human Subject Assurance Number: Leave this item blank.

- Item 2

Are Vertebrate Animals used? Check whether or not vertebrate animals will be used in this project.

- Item 3

Is proprietary/privileged information included in the application? Patentable ideas, trade secrets, privileged or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in applications only when such information is necessary to convey an understanding of the proposed project. If the application includes such information, check "Yes" and clearly mark each line or paragraph on the pages containing the proprietary/privileged information with a legend similar to, "The following contains proprietary/privileged information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation."

- Item 4

Does this project have an actual or potential impact on the environment? Check whether or not this project will have an actual or potential impact on the environment.

- Item 5

Is the research site designated or eligible to be designated as a historic place? Check whether or not the research site is designated or eligible to be designated as a historic place. Explain if necessary.

- Item 6

Does the project involve activities outside of the United States or partnerships with international collaborators? Check “Yes” or “No.” If the answer is “Yes,” then you need to identify the countries with which international cooperative activities are involved. An explanation of these international activities or partnerships is optional.

- Item 7.

Center Summary/Abstract. Attach the Center Summary/Abstract as a PDF file here. See [Part IV.D PDF Attachments](#) for information about content, formatting, and page limitations for this PDF file.

- Item 8.

Center Narrative. Create a single PDF file that contains the Center Narrative as well as Appendix A (required for resubmissions), Appendix B (optional), Appendix C (optional), and Appendix D (required for all Center applications). Attach that single PDF file here. See [Part IV.D PDF Attachments](#) for information about content, formatting, and page limitations for this PDF file.

- Item 9.

Bibliography and References Cited. Attach the Bibliography and References Cited as a PDF file here. See [Part IV.D PDF Attachments](#) for information about content, formatting, and page limitations for this PDF file.

- Item 10.

Facilities and Other Resources. The Institute does not want an attachment here. Explanatory information about facilities and other resources must be included in the Management and Institutional Resources Section of the 35-page Center Narrative for the application and may also be included in the [Narrative Budget Justification](#). In the center narrative of competitive proposals, applicants describe having access to institutional resources that adequately support research activities and access to schools in which to conduct the research. Strong applications 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 agreement from the education organization. Include letters of agreement in [Appendix D](#).

- Item 11.

Equipment. The Institute does not want an attachment here. Explanatory information about equipment may be included in the Narrative Budget Justification.

- Item 12.

Other Attachments. Attach a Research on Human Subjects Narrative as a PDF file here. You must attach either an Exempt Research on Human Subjects Narrative or a Non-Exempt Research on Human Subjects Narrative. See [Part IV.D PDF Attachments](#) for information about content, formatting, and page limitations for this PDF file.

If you checked “Yes” to Item 1 of this form “Are Human Subjects Involved?” and designated an exemption number(s), then you must provide an “Exempt Research” narrative. If some or all of

the planned research activities are covered by (not exempt from) the Human Subjects Regulations, then you must provide a "Nonexempt Research" narrative.

## 5. Research & Related Budget (Total Federal+Non-Federal)-Sections A & B; C, D, & E; F-K

This form asks you to provide detailed budget information for each year of support requested for the applicant institution (i.e., the Center Budget). The form also asks you to indicate any non-federal funds supporting the project. You should provide this budget information for each project year using all sections of the R&R Budget form. Note that the budget form has multiple sections for each budget year: A & B; C, D, & E; and F-K.

- Sections A & B ask for information about Senior/Key Persons and Other Personnel
- Sections C, D & E ask for information about Equipment, Travel, and Participant/Trainee Costs
- Sections F - K ask for information about Other Direct Costs and Indirect Costs

You must complete each of these sections for as many budget periods (i.e., project years) as you are requesting funds.

**Note:** The narrative budget justification for each of the project budget years must be attached at Section K of the first budget period; otherwise you will not be able to enter budget information for subsequent project years.

**Note: Budget information for a subaward(s) on the project must be entered using a separate form, the R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form,** described in [Part V.E.6](#). This is the only form that can be used to extract the proper file format to complete subaward budget information. **The application will be rejected with errors by Grants.gov if subaward budget information is included using any other form or file format.**

Enter the Federal Funds requested for all budget line items as instructed below. If any Non-Federal funds will be contributed to the project, enter the amount of those funds for the relevant budget categories in the spaces provided.

All fields asking for total funds in this form will auto calculate.

- Organizational DUNS.

If you completed the SF 424 R&R Application for Federal Assistance form first the DUNS number will be pre-populated here. Otherwise, the organizational DUNS number must be entered here. See [Part V.E.1](#) for information on the DUNS number.

- Budget Type.

Check the box labeled "Project" to indicate that this is the budget requested for the primary applicant organization. If the project involves a subaward(s), you must access the R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form to complete a subaward budget (see [Part V.E.6](#) for instructions regarding budgets for a subaward).

- Budget Period Information.

Enter the start date and the end date for each budget period. Note: If you activate an extra budget period and leave it blank this may cause your application to be rejected with errors by Grants.gov.

- Budget Sections A & B

A. Senior/Key Person. The project director/principal investigator information will be pre-populated here from the SF 424 R&R Application for Federal Assistance form if it was completed first. Then, enter all of the information requested for each of the remaining senior/key personnel, including the project role of each and the number of months each will devote to the project, i.e., calendar or academic + summer. You may enter the annual compensation (base salary – dollars) paid by the employer for each senior/key person; however, you may choose to leave this field blank. Regardless of the number of months devoted to the project, indicate only the amount of salary being requested for each budget period for each senior/key person. Enter applicable fringe benefits, if any, for each senior/key person. Enter the Federal dollars and, if applicable, the Non-Federal dollars.

B. Other Personnel. Enter all of the information requested for each project role listed – for example Postdoctoral Associates, Graduate Students, Undergraduate Students, Secretary/Clerical, etc. – including, for each project role, the number of personnel proposed and the number of months devoted to the project (calendar or academic + summer). Regardless of the number of months devoted to the project, indicate only the amount of salary/wages being requested for each project role. Enter applicable fringe benefits, if any, for each project role category. Enter the Federal dollars and, if applicable, the Non-Federal dollars.

Total Salary, Wages, and Fringe Benefits (A + B). This total will auto calculate.

- Budget Sections C, D & E

C. Equipment Description. Enter all of the information requested for Equipment. Equipment is defined as an item of property that has an acquisition cost of \$5,000 or more (unless the applicant organization has established lower levels) and an expected service life of more than 1 year. List each item of equipment separately and justify each in the narrative budget justification. Allowable items ordinarily will be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose equipment, such as a personal computer, is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research. Enter the Federal dollars and, if applicable, the Non-Federal dollars.

Total C. Equipment. This total will auto calculate.

D. Travel. Enter all of the information requested for Travel.

Enter the total funds requested for domestic travel. In the narrative budget justification, include the purpose, destination, dates of travel (if known), applicable per diem rates, and number of individuals for each trip. If the dates of travel are not known, specify the estimated length of the trip (e.g., 3 days). Enter the Federal dollars and, if applicable, the Non-Federal dollars.

Enter the total funds requested for foreign travel. In the narrative budget justification, include the purpose, destination, dates of travel (if known), applicable per diem rates, and number of individuals for each trip. If the dates of travel are not known, specify the estimated length of the trip (e.g., 3 days). Enter the Federal dollars and, if applicable, the Non-Federal dollars.

Total D. Travel Costs. This total will auto calculate.

E. Participant/Trainee Support Costs. Do not enter information here; this category is not used for project budgets for this competition.

Number of Participants/Trainees. Do not enter information here; this category is not used for project budgets for this competition.

Total E. Participants/Trainee Support Costs. Do not enter information here; this category is not used for project budgets for this competition.

- Budget Sections F-K

F. Other Direct Costs. Enter all of the information requested under the various cost categories. Enter the Federal dollars and, if applicable, the Non-Federal dollars.

Materials and Supplies. Enter the total funds requested for materials and supplies. In the narrative budget justification, indicate the general categories of supplies, including an amount for each category. Categories less than \$1,000 are not required to be itemized.

Publication Costs. Enter the total publication funds requested. The proposed budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the award. In the narrative budget justification, include supporting information.

Consultant Services. Enter the total costs for all consultant services. In the narrative budget justification, identify each consultant, the services he/she will perform, total number of days, travel costs, and total estimated costs. Note: Travel costs for consultants can be included here or in Section D. Travel.

ADP/Computer Services. Enter the total funds requested for ADP/computer services. The cost of computer services, including computer-based retrieval of scientific, technical, and education information may be requested. In the narrative budget justification, include the established computer service rates at the proposing organization if applicable.

Subaward/Consortium/Contractual Costs. Enter the total funds requested for (1) all subaward/consortium organization(s) proposed for the project and (2) any other contractual costs proposed for the project. Use the R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form to provide detailed subaward information (see [Part V.E.6](#)).

Equipment or Facility Rental/User Fees. Enter the total funds requested for equipment or facility rental/user fees. In the narrative budget justification, identify each rental user fee and justify.

Alterations and Renovations. Leave this field blank. The Institute does not provide funds for construction costs.

Other. Describe any other direct costs in the space provided and enter the total funds requested for this "Other" category of direct costs. Use the narrative budget justification to further itemize and justify.

Total F. Other Direct Costs. This total will auto calculate.

- G. Direct Costs

Total Direct Costs (A thru F). This total will auto calculate.

- H. Indirect Costs

Enter all of the information requested for Indirect Costs. Principal investigators should note that if they are requesting reimbursement for indirect costs, this information is to be completed by their Business Office.

Indirect Cost Type. Indicate the type of base (e.g., Salary & Wages, Modified Total Direct Costs, Other [explain]). In addition, indicate if the Indirect Cost type is Off-site. If more than one rate/base is involved, use separate lines for each. When calculating your expenses for research conducted in field settings, you should apply your institution's negotiated off-campus indirect cost rate, as directed by the terms of your institution's negotiated agreement with the federal government.

Institutions, both primary grantees and sub-awardees, not located in the territorial US cannot charge indirect costs.

If you do not have a current indirect rate(s) approved by a Federal agency, indicate "None--will negotiate". **If your institution does not have a federally negotiated indirect cost rate**, you should consult a member of the Indirect Cost Group (ICG) in the U.S. Department of Education's Office of the Chief Financial Officer <http://www2.ed.gov/about/offices/list/ocfo/fipao/icgreps.html> to help you estimate the indirect cost rate to put in your application.

Indirect Cost Rate (%). Indicate the most recent Indirect Cost rate(s) (also known as Facilities & Administrative Costs [F&A]) established with the cognizant Federal office, or in the case of for-profit organizations, the rate(s) established with the appropriate agency.

If your institution has a cognizant/oversight agency and your application is selected for an award, you must submit the indirect cost rate proposal to that cognizant/oversight agency office for approval.

Indirect Cost Base (\$). Enter the amount of the base (dollars) for each indirect cost type. Depending on the grant program to which you are applying and/or the applicant institution's approved Indirect Cost Rate Agreement, some direct cost budget categories in the grant application budget may not be included in the base and multiplied by the indirect cost rate. Use the narrative budget justification to explain which costs are included and which costs are excluded from the base to which the indirect cost rate is applied. If your grant application is selected for an award, the Institute will request a copy of the applicant institution's approved Indirect Cost Rate Agreement.

Indirect Cost Funds Requested. Enter the funds requested (Federal dollars and, if applicable, the Non-Federal dollars) for each indirect cost type.

Total H. Indirect Costs. This total will auto calculate.

Cognizant Agency. Enter the name of the Federal agency responsible for approving the indirect cost rate(s) for the applicant. Enter the name and telephone number of the individual responsible for negotiating the indirect cost rate. If a Cognizant Agency is not known, enter "None."

- Total Direct and Indirect Costs

Total Direct and Indirect Costs (G + H). This total will auto calculate.

- J. Fee.

Do not enter a dollar amount here as you are not allowed to charge a fee on a grant or cooperative agreement.

- K. Budget Justification

Attach the Narrative Budget Justification as a PDF file at Section K of the first budget period (see [Part IV.D.11](#) for information about content, formatting, and page limitations for this PDF file). Note that if the justification is not attached at Section K of the first budget period, you will not be able to access the form for the second budget period and all subsequent budget periods. The single narrative must provide a budget justification for each year of the entire project.

- Cumulative Budget. This section will auto calculate all cost categories for all budget periods included.

**Final Note: The annual and total grant budget cannot exceed the maximum grant award for the topic being applied under, as listed in the table below. Applications with budgets and durations greater than the maximums listed will not be forwarded for review.**

Topic	Maximum Grant Duration	Maximum Grant Award
Virtual Learning	5 years	\$2,000,000/year (\$10,000,000 total)

## 6. R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form

This form provides the means to both extract and attach the Research & Related Budget (Total Fed + Non-Fed) form that is to be used by an institution that will hold a subaward on the grant. Please note that separate budgets are required only for subawardee/consortium organizations that perform a substantive portion of the project. As with the Primary Budget, the extracted Research & Related Budget (Total Fed + Non-Fed) form asks you to provide detailed budget information for each year of support requested for a subaward/consortium member with substantive involvement in the project. The budget form also asks for information regarding non-federal funds supporting the project at the subaward/consortium member level. You should provide this budget information for each project year using all sections of the R&R Budget form. Note that the budget form has multiple sections for each budget year: A & B; C, D, & E; and F-K.

- Sections A & B ask for information about Senior/Key Persons and Other Personnel.
- Sections C, D & E ask for information about Equipment, Travel, and Participant/Trainee Costs.
- Sections F - K ask for information about Other Direct Costs and Indirect Costs.

“Subaward/Consortium” must be selected as the Budget Type, and all sections of the budget form for each project year must be completed in accordance with the R&R (Federal/Non-Federal) Budget instructions provided above in [Part V.E.5](#). Note that subaward organizations are also required to provide their DUNS or DUNS+4 number.

You may extract and attach up to 10 subaward budget forms. When you use the button “Click here to extract the R&R Budget (Fed/Non-Fed) Attachment,” a Research & Related Budget (Total Fed + Non-Fed) form will open. Each institution that will hold a subaward to perform a substantive portion of the

project must complete one of these forms and save it as a PDF file with the name of the subawardee organization. Once each subawardee institution has completed the form, you must attach these completed subaward budget form files to the R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form. Each subaward budget form file attached to this form must have a unique name.

**Note:** This R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form must be used to attach only one or more Research & Related Budget (Total Fed + Non-Fed) form(s) that have been extracted from this form. Note the form's instruction: "Click here to extract the R&R Budget (Fed/Non-Fed) Attachment". **If you attach a file format to this form that was not extracted from this attachment form your application will be rejected with errors by Grants.gov.**

## **7. Other Forms Included in the Application Package**

You are required to submit the first two forms identified here. You are not required to submit the third form, Disclosure of Lobbying Activities – Standard Form LLL, unless it is applicable.

- SF 424B-Assurances-Non-Construction Programs.
- Grants.gov Lobbying form (formerly ED 80-0013 form).
- Disclosure of Lobbying Activities – Standard Form LLL (if applicable).

## F. SUMMARY OF REQUIRED APPLICATION CONTENT

R&R Form	Required	Instructions Provided	Additional Information
Application for Federal Assistance SF 424 (R & R)	<input checked="" type="checkbox"/>	Part V.E.1	Form provided in Grants.gov application package
Senior/Key Person Profile (Expanded)	<input checked="" type="checkbox"/>	Part V.E.2	Form provided in Grants.gov application package
Project/Performance Site Location(s)	<input checked="" type="checkbox"/>	Part V.E.3	Form provided in Grants.gov application package
Other Project Information	<input checked="" type="checkbox"/>	Part V.E.4	Form provided in Grants.gov application package
Budget (Total Federal + Non-Federal): Sections A & B Sections C, D, & E Sections F - K	<input checked="" type="checkbox"/>	Part V.E.5	Form provided in Grants.gov application package
R&R Subaward Budget (Fed/Non-Fed) Attachment(s) Form	--	Part V.E.6	Form provided in Grants.gov application package. Use this form to <i>extract and attach</i> a subaward budget(s).
SF 424B Assurances – Non-Construction Programs Grants.gov Lobbying form (formerly ED 80-0013 form) Disclosure of Lobby Activities – Standard Form LLL (if applicable)	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> --	Part V.E.7	Forms provided in Grants.gov application package
Center Summary/Abstract	<input checked="" type="checkbox"/>	Part IV.D.1	Add as an attachment (PDF file) using Item 7 of the "Other Project Information" form
Center Narrative and Appendices <ul style="list-style-type: none"> <li>• Narrative</li> <li>• Appendix A</li> <li>• Appendix B</li> <li>• Appendix C</li> <li>• Appendix D</li> </ul>	<input checked="" type="checkbox"/> -- -- -- <input checked="" type="checkbox"/>	Part IV.D.2-6	The Center Narrative, Appendix A (required for resubmissions), Appendix B, Appendix C, and Appendix D (required for all Center applications) must ALL be included together in one PDF file and attached at Item 8 of the "Other Project Information" form.
Bibliography and References Cited	<input checked="" type="checkbox"/>	Part IV.D.7	Add as an attachment (PDF file) using Item 9 of the "Other Project Information" form.
Research on Human Subjects Narrative, if human subjects are involved	<input checked="" type="checkbox"/>	Part IV.D.8	Add as an attachment (PDF file) using Item 12 of the "Other Project Information" form.
Biographical Sketches of Senior/Key Personnel	<input checked="" type="checkbox"/>	Part IV.D.9	Add each as a separate attachment (PDF file) using the "Senior/Key Person Profile (Expanded)" form.

Lists of Current & Pending Support for Senior/Key Personnel	<input checked="" type="checkbox"/>	Part IV.D.10	Add each as a separate attachment (PDF file) using the "Senior/Key Person Profile (Expanded)" form.
Narrative Budget Justification	<input checked="" type="checkbox"/>	Part IV.D.11	Add as an attachment (PDF file) using <i>Section K – Budget Period 1</i> of the "Budget (Total Federal + Non-Federal)" form.

## G. APPLICATION CHECKLIST

Have each of the following forms been completed?	
	SF 424 Application for Federal Assistance
	For item 4a, is the PR/Award number entered if this is a Resubmission following the instructions in Part V.E.1?
	For item 4b, is the correct topic code included following the instructions in Part V.E.1?
	For item 8, is the Type of Application appropriately marked as either "New" or "Resubmission" following the instructions in Part V.E.1?
	Senior/Key Person Profile (Expanded)
	Project/Performance Site Location(s)
	Other Project Information
	Budget (Total Federal + Non-Federal): Sections A & B; Sections C, D, & E; Sections F - K
	R&R Subaward Budget (Federal/Non-Federal) Attachment(s) form (if applicable)
	SF 424B Assurances – Non-Construction Programs
	Grants.gov Lobbying form (formerly ED 80-0013 form)
	Disclosure of Lobby Activities – Standard Form LLL (if applicable)
Have each of the following items been attached as PDF files in the correct place?	
	Center Summary/Abstract, using Item 7 of the "Other Project Information" form
	Center Narrative, and where applicable, Appendix A (required for resubmissions), Appendix B, Appendix C, and Appendix D (required for all Center applications) as a single file using Item 8 of the "Other Project Information" form
	Bibliography and References Cited, using Item 9 of the "Other Project Information" form
	Research on Human Subjects Narrative, either the Exempt Research Narrative or the Non-exempt Research Narrative, using Item 12 of the "Other Project Information" form
	Biographical Sketches of Senior/Key Personnel, using "Attach Biographical Sketch" of the "Senior/Key Person Profile (Expanded)" form
	Lists of Current & Pending Support, using "Attach Current & Pending Support" of the "Senior/Key Person Profile (Expanded)" form
	Narrative Budget Justification, using Section K – Budget Period 1 of the "Budget (Total Federal + Non-Federal)" form

	Budget (Total Federal + Non-Federal): Sections A & B; Sections C, D, & E; Sections F – K for the Subaward(s), using the "R&R Subaward Budget (Federal/Non-Federal) Attachment(s)" form, as appropriate, that conforms to the Award Duration and annual and total cost maximums for the Center
Have the following actions been completed?	
	The correct PDF files are attached to the proper forms in the Grants.gov application package
	The "Check Package for Errors" button at the top of the grant application package has been used to identify errors or missing required information that prevents an application from being processed
	The "Track My Application" link has been used to verify that the upload was fully completed and that the application was processed and validated successfully by Grants.gov before 4:30:00 p.m., Washington, DC time on the deadline date

## **H. PROGRAM OFFICER CONTACT INFORMATION**

As a reminder, please contact the Institute's program officers with any questions you may have. Program officers function as knowledgeable colleagues who can provide substantive feedback on your research idea, including reading a draft of your project narrative. Program officers can also help you with any questions you may have about the content and preparation of PDF file attachments. However, any questions you have about individual forms within the application package and electronic submission of your application through Grants.gov should be directed first to the Grants.gov Contact Center at [support@grants.gov](mailto:support@grants.gov), <http://www.grants.gov/web/grants/about/contact-us.html>, or call 1-800-518-4726.

### **Virtual Learning**

Dr. Erin Higgins

Email: [Erin.Higgins@ed.gov](mailto:Erin.Higgins@ed.gov)

Telephone: (202) 208-3749

# GLOSSARY

**Assessment:** “Any systematic method of obtaining information, used to draw inferences about characteristics of people, objects, or programs; a systematic process to measure or evaluate the characteristics or performance of individuals, programs, or other entities, for purposes of drawing inferences; sometimes used synonymously with test” (AERA, 2014).

**Assessment framework:** Includes the definition of the construct(s); theoretical model on which the assessment is based; and the rationale for validity evidence to support its use for the intended purpose and population.

**Authentic education setting:** Proposed research must be relevant to education in the United States and must address factors under the control of the U.S. education system (be it at the national, state, local, and/or school level). To help ensure such relevance, the Institute requires research to work within or with data from authentic education settings. Authentic education settings include both in-school settings (including PreK Centers) and formal programs that take place after school or out of school (e.g., after-school programs, distance learning programs, online programs) under the control of schools or state and local education agencies. Formal programs not under the control of schools or state and local education agencies are not considered as taking place in an authentic education setting and are not appropriate for study under the Education Research Grants program. Authentic education settings can be identified for the following education levels:

- **Authentic PreK Education Settings** are defined as center-based prekindergarten settings that include:
  - Public prekindergarten programs.
  - Child care centers.
  - Head Start programs.
- **Authentic K-12 Education Settings** are defined as the following:
  - Schools and alternative school settings (e.g., alternative schools or juvenile justice settings).
  - School systems (e.g., local education agencies or state education agencies).
  - Settings that deliver supplemental education services (as defined in Section 1116(e) of the Elementary and Secondary Education Act of 1965, as amended by the No Child Left Behind Act of 2001) (<http://www2.ed.gov/policy/elsec/leg/esea02/index.html>).
  - Career and Technical Education Centers affiliated with schools or school systems.
- **Authentic Postsecondary Education Settings** are defined as the following:
  - 2-year and 4-year colleges and universities that have education programs leading to occupational certificates or associate’s or bachelor’s degrees.
  - Career and Technical Education Centers affiliated with postsecondary institutions.
- **Authentic Adult Education Settings** include colleges, universities, K-12 institutions that serve adults, career and technical education centers, or alternative settings (e.g., libraries, community centers, correctional institutions) where the following are provided:
  - Adult English language programs.
  - Adult Basic Education (ABE).
  - Adult Secondary Education (ASE).
  - Programs to prepare students for high school equivalency exams.
  - Programs that assist students who lack secondary education credentials (e.g., diploma or GED) or basic skills that lead to course credit or certificates.

Compliant: The part of the process of screening applications for acceptance for review that focuses on compliance with the application rules (e.g., page length and formatting requirements, completion of all parts of the application).

Development process: The process used to develop and/or refine an intervention or assessment.

Efficacy study: A study that tests an intervention's beneficial impacts on student education outcomes in comparison to an alternative practice, program, or policy.

Fidelity of implementation: The extent to which the intervention is being delivered as it was designed to be by end users in an authentic education setting.

Final manuscript: The author's final version of a manuscript accepted for publication that includes all modifications from the peer-review process.

Fully-developed intervention: An intervention is fully developed when all materials and products required for its implementation by the end user are readily available for use in authentic education settings.

Intervention: The wide range of education curricula, instructional approaches, professional development, technology, and practices, programs, and policies that are implemented at the student, classroom, school, district, state, or federal level to improve student education outcomes.

Moderators: Factors that affect the strength or the direction of the relationship between the intervention and student education outcomes (e.g., an intervention's impacts may differ by such student characteristics as achievement level, motivation, or social-economic status; and by organizational or contextual factors, such as school size or neighborhood characteristics)

Mediators: Factors through which the relationship between the intervention and student education outcomes occurs (e.g., many interventions aimed at changing individual student education outcomes work through changing teacher behavior, student peer behavior, and/or student behavior).

Reliability: "The degree to which test scores for a group of test takers are consistent over repeated applications of a measurement procedure and hence are inferred to be dependable and consistent for an individual test taker; the degree to which scores are free of random error of measurement for a given group" (AERA, 2014).

Responsive: The part of the process of screening applications for acceptance for review that focuses on responsiveness to the Request for Applications. This screening includes making sure applications 1) are submitted to the correct competition and/or topic and 2) meet the basic requirements set out in the Request for Applications.

Student education outcomes: The outcomes to be changed by the intervention. The intervention may be expected to directly affect these outcomes or indirectly affect them through intermediate student or instructional personnel outcomes. There are two types of student education outcomes. The topic you apply to will determine the types of student education outcomes you can study.

- Student academic outcomes: The Institute supports research on a diverse set of student academic outcomes that fall under two categories. The first category includes academic outcomes that reflect learning and achievement in the core academic content areas (e.g., measures of understanding and achievement in reading, writing, math, and science). The second category includes academic outcomes that reflect students' successful progression through the education system (e.g., course and grade completion and retention in grade K through 12; high school graduation and dropout; postsecondary enrollment, progress, and completion).
- Social and behavioral competencies: Social skills, attitudes, and behaviors that may be important to students' academic and post-academic success.

Theory of change: The underlying process through which key components of a specific intervention are expected to lead to the desired student education outcomes. A theory of change should be specific enough to guide the design of the evaluation (e.g., selecting an appropriate sample, measures and comparison condition).

Validity: “The degree to which accumulated evidence and theory support a specific interpretation of test scores for a given use of a test. If multiple interpretations of a test score for different uses are intended, validity evidence for each interpretation is needed” (AERA, 2014).

## REFERENCES

- Aleven, V., Beal, C.R., and Graesser, A. C. (2013). Introduction to the Special Issue on Advanced Learning Technologies. *Journal of Educational Psychology*, 105(4): 929-931.
- American Educational Research Association (2014). *Standards for Educational and Psychological Testing*. AERA: Washington, DC.
- American Psychological Association, Research Office (2009). *Publications Manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association.
- Baker, R. and Siemens, G. (2014, forthcoming). Educational Data Mining and Learning Analytics. In K. Sawyer (Ed.) *Cambridge Handbook of the Learning Sciences*, 2<sup>nd</sup> edition.
- Campuzano, L., Dynarski, M., Agodini, R., and Rall, K. (2009). *Effectiveness of Reading and Mathematics Software Products: Findings From Two Student Cohorts* (NCEE 2009-4041). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.
- Davies, R. S., & West, R. E. (2014). Technology Integration in Schools. In J.M. Spector, M.D. Merrill, J. Elen, and M.J. Bishop (Eds), *Handbook of Research on Educational Communications and Technology* (pp. 841-853). Springer New York.
- Dynarski, M., Agodini, R., Heaviside, S., Novak, T., Carey, N., Campuzano, L., Means, B., Murphy, R., Penuel, W., Javitz, H., Emery, D., and Sussex, W. Effectiveness of Reading and Mathematics Software Products: Findings from the First Student Cohort, Washington, D.C.: U.S. Department of Education, Institute of Education Sciences, 2007.
- Graesser, A.C., McNamara, D.S., and Kulikowich, J.M. (2011). Coh-Metrix: Providing Multilevel Analyses Of Text Characteristics. *Educational Researcher*, 40 (5): 223–234.
- Koedinger, K. R, Booth, J. L., and Klahr, D. (2013). Instructional Complexity and the Science to Constrain It. *Science*, 342, 935-937.
- Steenbergen-Hu, S., & Cooper, H. (2013a, December 23). A Meta-Analysis of the Effectiveness of Intelligent Tutoring Systems on College Students' Academic Learning. *Journal of Educational Psychology*. Advance online publication. doi: 10.1037/a0034752
- Steenbergen-Hu, S., & Cooper, H. (2013b). A Meta-Analysis of the Effectiveness of Intelligent Tutoring Systems on K-12 Students' Mathematical Learning. *Journal of Educational Psychology*, 105(4): 970-987.
- West, Darrel M. (2012). *Big Data for Education: Data Mining, Data Analytics and Web Dashboards*. Washington, D.C.: Brookings Institution.
- Wijekumar, K., and Meyer, B.J.F. (2006). Design and Pilot of a Web-Based Intelligent Tutoring System to Improve Reading Comprehension in Middle School Students. *International Journal of Technology in Teaching and Learning*, 2 (1): 36–49.

## ALLOWABLE EXCEPTIONS TO ELECTRONIC SUBMISSIONS

You may qualify for an exception to the electronic submission requirement and submit an application in paper format if you are unable to submit the application through the Grants.gov system because: (a) you do not have access to the Internet; or (b) you do not have the capacity to upload large documents to the Grants.gov system; and (c) no later than 2 weeks before the application deadline date (14 calendar days or, if the fourteenth calendar date before the application deadline date falls on a Federal holiday, the next business day following the Federal holiday), you mail or fax a written statement to the Institute explaining which of the two grounds for an exception prevents you from using the Internet to submit the application. If you mail the written statement to the Institute, it must be postmarked no later than 2 weeks before the application deadline date. If you fax the written statement to the Institute, the faxed statement must be received no later than 2 weeks before the application deadline date. The written statement should be addressed and mailed or faxed to:

Ellie Pelaez, Office of Administration and Policy  
Institute of Education Sciences, U.S. Department of Education  
555 New Jersey Avenue, NW, Room 600E  
Washington, DC 20208  
FAX: (202) 219-1466

If you request and qualify for an exception to the electronic submission requirement you may submit an application via mail, commercial carrier or hand delivery. To submit an application by mail, mail the original and two copies of the application on or before the deadline date to:

U.S. Department of Education  
Application Control Center  
Attention: CFDA# (84.305C)  
LBJ Basement Level 1  
400 Maryland Avenue, S.W.  
Washington, DC 20202 – 4260

You must show one of the following as proof of mailing: (a) a legibly dated U.S. Postal Service Postmark; (b) a legible mail receipt with the date of mailing stamped by the U.S. Postal Service; (c) a dated shipping label, invoice, or receipt from a commercial carrier; or (d) any other proof of mailing acceptable to the U.S. Secretary of Education (a private metered postmark or a mail receipt that is not dated by the U.S. Postal Services will not be accepted by the Institute). Note that the U.S. Postal Service does not uniformly provide a dated postmark. Before relying on this method, you should check with your local post office. If your application is postmarked after the application deadline date, the Institute will not consider your application. The Application Control Center will mail you a notification of receipt of the grant application. If this notification is not received within 15 business days from the application deadline date, call the U.S. Department of Education Application Control Center at (202) 245-6288.

To submit an application by hand, you or your courier must hand deliver the original and two copies of the application by 4:30:00 p.m. (Washington, DC time) on or before the deadline date to:

U.S. Department of Education  
Application Control Center  
Attention: CFDA# (84.305C)  
550 12th Street, S.W.  
Potomac Center Plaza - Room 7039  
Washington, DC 20202 – 4260

The Application Control Center accepts application deliveries daily between 8:00 a.m. and 4:30 p.m. (Washington, DC time), except Saturdays, Sundays and Federal holidays.