

IES FY 2020 Grant Competitions:
IES Grant Writing Workshop

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Transcript

Transcription is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings.

(Slide 1)

Hello, everyone. Welcome to the Grant Writing Workshop.

My name is Erin Higgins, and I am a program officer at the National Center for Education Research. I am also here with my colleague, Sarah Brasiel from the National Center for Special Education Research. Thank you for joining us. This is going to be an intensive webinar with a lot of information being shared. So please note any questions that you have along the way and don't hesitate to reach out to us by email after you've reviewed this webinar.

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The purpose of the grant writing workshop is to provide you with information and advice on how you can write a successful and competitive application to our main research grants programs at IES. In particular, we're going to focus on two grants programs. The Education Research Grants program with CFDA Number 84.305A and the Special Education Research Grants program with CFDA Number 84.324A.

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We understand that grant writing is a process that starts with an idea and progresses through several stages. As you start writing your proposal, you may be contacting people to lineup your research team. Grant writing tends to be an iterative process since the majority of grants do not receive funding the first time around. And that's okay. Our goal with this webinar is to try to teach you to write the most competitive application you can so that you may be one of the lucky ones to receive funding the first time around. Or if you don't get funded the first time around, you can learn some new information about ways you that can improve your application.

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So for this webinar, we'll begin by providing an overview of IES. Particularly for folks what may not be as familiar with IES or are first time applicants. Then we'll discuss some grant writing tips, go over the general requirements, provide information about the research grant topic and project types, and discuss what should be included in the project narrative of the grant application.

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IES is the independent research arm of the U.S. Department of Education. Authorized by the Education Sciences Reform Act of 2002. We are nonpartisan. We are charged with providing rigorous evidence to inform education practice and policy and sharing this information with educators, parents, policy makers, researchers, and the public. The overall mission of IES is to describe the condition in progress of education in the United States, identify education practices

that improve academic achievement and access to education opportunities and evaluate the effectiveness of federal and other education programs.

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This graphic represents the organizational structure of IES. We are led by a director who receives advice and consultation from the National Board for Education Sciences. The board consists of 15 voting members who are appointed by the President and confirmed by the Senate. Our science office oversees the scientific peer-review process for IES grant applications and reports.

We also have four centers within IES. The National Center for Education Statistics or NCES is the primary federal entity for collecting and analyzing data related to education. Within NCES, you may be familiar with the National Assessment of Educational Progress, or NAEP. And within NCES, you may also find large national longitudinal data sets. Including for example: "The Early Childhood Longitudinal Study."

The National Center for Educational Evaluation and Regional assistance, or NCEE, conducts unbiased large-scale evaluations of education programs supported by federal funds. It also provides technical assistance and supports the development and use of research and evaluation throughout the United States.

In NCEE, you will find the What Works Clearinghouse and the Regional Educational Labs. The two centers that award grants are highlighted in blue. The National Center for Educational Research referred to as NCER, and the National Center for Special Education Research or NCSER are those two centers.

The grant opportunities that we'll be talking about today are managed through these two centers. You will also notice here that the research centers are separate from the science office and standards and review staff. Meaning that we program officers are not involved in the peer-review process. This allows us to work closely with you providing technical assistance to you on your grant applications. We will discuss more about this later in the webinar.

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This bridge graphic represents how we think about the infrastructure at IES to support our overall mission. We intend for our work to form a bridge from research to practice and back again recognizing the critical linkage and interplay between research and practice. So how do we do this? We provide data that describe how well the United States is educating its learners. We conduct surveys and sponsor research projects to understand where education needs improvement, and how these improvements might be made. We fund development and rigorous testing of new approaches for improving education outcomes for all learners.

We conduct large scale evaluations of federal education programs and policies. We provide resources to increase use of data and research and education decision making. And finally, we support the advancement of statistics and research through specialized training and development of methods and measures.

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The objective of the IES Research Grants programs is to improve education outcomes for all learners. Particularly those at risk for failure. These programs do this by developing or identifying education interventions that enhance academic achievement and can be widely deployed. By identifying what works and what doesn't, we can encourage further research and innovation and better understand the processes that underlie the effectiveness of education interventions and the variations in their effectiveness.

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So why would you apply to IES? Well, you would apply to IES if you were interested in working in education settings. You're interested in improving education outcomes. And you are committed to sharing your research findings with education practitioners.

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What makes us different from other funding programs within the Department of Education? Here grant funds are to cover research and not programs support or service provision. And a good application is a good application. We don't have priorities or competitive preferences that result in extra points for applicants.

Reviewers have flexibility to assign points based on overall scientific merit. We don't ask reviewers to use a rubric as they score. For example, other programs might assign a maximum number of points you could obtain in your significance section. We allow reviewers flexibility to weight each section as they see fit on determining the overall scientific merit of your application. IES is unique because it supports rigorous research at all stages of a project. Including basic research, iterative to inform research and development of interventions and measures, pilot studies, and larger studies to determine efficacy of interventions.

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This chart lists the three major federal funders of education research. IES, the National Science Foundation and the National Institutes of Health. IES and NIH are similar in that we have an independent scientific review office that's separate from the program offices. At NSF, the program officers manage the review process. So this limits the amount of technical assistance they can give applicants since they're directly involved in the review process. IES is as competitive or even more competitive than other federal funding agencies.

In terms of the types of things we fund, there is some overlap. And certainly complementary research is happening among agencies, but there are key differences. For instance, NSF is more STEM focused than IES. Though we both fund STEM work. NIH specifically the National Institute of Child Health and Human Development, and the National Institute of Mental Health supports foundational research such as brain-related research and genetics research that we don't fund at IES. Results from this work, however, could certainly inform the work we do at IES and could guide researchers to develop a grant to IES. So that was a quick overview of IES. And now we'll talk about current funding opportunities.

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For more information about the funding opportunities available within NCER and NCSER, you can find them on our website. Here's a screenshot of the Funding Opportunities page.

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One of the most important documents you'll need to become aware of as you prepare an application is the Request for Applications or RFA. The RFA is your guide for preparing a high-quality application. We provide a great deal of detail in our RFAs about the requirements you must meet as well as recommendations for how to write a high-quality application. Second, reviewers use RFAs to evaluate your application for its scientific merit. RFAs have sections to walk you through what you need to know and include in your application.

These sections are the overview and general requirements. Which includes a summary of changes from previous competitions, topics, project type requirements and recommendations, appendices and other narrative content, competition regulations and review criteria, and compliance and responsiveness checklist. In this current competition, the fiscal year 2020 competition, IES has developed a separate submission guide which contains important information about submission procedures and IES specific guidance and recommendations to ensure that your application is complete and received on time without errors through the Grants.gov website.

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When preparing a grant application, the first and most important thing to do is read the request for applications. Even if you're resubmitting an application, and you're pretty familiar with the requirements of the Education research and Special Education Research Grants Programs, there are some changes this year, and we want to make sure you are aware of them. In addition, we think it's important for everyone involved in the preparation of the application, including you as the PI, your team members such as co-PI, statisticians, methodologists, and developers to read the RFA. In addition, the Sponsored Projects Officers should also read the RFA since for most institutions and organizations, they are the ones who will be submitting the application for you.

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This year, we have separated out the information about how to submit an application into a separate document known as the IES Submission Guide. This guide provides you with all the information you need to submit a complete application package through the grants.gov system. Any person involved in the preparation and submission of the application should review the IES Submission Guide to ensure complete, on time submission.

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As I noted already, there are sometimes changes made to the RFAs including this year. And Part 1 of the RFA always includes a summary of those changes. We urge you to pay careful attention to these changes. Particularly if you have applied to IES in the past and you may be resubmitting an application.

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Our primary grants programs are CFDA Numbers 84.305A and 84.324A. These are the programs we will focus on today. Though many of our tips will apply across competitions. We recommend all applicants be familiar with the 305A and 324A competitions even if you don't intend to apply to them this year. With the ARFAs you'll need to apply under one topic and project type combination. Later, we'll provide a high-level summary of the topics and project types being competed in the fiscal year 2020.

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I'm now going to talk about some good general tips in terms of grant writing.

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When writing a competitive grant application, what I typically tell applicants is to think about their proposal as a persuasive essay because you really want to sell your research idea. You want to be able to show that you're the best person to do the research proposed, and you want to be able to build goodwill and trust with the reviewers. So how do you go about doing that? We think you should do that by demonstrating that you know what the problem is and that you have the best way to address it.

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In the opening paragraph of your project narrative, you should set the scene for the readers and reviewers by showing what you're doing is important, and how you're going to go about doing it. You should organize the information in a very accessible way. You don't want to lose readers

right off the bat because they don't understand what you're doing. The opening paragraph is critical in terms of hooking the reviewers and leading them to believe that what you're doing is significant and will improve education outcomes.

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To that end, your Statement of Purpose should be part of the opening paragraph. Your Statement of Purpose or problem statement should be short and attention-grabbing. We recommend that you have your friends, family, and other researchers take a look at it and provide feedback.

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Similarly, we see the theory of change as crucial to a successful application. We will talk in more detail about what goes into a theory of change later, but I'm going to provide a brief overview here. The Theory of Change is the model underlying your research. And it serves as a road map for how you will be describing the work that you'll be doing in your project. It can be constantly evolving in that depending on the findings from your study, your theory of change may actually change. So it may not be a static model which is fine. We know researchers in other fields like to use terms like “logic models” or “logical framework”, and we see these as pretty similar in terms of what we're referring to here as the theory of change. So these terms may be used interchangeably.

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Your Theory of Change should be reflected in your research plan such that you need to specify exactly what you're looking to explore, develop, validate, or test. In terms of the outcomes of the study, you'll want to be able to specify what it is that you're measuring and what you're targeting. For example, what measures will you include for those in the treatment versus the control condition that allows you to make conclusions about your research questions?

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You should share your framework and statement of purpose with your program officer. IES program officers are here to answer questions and provide feedback on your proposal. Including whether you are submitting to the appropriate research topic or project type.

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We also can't reiterate enough the importance of having a clear and succinct application. You want to make sure in the significance section that you're not too general in your description. You want to be able to provide sufficient detail regarding the intervention, or program, or policy that your studying. If you're looking to develop an intervention, it's important to specify how you're going to be developing, revising, and testing the components of the intervention. You want to

clearly specify your data analysis plan as well. You don't just want to have a statement stating that you're going to be conducting HLM analysis and leave it at that. We want you to provide detail about how you'll be analyzing the data and include formulas as appropriate.

Similarly, try to refrain from using a lot of jargon. Our review panels are diverse in their areas of expertise. So don't take for granted that they know what you're talking about. Provide context and background. Also, make sure you're using correct grammar and that everything is spelled correctly. This all goes a long way because reviewers can get frustrated when they can't understand what you're saying because your sentence doesn't make sense. So give the reviewers a break and make sure writing is clear and succinct.

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As you prepare your application, please use our resources for researchers. We have other funding opportunity webinars available on our website, and we have many resources for researchers as well.

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Next, I'm going to go into some general requirements that we have in the RFAs for the Education research and Special Education Research Grants Programs.

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To begin, under the Education Research and Special Education Research Grants Programs, you must measure education outcomes in your study. The project must also be relevant to education in the United States, and it must be conducted in education settings. If you have questions about what we mean by an education setting, we have it well defined in the RFA. If after reading that you still aren't sure, please contact your program officer, and they will be happy to provide more detail. As mentioned previously all proposals must also specify one research topic and one project type.

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This table outlines the specific learner outcomes that are of interest for the Education Research Grants Program. As you can see, the outcomes are broken out by grade level. If you're proposing a project that's targeting prekindergarten learners, your outcomes should focus on school readiness. Including prereading, language, vocabulary, early STEM, English language proficiency, and/or social behavioral competencies. If you're targeting learners in grades K to 12, the outcomes that you may look at include learning, achievement, and higher order thinking in the academic content areas of reading, writing, and STEM, English language proficiency, and progression through education systems. If you're looking to address post-secondary learners, the outcomes that you should focus on include access to persistence or progression and completion

of post-secondary education, and learning achievement, and higher order thinking in post-secondary courses. And finally, for adult education populations, the focus should be on learner achievement in reading, writing, English language proficiency, and mathematics. You can also address outcomes related to access persistence, progression through and completion of adult education courses and programs.

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This table highlights the special education outcomes of interest by age and grade level. For birth through age five, so infants, toddlers, and preschoolers, we're looking at developmental outcomes and school readiness. This includes developmental outcomes pertaining to cognitive, communicative, linguistic, social, emotional, adaptive, functional, or physical development, and school readiness knowledge, and social and behavioral competencies. Including self-regulation and executive function that prepare young children for school.

For kindergarten through high school, we're interested in learning achievement and higher order thinking in academic content areas of reading, writing, and STEM. And progressing through education as indicated by persistence and completion of high school course credits and content areas, high school graduation, certificates, and/or drop out. A range of social skills, attitudes, and behaviors may be important to learner's education and post-school success. Some important outcomes also include behaviors that support learning. In addition, IES is interested in functional outcomes that improve educational results and the transition outcomes to employment, independent living, and post-secondary education.

For a few of our topic areas, we are interested in post-secondary outcomes. For the topic areas of Science, Technology, Engineering and Mathematics, or STEM education, Transition Outcomes for Secondary Students with Disabilities, Technology for Special Education, Special Topic: Career and Technical Education for Students with Disabilities, and Special Topic: Systems Involved Students with Disabilities projects can include post-secondary education outcomes of access to, persistence in, progress through, and completion of post-secondary education. Which includes programs that lead to occupational certificates, or associates or bachelor's degrees, learning, achievement, and higher order thinking in post-secondary courses and employment and earnings outcomes. Such as hours of employment, job stability, wages, and benefits.

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Now we will focus on research topics.

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As a reminder, you have to specify a topic and a project type if you're submitting to the Education Research or Special Education Research Grants Programs. Every application must identify a research topic area. You will indicate your topic on the SF 424 form under item 4b.

You also want to make sure that it's identified at the top of your abstract and at the top of your project narrative as well.

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Both the Education Research Grants Program and the Special Education Research Grants program offer 11 standing topics. Some of which mirror each other. You must select a topic that identifies your field of research. In addition for this year, the fiscal year 2020 competition, NCSER is competing special topics. The special topics are intended to encourage research in understudied areas that appear promising for improving education outcomes and that are of interest to policymakers and practitioners. This year, NCSER is competing three special topics. Career and technical education for students with disabilities, English learners with disabilities, and systems involved students with disabilities. Certain topics may have special requirements. For instance, the grade range varies by topic in a few instances. In addition, there are descriptions of needed research under each topic.

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Just to reiterate and emphasize again, under each of the topic areas, you must address education outcomes for learners. We understand that sometimes your project may fit under more than one topic . So we have advice for how to decide between overlapping topic areas. You should consider the key learner outcomes and age ranges of target learners when choosing a topic. Program officers are a useful resource for choosing a topic as well.

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So what should you do when a project actually fit under two, three, or even four different topic areas? What we suggest is to look to the literature that you're citing in your proposal. For example, is it citing more research in a technology area than in a reading domain? If so, you may want to apply under the Education Technology topic. You also want to think about the topic in which your area of expertise is best aligned. For instance, if your area of expertise is more in education technology as opposed to curriculum development that's something to consider. Also, think about the specific population of learners or teachers that you're targeting. For instance, if your intervention or research is targeting English learners, think about whether English learners are the main focus of your research, or if they're just one subgroup of learners that you're studying. If you continue to have questions about which topic you should apply to, please contact a program officer for assistance.

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Now, we're going to go onto the project types.

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In addition to identifying a topic focus in your application, you also need to specify a project type. The specific project type of your application should be included with the SF 424 form under item 4b. In addition, you want to identify the research topic and project type on your abstract and research narrative as well. Where appropriate, project type descriptions and requirements and recommendations are aligned with the SEER Principles to ensure that research is transparent, actionable, and focused on meaningful outcomes that have the potential to dramatically improve education.

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So which topic and project type best fits your project? This is a common question that we get. When deciding on the project type, think about your research questions and what stage your research is at. For instance, are you building theory or are you looking to develop components of an intervention? Are you focused on examining the impact of an intervention that's already been developed? Are you looking to validate a measure? In terms of the topic, think about your background and area of expertise, the theoretical base behind your research, and population you're targeting as we already mentioned.

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Because selecting the appropriate project type may not always be straight forward, IES program officers can help you through this process. Please free to reach out to them if you have questions about which topic and project type combination is the best for your research.

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IES encourages focused research along a continuum of research, development, and evaluation activities necessary for building a scientific research enterprise. For all applications, you must identify your project type. The four project types being competed this year, which are the same across both research centers, are Exploration, Development and Innovation, Initial Efficacy and Follow-Up, and Measurement. For those of you who are familiar with the IES project types, you will notice that IES is not accepting applications to carry out replication studies under the ARFAs. Rather, applicants interested in carrying out a replication study should consult the Research Grants Focused on Systematic Replications program for funding for replication studies of IES identified reading and math interventions.

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Now I'm going to go over some specific details about these project types. Exploration projects focus on identifying relationships between individual, educator, school, and policy level characteristics, and education outcomes, and factors outside of education settings that may influence or guide those relationships. Development and Innovation projects focus on the

development and pilot testing of new or modified education interventions that are intended to produce beneficial impacts on learner outcomes. Initial Efficacy and Follow-up projects focus on the initial efficacy studies of education interventions using designs that meet IES's What Works Clearinghouse standards, and longer-term follow-up studies of rigorously evaluated interventions. Applications will be reviewed against the WWC standards in effect at the time of RFA publication. Replication projects are not being competed in this year's request for application for the 305A and 324A competitions so I will skip over that.

And finally, measurement projects support the development and validation of new assessments and refinement and validation of existing assessments for specific purposes, contexts, and populations. A measurement project will result in a valid assessment that can be used by education personnel or researchers to improve learner outcomes for specific populations in context. Measurement projects can also address purposes such as measuring educator knowledge, skills, and abilities, guiding instruction, improving educator practice, evaluating educator job performance, or assessing the effectiveness of schools or school systems.

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Here is a general table that provides a breakdown of the maximum budget and maximum years that can be requested for each project type. Please note for Exploration and Efficacy and Follow-Up that there are different duration and award maximums based on the type of study you're proposing.

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In terms of the project type requirements, please carefully review the requirements and recommendations outlined in the RFA. In the RFA, we spell out the specific requirements which are the bare minimum that you need to include in your grant application in order to be considered responsive and sent forward for a review. However, the RFA also outlines recommendations that we strongly suggest you include or address so that you have a more competitive application.

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Exploration, as I already mentioned, supports projects that identify relationships between individual, educator, school, and policy level characteristics, and education outcomes. And factors outside of education settings that may influence or guide those relationships. Findings from Exploration projects point out potentially fruitful areas for further attention from researchers, policy makers, and practitioners rather than providing strong evidence for adopting specific interventions or assessment tools. Under the Exploration project type, IES does not support work to develop an intervention or test the causal impact of an intervention. If you plan to develop or evaluate an intervention or assessment, you must apply under one of the other appropriate project types or your application will be deemed nonresponsive and will not be sent forward for peer review.

You may propose to conduct experimental studies under Exploration if the purpose is to examine relationships between factors and education outcomes rather than to test the causal impact of an intervention. As examples of the kinds of projects, you could propose, researchers have investigated the relationship between an aspect of instruction and learning outcomes in science. Others have looked at the types of school based screening practices being implemented and looked at how they're associated with learners' behavioral outcomes for example.

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So if you're looking to do an Exploration project, make sure to clearly explain the factors you'll be focusing on. Some examples of factors include learner behaviors and skills, teacher practices or teacher credentials, or school size, climate, and organization. You can also examine specific education interventions which could include curricula, instructional approaches, programs, or policies as long as your intent is not to develop or evaluate those interventions. Under Exploration, you can also propose to do secondary data analysis, conduct a meta-analysis, collect primary data or any combination of those approaches.

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Development and Innovation supports the development and pilot testing of new or modified education interventions intended to produce beneficial impacts on learner outcomes. A Development and Innovation project will result in a fully developed intervention, evidence of the intervention's theory of change, and data that speak to the intervention's feasibility, fidelity of implementation, costs, and promise for improving learner outcomes. If you propose only minor development activities and are mainly focused on testing the intervention's impact, you must apply under Initial Efficacy and Follow-Up, or your application will be deemed nonresponsive and will not be sent forward for a review.

As an example of the kind of things you can propose here. Researchers have developed or are developing a classroom-based intervention to improve learners' understanding of algebra concepts, a program to prevent burn out among special education teachers, and a curriculum to promote effective coping strategies to manage stressors that impede learning for adolescents in low-income urban areas.

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Under Development and Innovation, the focus is on developing or revising an intervention to improve education outcomes. To that end, you really want to highlight the features of the intervention that you'll be developing and revising. It is important to make sure that your development process is iterative with multiple cycles of development and testing. You want to provide sufficient information about the data you'll be collecting including data on the

intervention's usability and feasibility in education settings. And you want to make sure you measure fidelity of implementation.

At the tail end of a Development and Innovation project, you want to include a pilot study in which you will be measuring education outcomes to see how promising the newly developed or revised intervention is for help improving education outcomes. Importantly, you also need to collect data to examine the cost of the intervention.

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Initial Efficacy and Follow-Up supports initial efficacy studies of education interventions using designs that meet the IES's What Works Clearinghouse evidence standards and longer-term follow-up studies of rigorously evaluated interventions. Applications will be reviewed against the WWC standards in effect at the time of RFA publication.

Initial Efficacy projects test interventions that have not been rigorously evaluated previously to examine the intervention's beneficial impact on education outcomes in comparison to an alternative practice, program or policy. Follow-up projects test the longer-term impact of an intervention that has been shown to have beneficial impacts in education outcomes on a previous or ongoing evaluation study. Initial Efficacy and Follow-up projects should provide practical information about the benefits and costs of specific interventions to inform the intervention's theory of change, its implementation and future research.

If the intervention you propose to evaluate is not fully developed, you must apply under the Development and Innovation project type, or your application will be deemed nonresponsive and will not be forwarded for scientific peer review. If you need more than six months to develop and validate appropriate assessment tools for the proposed evaluation, you must apply under Measurement to support your work -- or your application will be deemed nonresponsive and will not be forwarded for scientific peer review.

Under this project type, for example, researchers have evaluated whether the intervention Check and Connect leads to improved engagement, school completion, and academic outcomes among high school learners at risk for dropping out. Others have looked at whether Enhanced Milieu Teaching is an effective way to remedy language delays and prevent secondary impairments for young children with language delays. And finally, others have looked at if the positive impacts of the Kindergarten Family Checkup program are sustained over time.

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Again, under Initial Efficacy and Follow-up, there are two types of studies you can propose. The first is a newer initial efficacy study in which you can evaluate whether or not a fully developed intervention that has not been rigorously evaluated previously has a beneficial impact on education outcomes. You can you also propose a Follow-Up study which focuses on gathering

follow-up data to examine the longer-term impacts of a previously implemented efficacious intervention.

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Please note that there are several key features of Initial Efficacy studies to keep in mind. First, the purpose of these projects is to assess the impact of an intervention, program, or policy on education outcomes. In other words, one of your research questions must include a test of the causal impact of the education policy, program or practice. Second, you must include as part of your research plan a cost analysis and a cost-effectiveness analysis or provide a rationale for why a cost-effectiveness analysis cannot be done.

Third, we recommend that you include as part of your research plan to consider and study factors that may influence intervention implementation. Including what might be needed to implement under routine conditions. In addition, as part of your research plan, we recommend that you explore potential mediators and moderators of the impact of the intervention. And finally, if the developer is involved in the evaluation of the intervention, we strongly recommend having something in place to safeguard against potential conflicts of interest.

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Finally, measurement support the development and validation of new assessments or the refinement and validation of existing assessments for specific purposes, contexts, and populations. A Measurement project will result in a valid assessment that can be used by education personnel or researchers to improve learner outcomes for specific populations and contexts. Measurement projects can also address purposes such as measuring educator knowledge, skills, and abilities, guiding instruction, improving educator practice, evaluating educator job performance, or assessing the effectiveness of schools or school systems.

If a significant amount of exploratory research is needed to establish an assessment framework before developing and validating your proposed assessment tool, you must apply under Exploration, or your project will be deemed nonresponsive and will not be forwarded for review. As an example of the kinds of things people have proposed under this project type, researchers have developed and/or validated a screening and progress monitoring assessment of challenging behavior for preschoolers. Others have looked at an assessment of community and school support needs. And finally, another research team looked at a technology delivered assessment of learners' knowledge of probabilistic reasoning.

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The assessment is the primary product of Measurement projects. You may develop assessments of other project types, but it's not the main focus of the study. For instance, you may be developing a measure as part of a Development and Innovation project, but in that case, the

assessment would not be the primary focus . Under this project type, the assessment development and validation is the primary focus. You must include a plan to determine the costs to implement and score the assessment as well. Also, include a description of the assessment framework in the significance section of your proposal.

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To get you thinking about the different types of research, let's discuss under which project type these research ideas might fit best. First, what project type would be the best fit for an evaluation of an intervention that shows promising outcomes using a randomized control trial? If you thought Initial Efficacy and Follow-up, you're correct. In this case, the applicant would also need to attend to the budget and duration maximums for an Initial Efficacy project.

What project type would be the best fit for an investigation of factors associated with positive post-high school outcomes using an existing data set? If you thought Exploration, you're correct. In this case, the applicant would also need to attend to budget and duration maximums for a Secondary Data Analysis project.

What project type would be the best fit for a study to determine whether the impacts of a preschool behavior intervention are sustained through kindergarten? If you thought Initial Efficacy and Follow-up, you are correct. In this case, the applicant would also need to attend to budget and duration maximums for a Follow-up project.

Finally, what project type would be the best fit for a project to develop and pilot test a novel game to improve learner's scientific reasoning skills? If you thought Development and Innovation, you're correct.

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Hi, everyone. This is Sarah Brasiel from the National Center for Special Education Research, and I'm now going to talk about the project narrative which is a big portion of your actual proposal.

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There are four required sections of the narrative. The significance section, research plan, personnel, and resources. Reviewers give a score to each of these individuals sections in addition to providing an overall score.

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The requirements vary by topic and project type so be sure to read the requirements very carefully in the request for applications. The requirements are the minimum necessary for an

application to be sent forward for scientific peer-review. We also specify recommendations in the RFAs and strongly encourage you to follow the recommendations as well. As these will make your proposal stronger and more competitive. Also, keep in mind that all the critical content should be in your narrative. But you can support it about additional information in the appendices.

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The Significance Section describes your overall project. It should describe your research question or questions to be answered and the intervention or assessment that you plan to develop and or evaluate if that's applicable. You need to provide a compelling rationale for the project which includes a theoretical justification or your Theory of Change. Which I'll talk more about in a few minutes. And then, you'll also need to include an empirical justification or a description of the evidence that supports your Theory of Change. And then lastly, you should include a practical justification.

So why should we care about your project? What are the real-world implications? And why would expected results matter in education practice or policy?

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When you're writing the Significance Section, don't assume that the reviewers know the significance of your work. Some of the reviewers might not be in your field. So you need to convince them why your particular question is important. You shouldn't quote parts of the RFA pertaining to general importance, but we do list considerations and research gaps under the particular topic areas. And if you're addressing one of these considerations or a research gap, you can emphasize this in your application. These are things you should consider, but you don't get extra points if your application addresses them.

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Now I want to discuss two key pitfalls when it comes to the Significance Section. The first is related to a lack of clarity in your description of the factors if you're proposing an exploration project or a lack of clarity in your description of the intervention if you're proposing a development or evaluation grant. A common comment from reviewers is that it is not clear what the factors are, and whether they are actually under the control of the education system. So make it clear which factors you're proposing to study, and how they're actually under the control of the education system. If you're doing intervention related work, you should be very clear about what exactly your intervention is. A clear description of an intervention should also include details about how it will be implemented in addition to what the actual content of the intervention is.

So you can describe its implementation in terms of duration and implementers, et cetera, but if we don't know what content is really being taught or what's going to happen, then the

significance of its development or evaluation will not be clear to the reviewers. You also need to be clear about how the intervention will be implemented with fidelity. For example, by showing that implementers will actually have the time and resources to be able to implement with fidelity. And you also want to justify why your intervention will have a strong enough impact. For example by showing that the duration and intensity are sufficient to bring about the proposed changes. And if applicable, describing pilot data to support the interventions promise for improving education outcomes. If these things aren't clear, then the reviews may have trouble following the rest of your proposal. So it's really important to clearly describe your factors and/or your intervention.

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The second pitfall is related to the Theory of Change. If you're applying for an Exploration project, and you don't indicate why a factor is expected to be related to education outcomes, then that could be problematic. The reviewers need to know the theory behind why you think that a factor is related to an outcome. And if you're applying for Development and , Innovation or Initial Efficacy grants, they need to know why the proposed intervention should improve outcomes versus current practice. And then if you're applying for a measurement project, you need to clearly specify how an assessment will measure a specific factor or outcome, and how you will link this to education outcomes.

So I do want to stress that all these elements of a Theory of change that I'm talking about now should be described in your narrative, but a graphic can be helpful as well. In your Theory of Change, you should make it clear that you -- what you expect to happen, in what order, and why something is expected to be related to an education outcome. This could be represented in a visual graphic but discussing why it should improve outcomes related to current practice would be something that you should describe in more detail in the narrative.

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Your Theory of Change should describe how an intervention addresses the need that you are targeting and why it should work. This would be included in the narrative. So be clear about what the intervention targets. For instance, learner or teacher knowledge and skills. And how this addresses the need that you specified. Theory of Change should also describe the instructional techniques or practices and why they are appropriate for the population, and the change you intend to bring about as well as a description of how the intervention will be delivered. It's also important to be clear about which aspects are different from the counterfactual, and what the interventions core ingredients are. In other words which specific aspects of your intervention do you expect will drive the change in education outcomes.

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Here we have an example of a simple Theory of Change graphic that goes through the process of what is expected to change and why. In a simple Theory of Change, you should include the target population the main components of the intervention, the underlying processes targeted by the intervention that may explain any changes in your proximal and distal outcomes of interest. And then also your outcomes of interest. This is just an example; you can elaborate on this depending on your intervention and research questions. For example, you may want to include factors that affect the relationship between the factor or intervention of interest and education outcomes in your Theory of Change as well.

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What you should not do in your Theory of Change is overwhelm the reader with a very confusing graphic. We suggest that you do not use color as a key variable in your graphic because a lot of reviewers will review proposals in black and white.

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This is an example of what with you shouldn't do when comes to your Theory of Change graphic. This would overwhelm our reader, and it's just too confusing. It hurts to look at it. No one would actually want to read let alone understand this. So don't do this.

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Moving onto the next section, the research plan. In the research plan, you will describe the actual work that you intend to do. You should be very specific about your research questions and depending on your project type, you want to describe how you intend to examine relationships between factors and education outcomes, develop and pilot test the intervention, evaluate the efficacy or effectiveness of an intervention or develop and/or validate an assessment. It's important to ensure that the application flows across all sections of the narrative. In other words, your research plan should be aligned to your Significance Section, and it helps to have a step-by-step process so that it's really clear to the reviewers what you plan on doing.

For example, if you're proposing to develop an intervention, the process for iteratively developing it and refining each aspect of it, including collecting and using feedback data, should be really clear. And a timeline is strongly recommended. In fact, if you don't include a detailed timeline in your application, and your application is recommended for funding, your program officer will likely ask you for a timeline. So it's important to go ahead and include this in the application for the reviewers as well.

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In the Research Plan, you should provide a description of the setting where you'll be doing the research. For example the size and characteristics of the intervention setting, classrooms, school,

and/or surrounding community as well as the population that you're addressing in your sample. In describing your sample, you should define your sample and discuss the sampling procedures, including justification for any exclusion or inclusion criteria. You should specify the sample size and demonstrate that it will provide enough power to address each of your research questions. You should also address attrition, included how likely it will be, and any strategies that you intend to use to prevent it in the course of the study.

And lastly, you should discuss generalizability including how the setting that you're working in will affect the generalizability of your findings, and the extent to which your sample and sampling procedures will allow you to draw inferences for a population you're addressing. If you're using the secondary data, you should describe the setting, population, and sample for the data sets that you plan to use.

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Another thing that you need to describe in your research plan is your outcome measures, including both proximal and distal outcome measures. You should include outcome measures that are sensitive to the changes and performance that the intervention is intended to bring about as well as measures that are not strictly aligned with the intervention and could therefore capture changes in the control or comparison group. So your measures should be aligned with your Theory of Change. For interventions that are designed to directly change the teaching and learning environment, and in doing so, indirectly affect education outcomes, you should include measures of learners' education outcomes as well as measures of the intermediate outcomes like teacher behaviors that are hypothesized to be directly linked to the intervention. And you should also include measures that are of practical interest to learners, parents, and educators such as grades, attendance, tardiness, dropout rates, disciplinary actions, or graduation rates. It's important to justify the use of every measure. So if you have measures that are not actually linked to your research questions, this will likely be questioned by the reviewers.

In your description of your measures, you should also discuss the psychometric properties of each measure, including the reliability and validity. And then finally considering the issue of multiple comparisons when you're deciding which measure to use and how many.

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As I mentioned you should specify the purpose of all your measures, including non outcome or process measures. For instance, for a development project, you should specify which measures you will use to inform the iterative development process. These could be things like qualitative data from focus groups or rating skills on the usability of an intervention by an end user. They could also be preliminary outcomes, but you'll have to explain how that measure will then feed back into the iterative process of development. So if you're proposing a Development and Innovation, or Initial Efficacy project, you'll also need to include measures to assess the fidelity

of the implementation of the intervention. And also note that if the intervention includes a training component, you should identify measures to assess the fidelity of the training.

So for these measures, you should describe how they'll capture the core components of the intervention and will allow you to determine whether the intervention is operating as you intended. You should also identify measures of comparison group practices. So you can compare the treatment and comparison groups to make sure that the comparison group doesn't receive key elements of the intervention, and that the two groups are getting substantially different services. You want to measure practices that could be happening in either group, but that you hope or assume are only present in the intervention group. And then depending on the project type you proposed; you might also need to include measures of feasibility. This is any type of feedback provided by the users of the intervention such as teachers, but whether the intervention is feasible to use, and whether it can be implemented within the constraints of an education setting. You could use a variety of measures to assess feasibility.

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The Institute encourages you to integrate qualitative and quantitative methods throughout the entire research process from planning and inquiry to instrumentation design, data collection and analysis, and dissemination. The use of qualitative measures is particularly common for the purpose of iteratively developing an intervention or an assessment. So for any qualitative data collection, you should describe the items to be used, the validity and procedures for collecting and coding, and for monitoring and maintaining interrater reliability. These are similar to what you would do for quantitative data as well. And you should also describe how the qualitative measures will be used in the analysis, and if applicable, the mechanisms for quantifying the data.

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For measurement projects specifically, you'll need to provide additional detail depending on the type of measurement project you propose. If you propose to develop alternate forms of a measure, you should describe horizontal equating or the procedures for establishing the equivalency of the forms. And if the proposed assessment is used to measure growth, you should also describe vertical equating or the procedures for establishing a developmental scale.

If you're developing or refining an assessment, you should also discuss your plans for establishing the fairness of the test for all members of the intended population. And then also remember that the assessment needs to be linked to education outcomes.

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Your analyses will depend on your design, but in general, you should describe all planned analyses and describe how these analyses will address each of your research questions. And for

the qualitative data you, you also need to be sure to discuss how you will analyze it. For example, coding for common themes, and also how it will address your research questions.

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For your analysis of quantitative data, you should present your model for each analysis. You should also discuss how you plan to address any clustering or nesting, and how you'll account for missing data. For causal impact studies, you should also discuss a plan for checking for baseline equivalence on your outcomes of interest across the intervention and control groups, as well as over and differential attrition. Then you should also propose to conduct sensitivity tests to assess the influence of key procedural or analytical decision on the results.

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You must provide a plan to analyze the costs of the intervention or assessment you are studying for the Development and Innovation, Initial Efficacy and Follow Up, and Measurement project types. Initial Efficacy and Follow-Up projects must also include a plan for a cost-effectiveness analysis or a rationale for why a cost-effectiveness analysis cannot be done.

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Now I'm going to move onto the third section of the Project Narrative, the Personnel Section. The purpose of this section is to name each person on your team and describe their relevant expertise, their responsibilities, and their time commitment. You'll want to include personnel of both the primary and secondary institutions as well as any consultants.

The purpose of this section is to show that your team has the appropriate qualifications to carry out every aspect of the proposed work. This includes the appropriate methodological and content related expertise, as well as project management skills and experience disseminating to a variety of audiences.

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Demonstrate that each team member has an appropriate level of effort given their expertise and project responsibilities. You also need to provide CVs for each member of the research team. It's also advisable to make the CVs specific to the project rather than submitting generic CVs. And we do recommend that you use the science CV to create IES bio sketches.

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Here are some strategies for writing the Personnel Section if you are a seasoned researcher. First, it will be important to highlight that you have enough time to devote to the project. For instance, reviewers are not going to want to see a PI who has only 2% time on the project. It's also

important to adequately describe your credentials because some of the reviewers may not do research in your area and may not be aware of the extent of your expertise.

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If you, the PI, are a junior or early career researcher, the strategies are different. You'll need to show that you have adequate expertise to do the work and to manage the project. So if relevant, you should show how this work is the continuation of the work that you did in graduate school or during a post-doctoral fellowship. This will help establish your expertise in this area. And then you'll also want to talk about any experiences that you've had that show you have the appropriate project management skills, and then you should also highlight your publication record as evidence that you have the appropriate expertise in the particular content area.

Generally, it's advisable to have a senior researcher on your team. Reviewers are typically more comfortable if you have a senior person to turn to for advice as either a co-PI or a co-investigator. Even as a consultant or as an advisory board of senior researchers, you just want to make sure to include enough of their time on the grant so that it's taken seriously. So again, if you have someone for 2% time, and that's the person whom you're going to for advice, it doesn't really look like you're going to get their active engagement in the project.

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The final section of the Project Narrative is the Resources Section. The purpose of this section is to describe how you have the institutional capacity to complete a project of the proposed size and complexity. As well as your access to the resources at the primary and secondary institutions that you need to successfully complete the project. In this section, you should also describe your plan for acquiring any resources that are not currently accessible. Will require significant expenditures and/or are necessary for the completion of the project. So these could include things like equipment, test materials, curriculum, or training materials.

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We also recommend that you describe any resources that you have that will help you carry out your plan to disseminate the results of the project. More specifically, you should note any specific team members, offices, or organizations that you expect will take part in your dissemination plans, as well as their specific role in the dissemination. And then your actual dissemination plan should be described in Appendix A of your application. And I'll say more on that within the next few slides.

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In the Resources Section, you also want to be sure to describe your access to the institutions who will participate in the project, and the education settings in which the research will take place.

Then in Appendix E, you can include letters of agreement from each of the institutions involved or from the State, school districts, or schools. You'll want to be sure to show that each of these partners understands their role. So the letter should be specific and show that your partners know what they will be asked to do, and how much time is involved. If you plan to use data from another source. Whether it's school records or an existing data set, you want to show that you have access to this data.

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Dissemination of federally funded research is important to IES. We want to emphasize dissemination as something to think about at the time of application, not after you've completed your study. To ensure that findings from the research grant program are available to all interested audiences, IES requires all applicants to present a plan to disseminate project findings in Appendix A: Dissemination Plan of the application.

In addition, all applicants must adhere to the IES Public Access Requirements. All awardees will be required to submit their accepted peer review manuscripts to ERIC, the Department of Education's online library in order to ensure that the findings of federally funded research are available to the public. And all applicants who are seeking funding to test the causal impact of an intervention under Initial Efficacy and Follow-Up projects, must include a data management plan which specifies how the data collected with federal funds will be made available at the conclusion of the study to allow independent replication of findings and/or to explore other research questions. The data management plan also needed to include a plan for preregistering your study.

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In terms of the budget and the budget narrative or budget justification, you want to make sure that these are clear, aligned with your project narrative and are provided for the overall project as well as for each sub-award. First and foremost, you should make sure that you don't propose an amount that's over the maximum for your specified project type. Your budget should reflect both the project type as well as the scope of the work that you propose to do. In your budget justification, you should provide a rationale for equipment purchases, supplies, travel, and other related project costs for each project year. And you want to be sure to include details about the assumptions that you used to estimate certain costs.

For example for travel, you should show how you came up with the total by including the cost for the airfare, lodging per diem, et cetera. And again, you just want to ensure that everything is aligned. So you want to make sure that your Project Narrative is aligned with your budget, and your budget justification matches your actual budget.

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This table shows the required and optional appendices and what information must or should be included in each. These are described in more detail in the RFAs, but I'll discuss them briefly. As I mentioned previously, Appendix A is required for all applications and should describe your plans to disseminate the findings from the project. Appendix B is only required for resubmissions. This is a place where you would include your response to the previous reviewers' comments, or if your application is one that you considered to be new but that is similar to a previous application, you should describe why it should be considered a new application.

Appendix C is optional. And you can use it to include figures charts and tables that supplement the project narrative as well as give examples of measures to be used in the project. Appendix D is also optional and can be used for examples of materials to be used in the intervention or assessment that you're focused on. And then as I mentioned earlier you can use appendix E to provide letters of agreement from school partners and or data sources depending on what's applicable for your particular project. If you have consultants on your project, you can also include letters of agreement from each consultant in Appendix E.

And then Appendix F is required for Initial Efficacy and Follow-Up proposals, and this should include your Data Management Plan. This plan should describe the process for making the final research data from the proposed project accessible to others. The RFA describes the specific information that you should include in your data management plan as well as the resources that may be helpful in developing that plan.

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This slide includes important dates for 84.305A and 84.324A. Applications must be received at Grants.gov no later than August 29, 2019, at 11:59 and 59 seconds p.m. eastern time. Letters of intent are due on July 11, 2019, and the application package will be posted on Grants.gov on July 11th as well. The possible start dates for the award are between July 1, 2020, and September 1, 2020. We encourage you to submit a letter of intent if you're interested in applying, however, these are optional. So if you don't submit a letter, you can still submit an application. If you choose not to submit a letter or missed the deadline, we do recommend you email the relevant program officer with a brief description of your research and let them know that you intend to apply. As for the application deadlines, we do not accept late applications so be sure to submit early. And I don't mean earlier as in the day that it's due. I mean days earlier because it has to go through multiple layers. It has to go through Grants.gov and get confirmed there. And then go through the Department of Education. And if there is a technical problem along the way, you'll need enough time to find the problem and then resubmit it.

You'll want to make sure that you get confirmation that your application was received at each step. And again, if it's one second too late, then it won't be sent forward for a review. Another thing to note is that you should talk to your sponsored research office ahead of time and tell them to expect your proposal so they can make time for it. Be sure to work closely with them and make sure you see the final versions of all the documents to be submitted. For example, you

want to make sure that any last-minute adjustments to the budget don't put you over the budget maximum.

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All applications must be submitted electronically through the Grants.gov website. The IES Submission Guide which we referenced earlier provides additional guidance for you to submit your application to grants.gov.

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IES uses a peer-review process for the review of grant applications. First applications are reviewed for compliance and responsiveness to the RFA. Applications that are compliant and responsive are assigned to a review panel. Two or three-panel members conduct a primary review of each application. There is a triage process that only the most competitive applications are reviewed by full panel.

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You can find more about our peer reviewers by going to our IES website where you can find information on the Office of Science Standards and Review page that includes a list of prior peer reviewers.

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All applicants will receive email notification that the following information is available via the Applicant Notification System, ANS. Status of the award, reviewer summary statements. If you are not granted an award the first time, plan on resubmitting and talk to your program officer.

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There are a few things I want to leave you with before we finish this webinar. First, read the requests for applications. There is a lot of detail and important detail in the RFA. Attend to the limits for budgets and project duration. And make sure to attend to the required content and appendices as well as the recommendations to improve your application. IES has spent a great deal of time over the years making the RFA a user-friendly guide to developing a high-quality application.

So be sure you know these requirements and recommendations for the topic and project type to which you are submitting. Browse through the posted abstracts of our funded grants on our website. Our abstracts are fairly detailed so they will give you a good sense of the quality and type of grant that may typically get funded by IES. IES will also post on-demand webinars. Webinars that you can access at your convenience covering a wide range of topics. Including this

grant writing workshop. Or webinars about specific funding competitions. Those will be posted in the coming weeks.

We also have our Resources for Researches page with grant information for you. Including methodological resources to assist in preparing an IES research grant application. Videos from past IES training institutes, information about available data sets and tools among other things.

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Despite all of the great resources I just described, program officers really are your best resource, so please contact us. Discuss your research idea with the program officer. Email a synopsis and schedule time for a call. Email short questions. You'll hear from us if you submit a letter of intent. We will review draft applications given we receive drafts with sufficient time. We're available for discussion after we receive your reviews. We want to hear from you. It's always a great idea to reach out to us.

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Here is a link to the Funding Opportunities page where you can access the RFAs and also our email addresses. Thank you all for listening today and good luck with the grant writing.