

NCSER Webinar
Education Research Grants Program and
Special Education Research Grants Program Workshop

Kim Sprague:

This is Kim Sprague from the National Center for Special Education Research and the presenters are Christina Chhin from the National Center for Education Research and Amy Sussman from the National Center for Special Education Research. If you have questions throughout the webinar, please send them in the Q&A box and reply to all and we'll answer some as we're going along and some at the end of the webinar. Alright, Christina will start the webinar.

Christina Chhin:

Thanks, Kim. As Kim said, I'm Christina Chhin from the National Center for Education Research. I'm the program officer for the Mathematics and Science Education Research Grants Program. Thank you for joining us this morning. This will be a pretty intensive workshop with a lot of information being shared, so if you have questions, please use the text/chat function and we'll try to answer the questions as best we can. If we do get a lot of questions, we may not get to them all, but we'll certainly try our best to keep up.

So the purpose of this grant-writing workshop is to provide you with some instruction and advice on how you can write a successful, competitive application to our main research grants program at IES. In particular, we're going to be focusing on two grants program, the Education Research Grants Program, CFDA-84.305A, and the Special Education Research Grants Program, CFDA-84.324A.

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 also be contacting people to line up your research team. Grant writing can 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 for you to try 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 didn't get funded the first time around, you'll learn some new information about ways in which you can improve your application.

To begin with, I wanted to provide an overview of IES, particularly for folks who may not be as familiar with IES or are first-time applicants. IES is the independent research arm of the U.S. Department of Education. We are non-partisan by law, so we are not involved in the policymaking process. We are charged with providing rigorous and relevant research to ground education practice and policy. We also are charged with sharing this information broadly. So, we want to disseminate what works, but we also want to understand what doesn't work and why, so that we can help to improve education outcomes for all students, in particular, for students who are risk of failure.

Within IES, we have four national centers. We have the National Center for Education Statistics (NCES). Within NCES, you may be familiar with the NAEP assessment, the National Assessment of Educational Progress. Under NCES, you'll also find many large, national longitudinal datasets including the Early Childhood Longitudinal Study, and Educational

Longitudinal Study, just to name a couple of examples. Under the National Center for Education Evaluation and Regional Assistance (NCEE), you will find the What Works Clearinghouse (WWC), the Regional Educational Labs, and you'll also find the large scale evaluations that have been mandated by Congress.

Next, we have highlighted in blue, the Education Research Centers. I am a part of the National Center for Education Research and Amy here, is a part of the National Center for Special Education Research. In these two centers is where you'll find the Discretionary Grants Research Programs. It's important to note that under the IES structure, we have a Standards and Review office that handles the oversight, review and processing of grant applications. They, as you can see in this diagram here, are separate from the national centers. Because they are separate, program officers within NCER and NCSER can actually provide quite a lot of technical assistance to you as you prepare your grant applications.

For more information about the funding opportunities available within NCER and NCSER, you can find them on our website. Here is a screen shot of the funding opportunities webpage. Just to recap, this webinar is going to be focus on the main research grants programs: the Education Research Grants Program, and the Special Education Research Grant Program. These two grant programs are pretty similar in that they are organized by research topic and research goal.

Before we go into the details in the RFA in terms of requirements for topics and goals, I wanted to highlight some changes in this year's RFA. In particular, for the Education Research Grant's RFA, CFDA-84.305A, we have reintroduced Goal 2 – Development and Innovation. Last year, we took a hiatus and did not compete Goal 2. This year, we are competing it again. A second change is in the Improving Education Systems on Policy Organization Management topic. This was a pretty large topic that encompassed quite diverse areas, so this year we split that topic area into two: (1) Improving Education Systems, and (2) Education Leadership. We also have three special topics that we are being newly competed this year. We have an Arts in Education topic, a Career and Technical Education topic, and a Systemic Approach to Educating Highly Mobile Students topic. And finally, we're introducing a new SciENcv format you can use to create your bio-sketch for key personnel that are on the project.

Kim Sprague:

We have a relevant question, so I'm going to interrupt Christina.

Christina Chhin:

All right, so this is a question about SciENcv. The SciENcv format is actually modeled after the NIH and NSF format. We are introducing SciENcv this year because we think it's useful to have a common format across agencies and we know that many of our applicants submit applications to multiple funding opportunities and agencies. So, many of you may already be familiar with the SciENcv format.

Okay and we also have some changes under the Special Ed Program. Amy, did you want to discuss the changes under NCSER?

Amy Sussman:

Yes. The biggest change is that across all topics and goals, we have a focus this year on teachers and other instructional personnel. One exception is the early intervention topic, which extends to other services providers as well as teachers and other instructional personnel. And for exploration projects, you can now study pre-service teachers across all topics, which had not been the case previously. As background, if you're wondering why we have this focus, it's because we have limited funding this year. We had some technical working groups and public comments on areas that are important and need more work, and focusing on teacher instructional quality came up as a big factor. So, we're trying to focus on that topic without cutting out any of our topics or goals. We wanted to keep that consistent. We expect to go back to the regular RFA next year. We do not intend to keep this focus next year, though everything depends on funding.

Another change is that the maximum amount of funding that can be requested under each research goal has been slightly reduced. I believe it now matches the NCER numbers. There has also been new language added for applicants who are proposing SMART designs under the efficacy and replication and effectiveness goals. This is a specific kind of design to develop and evaluate adaptive treatments. And just like NCER, you have the option of using the SciENCv to create your bio sketch.

Christina Chhin:

So, before I go into the grant writing text part of the webinar, I just want to pause here and just catch up to see if there are any other questions.

Amy Sussman:

Okay, we have a question about where the review is done at the level of topics. Do they all go to the same topic when reviewed? We have standing panels. We're going to cover the review process a little bit later, but we have standing panels that are based on topics yet they're not in direct correspondence to the topics in the RFA. They're a little bit more broad and they might include both relevant topics from the NCER and NCSER RFAs. So, generally the same topics are reviewed together, but not necessarily specific to an RFA. The same group of panelists review the proposals from the same broad topic.

Christina Chhin:

So I'm going to now talk about some good, general tips in terms of grant writing. What I typically tell applicants is to think of their proposal as a persuasive essay because you really want to sell your research idea. You want to be able to show that you are the best person to do the research proposed and you want to be able to build good will 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.

In the opening paragraphs of your project narrative, you should set the scene for the readers and reviewers by identifying why 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 do not want to lose readers right off because they don't understand what you're doing. So, the opening paragraph is critical in terms of hooking the reviewers, and leading them to believe what you're doing is important.

To that end, your statement of purpose should be part of the opening paragraph. Your statement of purpose should be short and attention grabbing. We recommend that you have your friends, family, and other researchers take a look at your opening statement and provide feedback. Similarly, we see the theory change as crucial to a successful application. Amy will be talking in more detail about what goes into a theory of change later, but I'm providing a brief overview here.

The theory of change is the model underlining your research and it serves as a roadmap for how you will be describing the work that you'll be doing in your project. It can be constantly evolving in that depending upon 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 use terms like logic models or logical framework, and we see those as pretty similar in terms of what we're referring here as theory of change. So, these terms may be used interchangeably.

Your theory of change should also be reflected in your research plan such that you need to specify exactly what it is you're looking to explore, develop, validate or test. In terms of the outcomes of the study, you also want to be able to specify what it is you're measuring and who you're targeting. For instance, what measures will you include for those in the treatment versus control condition.

Finally, you should also share your framework and statement of purpose with your program officer. Many of you may have already submitted a letter of intent in which you provided your statement of purpose. If so, that is great. By now, you should have already received some feedback from your program officer in regards to your letter of intent. If you have not contacted your program officer yet, we highly recommend that you do so. Program officers are here to help you answer questions and provide feedback on your proposal.

We also can't reiterate enough the importance of having a very 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 the program or policy that you're looking at. If they're looking to develop an intervention, it is important to specify how you're going to be developing, revising and testing components of the intervention. You want to clearly specify your data analysis plan. You don't want to just have a statement saying you're going to be conducting HLM analyses and leave it at that. We want you to provide some detail about how you're going to be analyzing that data and include formulas as appropriate.

Similarly, try to refrain from using a lot of jargon. Our review panels are pretty diverse in their areas of expertise, so don't take for granted that they know what you're talking about. So, provide some context and background. And also, make sure you're using correct grammar and that everything's spelled correctly. All of that goes a long way because reviewers get grumpy when they can't understand what you're saying because your sentence just doesn't make sense. So, give the reviewers a break and make sure your writing is as clear as possible. We also have

on our website, several Resources for Researchers that you might find helpful. Here are links including links to previous webinars.

I'm going to pause now to see if there are questions before we go into the next section. All right, no questions for now.

Next, I'm going to go into some general requirements that we have in the RFA for the two primary Education Research Grants Program. So, under both at the Education Research and Special Education Research Grants Program, you must measure student education outcomes in your study. The project must be also relevant to education in the United States and you must address authentic education settings. If you have questions about what we mean by an authentic 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 I'm sure they would be happy to provide some more detail. As mentioned previously, all proposals must also specify one research topic and one research goal.

In terms of student outcomes, I have a table here that outlines the specific student outcomes that you can address and this is broken out by grade level. So, if you're proposing a project that's targeting pre-kindergarten students, then your outcome should focus on school readiness, including pre-reading; language vocabulary; early math and science; or, social behavioral competencies. If you're targeting students in grades K to 12, the outcomes that you may look at include learning; achievement; higher order thinking; reading, writing, math and science; progression through the education system; social skills and attitudes; and, behavior supports for learning in school.

If you're looking to address post-secondary students, the outcome there should focus on access to, persistence, and progression through and completion of post-secondary education. If you're looking to focus on developmental education programs at the post-secondary level, additional outcomes may include achievement specifically in reading and writing, English language proficiency and mathematics. For our adult education population, the focus there should be on student achievement in reading, writing, and mathematics. You can also address outcomes related to access, persistence, and progression through completion of adult education programs.

This next slide highlights the special education outcomes of interests, which Amy will briefly go over.

Amy Sussman:

Okay. This is pretty straightforward. For birth through age five – so that's infants, toddlers and preschoolers – we're looking at developmental outcomes and school readiness. That's developmental outcomes across a number of areas: socio-emotional, communicative, cognitive, language, physical development. And for the remaining ages, kindergarten through high school, we're looking at achievement in the core academic content areas; behaviors that support learning in an academic context; and functional outcomes that improve educational results and transitions to employment, independent living, or post-secondary education. Those last areas are mainly for those in secondary school transitioning to independent living or employment. And I just want to

note that you can look at outcomes after they've finished high school, but the actual intervention must be something that occurs earlier, in secondary school.

Christina Chhin:

When preparing a grant application, the first and most important thing to do is read the RFA. Even if you are resubmitting an application and you're pretty familiar with the requirements of the Education Research and Special Education Research Grants Program, there are some changes and we just want to make sure that you are aware of those changes. In addition, we think it's important for your co-PI, statistician, methodologist or developers, pretty much anyone else who's participating in the preparation of your application or who are involved in the project read the RFA. In addition, sponsor project officer should read the RFA, since, for most institutions and organizations, they are the ones who will be submitting the application for you.

Importantly, please note that the deadline for applications is August 4, 2016 at 4:30 p.m. Eastern time. If you are even one second late, your application will not be reviewed. So, please get your application in early and make sure you tell your sponsor project officer to get the application in as early as possible. If possible, try to submit the application a few days before hand in case there are any errors in processing your application. That way, you have an opportunity to correct the errors and resubmit the application.

All right, before I go on to other topics, are there any questions?

Amy Sussman:

Well, there was one. I was just answering it in writing, but I think it would be good to say it out loud. Is it too late to apply if you have not yet submitted a letter of intent? Well, it's too late to submit the letter of intent, but you can still apply. It's not required to submit a letter of intent, but I would advise you to send a brief description of your intended project to the relevant program officer just to let them know and also to get some basic feedback to make sure it actually fits the topic and goal that you plan to apply to.

Christina Chhin:

So, on to the discussion of the research topic. As a reminder, to submit to the Education Research or Special Education Research Grants Program, you have to specific a topic and a goal. So, every application must identify a research topic area. You will indicate your topic area 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.

Listed here are our current research topics under the Education Research and Special Education Research grants program. Just to reiterate and emphasize again, under each of the topic areas, you must address a student education outcome. Please note that the grade range that you can focus on may vary by topic, so make sure you're addressing the appropriate grade range for the topic you are applying under. We understand that sometimes your project may fit under more than one topic area, so we have some advice about how you can decide between overlapping topic areas.

Under 305A, the Education Research Grants Program, we have a table here that outlines the grade range by topics. So, if you're looking to focus on students at the pre-kindergarten level, there are three topics that would be relevant. They include the Early Learning Programs and Policies, Cognition and Student Learning, and Education Technology. Pretty much the remainder of the topic areas focus specifically on students in grades K to 12. Only under the Postsecondary and Adult Education topic will you be able to study sub-baccalaureate or baccalaureate students.

Similarly, under Special Ed, the only topic area in which you can focus on infant, toddlers, and pre-schools is in Early Intervention and Early Learning in Special Ed. All the other topic areas must address students in K to 12.

Amy Sussman:

There's a relevant question here: For the NCER competition, focusing on K through 12, can you measure a post-secondary outcome to see what the intervention was doing in K through 12. So, can you follow them?

Christina Chhin:

Probably. For instance, if you're looking to measure the impact of a math intervention that started in high school and see how that relates to outcomes in post-secondary, that would probably be fine. To be sure, I would recommend talking with the relevant program officers to make sure.

Okay, so choosing among overlapping topics -- so what do you do when your project can actually fit under two, three or four different topic areas? What we suggest is you look at the literature that you're citing in your proposal. Is it citing more research in the technology area than the mathematics area? 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 may be something to consider. Also, think about the specific population of students or teachers that you're targeting. For instance, if your intervention or your research is including English learners, think about whether English learners are the main focus of your research or if they're just one of the sub-groups of students that you're targeting.

If you continue to have questions about which topic you should apply to, please contact your program officer. Any questions?

Amy Sussman:

I think we have -- we are caught with questions except I just wanted to reiterate something that a number of you have been asking, which is whether or not you're going to have access to the webinar afterward. We will be posting the slides soon on our website and there will be a transcript in a few weeks added to it. You won't get the actual recording of it, but you'll get the transcript of what we've said.

Kim Sprague:

And you should have received the webinar slides if you're registered this morning via email from our contractor.

Amy Sussman:

Yeah, if you check your email, you probably should have gotten the actual slides already. If you registered afterward, you might not have, but most of you should have received it already if you look in your inbox.

Christina Chhin:

Now, we're going to go on to the Goals. As with the Topic, you also need to specify a Goal. The specific Goal of your application should be identified on the SF-424 form under item 4b, and you also want to also specify that on your abstract and research narrative. So, which topic and goal best fits your project? This is actually a common question we get, and the program officers can help you through this process if you have any questions or concerns about which combination is the best option.

Now, I'm going to go over some detail about the specific goals. Under both NCER and NCSER, we're competing five goals: Exploration is Goal 1; Goal 2 is Development and Innovation; Goal 3 is Efficacy and Replication; Goal 4 is Effectiveness; and, Goal 5 is Measurement.

Here is a general table that provides a breakdown of the maximum budget and maximum years that can be requested for each Goal.

For your information, we also have a figure here that shows the distribution of funded grants by Goal under the Education Research Grants program. You'll see that the majority of the grants that we have funded have focused on Goal 2 - Development and Innovation. We have also funded a good amount of Goal 3 - Efficacy and Replication, but that's an area that we want to continue to see an increase in.

In this next slide that shows the distribution of funded grant by Goal under the Special Education Research Grants program, we see a slightly different picture. The majority of the grants NCSER have funded have focused on Goal 3 - Efficacy and replication, and there is almost a one-to-one correspondence between Goal 2 and Goal 3.

In terms of the Goal requirements, please carefully review the requirements and recommendations outlined in the RFA. In the RFA, we spell out the specific requirements, which is the bare minimum that you should include in your grant application in order to be considered responsive and sent forward for review. However, the RFA also outlines some strong recommendations that we suggest you include or address so that you have a stronger, more competitive application. Importantly, I also want to note that all applications must include a dissemination of plan. In previous years, we have had people forget to include that information.

If you're looking to do a Goal 1- Exploration project, one of the key features is an explanation of the malleable factors that you will be focusing on. These malleable factors should be and must be under the control, or can be changed by, the education system.

Some examples of malleable factors include students' behaviors and skills. You can be looking at malleable factors such as teacher practices or teacher credentials. You could look at school size, climate, or organization. You can examine specific education interventions which could include curricula, instructional approaches, programs, or policies.

Under Goal 2 - Development and Innovation, the focus is on the iterative development process. To that end, you really want to highlight the features of the intervention that you'll be developing and revising. You want to identify a well specified theory of change. You want to provide sufficient information about the data that you'll be collecting regarding usability and feasibility. You also want to be measuring fidelity and you also want to include a pilot study in which you would be measuring student outcomes to see how promising the newly developed or revised intervention is in terms of helping to improve student learning.

For folks who are looking to do efficacy and replication projects, under Goal 3, you are trying to assess the impact of an intervention, program, or policy on student learning. Goal 3 projects are typically implemented under ideal conditions, but you may also want to ask what might be needed to implement the intervention in the future under routine practice. You should also consider the role of the developer. If the developer is going to be involved in the efficacy study, you should have something in place of safeguard against conflicts of interest. Also, we do not require confirmatory mediator or moderator analyses as part of a Goal 3 study, but it is recommended you do so as part of your exploratory analyses.

Under Goal 4 - Effectiveness projects, we expect the researchers to implement the intervention under routine conditions. This is one of the main differences between a Goal 3 – Efficacy study. Under Goal 3 - Efficacy you can implement under ideal conditions, but under Goal 4 - Effectiveness, you must implement under routine conditions. In addition, a difference between Goal 3 and Goal 4 is that the evaluators are independent from the development or distribution of the intervention. Also under Goal 4 - Effectiveness, you must have strong evidence from a prior efficacy study in order to apply. That efficacy study does not have to have been funded by IES, but we do want you to cite evidence from a previous rigorous evaluation showing that the program had impact so that it warrants further evaluation under a Goal 4 - Effectiveness study. We do not expect a single Goal 4 - Effectiveness study to demonstrate generalizability. We expect multiple effectiveness studies to address generalizability.

Please note that the sample size of a Goal 4 study is not a key distinction from a Goal 3. Goal 4 studies could have the same number of students, teachers, or schools as a Goal 3 study. It's the independent evaluation and the implementation of the intervention under routine practice that is the main difference. Similarly, under Goal 4, we do not require confirmatory mediator or moderator analyses, but we do encourage exploratory analyses of those relations. Also, please note that for Goal 4, the cost of implementing the intervention is limited to just 25 percent of the budget.

For Goal 5 - Measurement projects, the assessment is the primary product. You may develop assessments under other goals, but it is not the main focus of the study. For instance, you may be developing a measure as part of the Goal 2 project, but in that case, the assessment would not be the primary focus of the study. Under Goal 5, the assessment development and validation is the

priority focus. You would include an assessment framework in your description and you must link the assessment to student education outcomes.

If you have questions about which Goal you should apply under, we recommend that you take a look in the RFA and in particular, look at the expected products section. We have a paragraph or two in the RFA under each Goal that describes the products that are expected at the end of the study that may help you identify where your research may best fit.

Okay, I'm going to pause here before we go to the next section. Were there other questions that we had?

Amy Sussman:

There was one about theory of change, but we're going to be covering that.

Christina Chhin:

Okay, so Amy will now take over the second part of the webinar.

Amy Sussman:

I'm going to talk about the four sections of the narrative. This is about your actual proposal writing and it will also correspond to how the reviewers will review your proposal. There are four required sections. There's a significance section, research plan, personnel, and resources. They'll each be scored as well as having an overall score when the reviewers look at your proposal.

The requirements vary by topic and goal, as Christina covered already, so read the requirements very carefully. Again, I know she mentioned this earlier, but there are requirements and recommendations. You must meet the requirements. The recommendations, we, of course, recommend that you follow those as well, but the requirements are very important. Even structural aspects of your proposal, like the number of pages, are important – it has to be 25 pages or less single spaced. If you go over, it will automatically be cut off and then we won't see all of your proposal and that will obviously hurt you. Most of the important information should be in your 25-page narrative, but you can support it with additional information in the appendices.

The significance section -- this describes your overall project. Basically, why are you asking this question? This is your research question or questions to be answered. You're going to talk about what your intervention is that you're developing or evaluating or your measure that you're evaluating. You need to provide a compelling rationale for the project which includes a theoretical justification. This would include your theory of change, or basically, how your intervention would work. And we'll talk a little bit more about this.

You will need an empirical justification. So, what evidence exists that might support your change? We will show you diagrams as examples of theory change. You would want to provide some evidence for different links in that chain so that you have some evidence that your overall theory of change will be supported. In addition, why should we care about your project? What

are the real world implications that the expected results would matter in education practice or in policy?

When you're writing this, do not assume the reviewers know the significance of your work. As Christina mentioned, some of the reviewers might not be directly in your field, so you need to convince them why your particular question is important. And don't repeat back from the RFA about general importance or even from a section that we have called 'considerations' because the reviewers have read the RFA, so they don't need a recitation of the text. You just need to convince them of how it fits the RFA requirements. I mentioned the considerations section, so I will explain. Under the topics, we have considerations -- things to consider when writing, maybe research gaps in the field. I want to make sure you understand that these are not taken into consideration by the reviewers. They are things you should consider, but you do not get extra priority points for when the reviewers are reviewing your proposal.

These are some problem areas when writing a significance section. Basically, they are related to not being clear. It's not clear exactly what your intervention is. The description might be confusing. So, they don't understand what you plan on developing or evaluating or in the case of goal one, what the actual malleable factor is; what you plan on looking at that could be manipulated in the future by the education system. Then, they're not going to understand the entire significance of your project.

Sometimes we see that it's unclear how the intervention will be implemented to fidelity. It's not clear that there will be a strong enough impact, maybe it's just too short to expect an impact. Or if you're doing an efficacy study, maybe there's not enough pilot data to support the need for an efficacy trial. And if you only describe the intervention in terms of action and how it will be implemented, not in terms of content, that won't be enough. You can tell us how long and how many hours, but if we don't know what the content is really being taught or what's really going to happen, it will not be clear to the reviewers and that will undermine your significance.

The second problem area would be the theory of change. So, if you are applying for goal one and don't indicate why a malleable factor is expected to be related to student outcomes, that would be a problem. We need to know the theory behind why you think that factor is related to an outcome. We need to know why the proposed intervention should improve outcomes versus current practice, or how an assessment will measure a specific factor or outcome. And it should describe a very clear understanding of what the research is. I do want to stress that all these elements of theory of change that we're talking about now should be in your narrative, but graphics can be helpful as well; not all of these elements would go into a graphic.

You should make it clear what is expected to happen, in what order, and why something is expected to be related to an outcome. This could all be represented in a visual graphic. But discussing why it should improve outcomes relative to current practice would be something that you would put in a narrative. I also want to make sure to emphasize, again, that we're talking about student outcomes here, but in the case of NCSER for the Special Education RFA, your primary focus outcome is actually teacher or other instruction personnel outcomes. You must also include student outcomes, so these are student outcomes that will be related to the teacher outcomes, but your main focus is going to be on the teacher outcome.

Your theory of change should describe how an intervention addresses the need; why it should work. This would be include the narrative. So, consider what the student should know or be able to do, or what the teacher should be able to do, and how this meets the need. If it includes pedagogy, it would include the technique or practices are appropriate. It should include aspect of the delivery system; how will the intervention be delivered to the student -- the teacher or the student? You would have to include which aspects are different from the counter-factual conditions. So, if you have a control group, how is the intervention different than that control group? You would want to discuss the key factors or core ingredients that are most essential. So, there might be specific aspects of your intervention that you believe are the reasons why you expect change after the intervention is implemented.

Here we have a graphic example of a simple theory of change. This is neat and clean and it goes through the process of what is expected to change what and why. So, you'll see that there is the target population. You have an intervention that's being implemented, or it could be an assessment – for a measurement goal. You would talk about the processes underlying it -- why would the intervention work? And then you would talk about outcomes. You could talk about immediate outcomes and distal outcomes, so in this case, the intermediate outcomes would be a mediators. You can elaborate on this kind of example a little bit depending on research questions. For example, you might want to add moderators into this as well.

What you should not do is overwhelm the reader with a massive amount of graphics and lots of text. In addition, don't use color as a key variable in your graphics because a lot of reviewers will print it out in black and white and review it in black and white. This is an example of what will overwhelm a reader. It's much too confusing. It hurts to even look at it and nobody would want to actually read this. So, that's an example of what not to do. Yes, that's the big X indicating what not to do. [laughs] There was a question earlier -- since we're talking about theory of change – about how it would look for a goal one. I don't know if there are specific examples. You do have to include a theory of change, but it would look different when we are talking about malleable factors as opposed to an intervention. It's not as simple as demonstrating an intervention, so it's something that you might want to share with your program officer in advance and get feedback from your program officer, depending on your specific question under goal one.

Moving on to the next section, the research plan section. Here's where you're going to describe the actual work that you intend to do. You're going to be very specific about your research question. You'll talk about the fact that you're going to develop an intervention; how you're going to develop the intervention; how you will evaluate an intervention; or develop or evaluate an assessment. You have to make certain that your research plan is aligned to your significance section. So, all your research questions should be justified in some way in the significance section. And it helps to have a step-by-step process so that it's very clear to the reviewers what you plan on doing. And a timeline is strongly recommended; in fact, if you don't include a good one and you're being considered for funding, your program officer will be sure to ask you for one. So that's very important. In this section, you're going to identify the setting, population, and sample. You identify the places you'll be doing the research. For example, elementary schools, or in the case of early intervention, it might be homes where home visitors work. You

will be identifying the population you are addressing. So, you're talking about the age group or the grade level. If you're looking at a specific population within that – say you're looking at a particular disability or English learner – you'll discuss that as well.

Then you identify the sample, and how you'll come up with a sample that will represent this population. So, you'll talk about inclusion and exclusion criteria. You'll talk about the sample size, and address issues of power for your analyses; in fact, you probably want to actually explicitly write about your power analysis. You'll talk about attrition, what you think the attrition might be and how you're going to address it. How are you going to try to minimize it? You'll talk about external validity. Can you generalize from your sample to your population or will it only be a subset of your population?

If you are using secondary data – which is common especially in goal one – you'll discuss all of these issues, identifying of the setting, population, sample. For the data sets that you will be using, you'll have to go into great detail about what data you'll be using to do your analyses. You have to specify your outcome measures. This is for both proximal and distal outcome. Some of them could be sensitive, narrow, and aligned with the intervention; however, we don't think it should be focused only on those measures. So, you can include measures that are aligned specifically with your intervention to make sure that your intervention is working, but don't only include those outcomes because those might be considered overly aligned. By overly aligned, I mean it would be measuring outcomes like knowledge and skills that were directly taught by the intervention.

So, we expect you to go beyond that – as the next bullet point points out, you should include measures of broad interests. Now, you're going to have more generalized skills. So, how would these skills (not the specific questions, not the specific content) be measured? It could be standardized assessment or another way of measuring a more general outcome that would be of interest to practitioners or policymakers, or any other stakeholder. You'll describe the reliability and validity and relevance of each measure that you use. You should really justify the use of every measure. If you have measures that are not actually linked to your research questions, this will be questioned by the panel. Why are you including these additional measures if they're not linked to your questions?

And finally, consider the issue of multiple comparisons when you're coming up with measures or how many measures to use. You want to specify the purpose of all these measures. You'll want to specify measures that feed back into the iterative development process during a goal two. So, these could be things like qualitative data for focus groups or rating scales from potential stakeholders. They could be preliminary outcomes, but you'll have to explain how that measure will then feed back into the iterative process of development. You'll want to discuss fidelity of implementation for the intervention. So, you'll want to be able to measure whether the intervention is operating as you intended. You'll want to make sure that fidelity can be addressed in your comparison group as well as intervention group because you'll want to make sure that the intervention group is actually receiving something different than the control group when you look at the results and you look at the group differences. So, you'll want to measure practices that could be in either group -- that can be measured in either group – but that you hope or assume are only present in the intervention group.

You'll also want to collect feasibility data. This is any type of feedback provided by the users of the intervention, such as the teachers or students, and they can tell you about how feasible it is. You can use a variety of measures to see whether it's feasible to actually use the intervention. For example, to ensure it's not too overwhelming for teachers to implement the intervention.

For qualitative measures, you'll want to describe how the item is used; how it's linked to the construct that you are looking at, so it would be the validity of these measures and procedures for collecting and coding. So, if you're getting qualitative data, for example, from focus groups, you'd want to be able to talk about how you plan on coding these and assuming that you are looking at reliability -- inter-reliability, how you'll be calculating inter-rated [spelled phonetically] reliability. These are really very similar to what you would do for quantitative data as well. You'd also want to talk about the items; how they're linked to construct and their procedures for collecting. But you'll also want to talk about the qualitative measures. You'll want to talk about how they might be used in the analysis, what the interpretation of your quantitative outcome. So, IES does allow mixed methods, in fact, we encourage it. But you're going to be collecting quantitative outcomes as well. And so you want to talk about how the qualitative outcomes fit into and help with the quantitative outcome.

For measurement projects specifically, there are certain things that you'll want to discuss. You'll want to discuss horizontal equating -- how you're going to create alternate forms of the measure. You'll want to talk about vertical equating if it's relevant -- if you're measuring growth over time. You'll want to talk about how you will deal with test fairness, or how you'll minimize any potential bias among a certain group, such as a gender group, or ethnicity group. If you were developing a non-student instrument, how would that be validated against student outcomes? For example, if you are developing a measure of teacher or classroom quality, this has to be directly related to the student outcomes and interests.

Your analysis depends on your design. You will describe how your analysis answers each of your research questions. For qualitative data, don't just say you're collecting it, talk about how you're going to do it. You're going to code for common themes, for example, but don't just leave it that you're collecting it.

The next slide talks about quantitative data. Here you're going to want to show your model, identify the coefficients of interests. You're can show different models for different analyses and can include different equations. You'll talk about how you might address clustering or nesting, if that is part of your methodology. You'll want to discuss how you might account for missing data, such as conducting a missing data analyses. You will discuss how you will check for equivalencies of the start of your project. For example, if you're doing an efficacy trial and you have two groups, you'll want to talk about how you're going to make sure they are equivalent on the main outcomes of interests at the start and you'll want to discuss attrition bias. You'll want to discuss how you will account for this. And you'll want to use sensitivity tests for assumptions behind your analyses.

Before I go on to the next section, are there any questions relevant to this material?

Christina Chhin:

Some of them you've already addressed, and some of them we will be getting to later.

Amy Sussman:

Okay, so we'll come back to see if there are any that are not addressed as I move on to the next section.

For your personnel section, you're going to describe key personnel. What's really important is that someone has expertise in each aspect of your project. So, this means someone has to have the appropriate methodological expertise. There needs to be substantive people that know all the issues that you're addressing. It could be the same people that have both. You can have different people with different expertise, but work together. What you should not do is propose to hire somebody with a certain expertise. The reviewers want to evaluate your proposal based on who specifically is going to be involved. So, you need to actually name and describe the expertise for each key personnel. You want to make sure someone has project management skills specifically, the PI. Also, show that for every aspect of that project, that relevant person has enough time committed; the expert in that area has enough time to be involved in the project.

When you submit your CVs, make sure they're specific to the project, rather than generic CVs that you might have written for a different purpose. Make sure it has the relevant information. And as mentioned earlier, you can use the SciENCv to create the biosketch. It's four pages, plus an additional page for other support.

So, strategies for the PI in the personnel section. If you are a senior PI, show that you have adequate time. We don't want to see a PI who has two percent time on the project. That doesn't show that you're really involved in the project. Also, make sure that your credentials are clear because some of the reviewers might not be in your area. They might not be as familiar with how senior you are and your experience, so just be clear about it.

Now, if your junior researcher in applying as a PI, you do need to show you have adequate expertise to do the work and to manage the project. So, you might want to talk about how you're going to be continuing the graduate or post-doctoral research that you've already conducted so that you do have expertise in the area. And you'll want to talk about anything that shows you've had management skills when you were a student or post-doc. Also, make sure you include any publication record that you have relevant to the project because you want to show that even though you're junior, you can be productive.

And if you're very junior, particularly if you don't have an extensive publication record, you probably want to have a senior person as key personnel working very closely with you. Reviewers are more comfortable if you have a senior person to turn to for advice either as a co-PI or a co-investigator, even contractors or an advisory board of senior researchers. And include enough of their time on the grant to be taken seriously. Again, if you have someone for two percent and that's your senior person to whom you're going to turn to for advice, that does not look like you're really going to be getting their active engagement in the project.

Christina Chhin:

Amy, I just wanted to pause here for a second because there are a couple of questions regarding personnel.

One question was in regards to the advisory board - Is it appropriate to compensate board members? Must they be named? Should short bios be included? So, you can certainly include advisory board as part of your proposal and it's actually a pretty common thing to include. Compensating them is pretty standard. Most projects compensate them to some extent, whether it's a stipend or paying for travel to attend meetings to discuss the project. You should include a short bio of the advisory board members. You'll also want to discuss it in personnel section and name the advisory board members in the proposal.

Amy Sussman:

You can have also an advisory board in a different capacity. You might have an advisory board of experienced teachers or school personnel -- and you don't have to name them in that case. But that advisory board might be serving a different purpose than the advisory board of seniors in the field.

Christina Chhin:

Right, that's a good distinction. There's also another question about whether there is a strategic advantage to naming someone as PI from the education discipline as opposed to a different area, like social work, or another discipline. I would say there's not necessarily a strategic advantage. It really depends upon what you're looking to do, and it's really the team as a whole. You want to make sure that, in terms of personnel, you have a strong team with all the necessary expertise required to successfully accomplish the project goals. So, the PI could be someone not from education, but may have strong expertise in a domain that's central to the project. That's fine. It's not necessary for them to be from education.

There's also another question about whether 10 percent time is considered enough time to be taken seriously. I've seen 10% time of key personnel on proposal. It is probably more common with senior researchers, since they may be working on multiple projects.

Amy Sussman:

And they're more expensive.

Christina:

Yeah, there's that too.

Christina Chhin:

So, it can be sufficient. It just depends upon what their responsibilities are on the project. If a PI or Co-PI is only devoting 10%, will there be another key personnel, maybe a project manager that will be devoting 50% or more time on the project to compensate? Whatever FTE is proposed, you really want to make sure the time is adequately aligned with the responsibilities that they're going to have on the project.

Amy Sussman:

And it could change over time. It might be that you have someone with expertise in the relevant methodology on board and they might be involved in the beginning, setting up the design and then more at the end for analyses, but it doesn't have to be consistently the same amount of time throughout the project.

Christina Chhin:

The other PI question is whether the PI needs to be affiliated with a university. The PI does not necessarily need be affiliated with a university. They can be from another relevant institution or organization. In either case, you want to make sure sufficient information about the institution or organization is included in the resources section.

Another question - how often should advisory boards meet? That can vary. It can be a couple of times a year or it could be quarterly. I would say it depends upon your project and what you're expecting them to do. I've seen advisory board members meet more frequently, like under Goal 2 projects where they are providing feedback on the design and revisions. Some other projects, may meet just once a year, so it really depends.

Amy Sussman:

There's a question about typical level of effort of PIs and co-PIs. I don't think there is a typical. You know, we've seen very high levels of effort ranging from 50 percent to 100 percent. We've seen 10 percent sometimes, so it really just varies. You just want to make sure whatever effort you're proposing, it aligns with the responsibilities of that person for the project and they're not over tapped. It just varies.

Christina Chhin:

In terms of breaking out your level of effort between summer and the regular school year months, we actually want you to, if at all possible, put your level of effort in terms of the 12-month calendar. So, you should have a single level of effort that is representative of the 12 months. Also, any letters of support or agreement from advisory board members should go in the appendix. I think we have a table later that shows what goes into the appendices.

We also have another question here about compensating non-U.S. advisory board members. I don't this is an issue. You just have to make a case that their expertise is necessary for what you're looking to do.

Amy Sussman:

Generally speaking, you can have non-U.S. people involved. Well, obviously, the project has to be relevant to the U.S. education system, but the real difference you would have to think about -- not in the case of an individual, but more in the case of a sub-ward -- is that they can't take indirect costs. So, it has implications to the project, but that's different from what you're asking about individuals.

Christina Chhin:

There are some remaining questions here, but in the interest of time, Amy will continue with the presentation and then we'll come back and answer more questions.

Amy Sussman:

Okay, resources. You have to show that your institution – or multiple institutions that are involved in the project – have the capacity to support the work. What you don't want to use is boilerplate language from university. We want it to be specific to what work you're doing and whether or not your institution can support your work.

You want to show that all the organizations involved understand and agree to their roles, so you'll have to talk about what each institution will do; that could be an institution of higher education or it can be the schools that are involved, where you are recruiting your participants. How will they contribute to the project? And you want to show strong commitment from the source of your sample. So, from schools and districts -- you want to get letters of support from them. We're going to talk about letters of support shortly, but you do want to show that you have their support before you apply.

If you received a prior grant, a prior award for similar work, you would want to discuss the success of that work because that would show that you have the general resource for getting the work done.

You want to talk about your dissemination plan under resources. Christina mentioned earlier that sometimes in the past it had been left out of a proposal. I want to stress that it is required and it's required to be in the resource section, not in an appendix. Not in anywhere else but the resource section. For the dissemination plan, you're going to describe your capacity to disseminate information about your research findings. You'll identify the audience that you expect to disseminate the information, those that will benefit from the information, and the way that you intend to reach each of these audiences; they might be different ways. Researchers are a very different audience than school administrators, for example. So, you would have different dissemination strategies.

Appendix D should back up your resources. This is what Christina had just mentioned about where things go in the proposal. You'll want to have detailed letters of agreement from each of the institutions involved, or from states or school districts. And you want to show that each of these partners understands their role. You don't want to just have boilerplate language from the schools that are participating. You want to show that they know how much time is involved and whether there is random assignment of their students. You want to show that they're on board with exactly what you're proposing to do. And if you are using data from another source, whether it's school records or an existing dataset, you want to show that you have access to this data.

For your budget, you want to provide a clear budget and a budget narrative -- or budget justification – for the overall project and for each sub-award. You'll need to provide details about the assumptions of how you came up with the budget. So, for example, for travel, don't just take a round number and say, "Okay, it'll be this much." No, talk about how you came up with that number. What rate for the hotel and how many days – that kind of information to back up how you came to that number.

The budget categories that need to be addressed are described in the RFA. We have the page numbers here, it's page 110 for the NCER RFA and page 116 for the NCSER RFA. You need to check for specific budget requirements for each research goal. We had a chart up earlier that showed the maximum budget, but make sure you double check because if you go one penny over that budget, you won't be reviewed at all. And ensure that everything is aligned, so that your project narrative justifies what your actual budget is. And that your actual budget is aligned with your research plan.

So, people sometimes ask, "Well, should I ask for less money if I'm asking for three years instead of four years?" Well, the answer is you need to ask for the amount of money that supports what you plan on doing. It really just needs to be justified by what you're doing.

Now, this just shows the appendices -- what goes where. I won't go through them all, this is in the RFA, but you want to include these things, if relevant. Some of them are optional; some of them are not optional. One thing we have not mentioned yet is a data management plan and that is required for goal three and goal four projects. That would be Appendix C.

This is the application deadline. It shows the letter of intent due date, which is not relevant anymore and we've already discussed that. But the application deadline -- I cannot stress enough how important it is to get it in early. And I don't mean earlier in the day. I mean earlier -- days earlier because it has to go through multiple layers. It has to go through grants.gov and get confirmed there and then come to the Department of Education and if there is a technical problem along the way, you need to be able to resubmit it. You want to make sure you get the confirmation that it was received at each step. Again, as Christina mentioned, if it's one second late, it can't be reviewed.

Another thing to note at this point is that you should talk to your sponsored research office. Tell them in advance -- let them know that your proposal is coming, so that they can make time for it. Make sure you work with them, especially if they're the ones who are actually pressing the button to submit the proposal. Make sure you see that very last draft. Make sure they didn't have to make any adjustments to your budget because you don't want to find out later that they've adjusted your budget and now you're a dollar over the maximum and can't be reviewed.

This is just an example of what the website looks like before you submit your application -- Grants.gov. You'll find an application package there and you will want to look for this specific competition that you're applying to within Grants.gov. So, these are basically the two things that you need to apply. You need the RFA, which you need to read in detail like we've discussed, and you'll need the application package you'll find on Grants.gov.

A quick rundown (we have five more minutes) of the peer review process. Applications are reviewed for compliance and responsiveness. Compliance means things like the page numbers and the line spacing, the font size. That's reviewed first and then responsiveness to the RFA. This is where the requirements in the RFA are important. Responsiveness means that you've addressed every requirement under the relevant topic and goal. Once they are deemed compliant and responsive, they go to a review panel. There'll be two to three panel members who conduct

a primary review of each application. And the most competitively scored applications from the original reviews are then reviewed and discussed by the full panel.

Please note that the Scientific Review Office runs this entire process of peer review and it's completely separate from the program offices at NCER and NCSER. That's the reason that we are able to talk to you about your proposal in advance, because we're not involved in the actual review process.

Here are some website links to where you can find out more about the process and the list of peer reviewers. And this is just reiterating things we've mentioned all along. Read the RFA carefully, contact the program officer if you have not already had interaction through the letter of intent. You should contact them anyway and make sure that your idea fits the right topic and goal. And IES program officers can actually review proposals and provide feedback in advance. This is because we are separate from the review process, but you need to supply the draft pretty far in advance. A lot of program officers have a cut-off date in which they review -- if you don't get the draft to them by that date, they can't review it because they have too many to review.

We only have a few minutes left, but let's see if there are any questions.

A couple of remaining questions here... a question about development projects in the past, they were limited to three of funding and we've now had four years of funding. In the past, you had to provide a strong justification for the fourth year and there's a question about whether that's still the case. In general, I would say whatever number of years you're requesting, it should really be aligned with the timeline of your project. So, your timeline in terms of your project should really correspond with the work that you're proposing. If you're spending the last two years just doing data analysis, that probably isn't a strong enough justification for a fourth year. But if you're doing a lot of substantive work up until that last year, I think you're probably safe there. So, just make sure that what you're proposing in terms of the timeline makes sense.

There's a question about how some universities have different fringe rates rates for summer and academic year. You can include those differences in the budget, but then you report only one level -- one annual level of effort. So, although you may have different levels of effort in summer versus academic year, your overall level of effort for the calendar year should be what you report. Some institutions require you to break the budget out in academic versus summer, but in the personnel section, that's where you can say what your overall annual percent of effort is because that's what IES will evaluate.

Christina Chhin:

Okay, we have another question here about letters of agreement from schools or other districts. Do we need the letter from the specific school or districts or should the letter be from the state education agency or other governing body? I would say it depends upon how decisions are made in terms of conducting research in the schools. In some organizations or institutions, it is the district that provides the approval, but in some cases, it's the school. So, think about where the level of approval really resides and get the letter of agreement from the appropriate person or office.

Some of the remaining questions here are a little more specific. Since we are out of time, I think we'll end here and if we did not get to your question, feel free to either contact myself or Amy. You can also contact the program officer for the topics that you are interested in with any questions. Thank you.

Amy Sussman:
Thanks.
[end of transcript]