Megan Columbus: All right, so now thank you for joining this session on Grant Writing For Success. I think you'll enjoy hearing what our presenters have to say to give you the big picture of what you're shooting for. I have with my today Dr. Robert Rivers from the National Institute of Diabetes and Digestive and Kidney Diseases, and Desiree Salazar from the National Institute on General Medical Sciences. Welcome to you both. We're going to have them do a brief presentation, about 20 or 25 minutes, starting with Dr. Salazar, and then Dr. Rivers will take over, and then we will be answering questions.

Desiree Salazar: Okay, so I am Desiree Salazar, and along with my colleague, Rob Rivers, today we're going to be talking about Grant Writing For Success. Okay, so first there is just an overview of the presentation. We're going to strongly encourage you to start planning very early for applying for grants, finding the right opportunities and being sure to apply for the right opportunities for you, and we strongly encourage to contact appropriate program staff very early in the process, as well as throughout. And then we'll talk about presenting your ideas clearly, and then what the next steps are after review. Okay, so the grant life cycle can be a prolonged period, and we strongly encourage you to start very early. So in the planning phase in which you're thinking about what you want to propose and finding an opportunity, to then preparing your application, obtaining preliminary data, and getting ready to actually apply, this process can take easily up to 8 months. Once you submit your application, the applications are received by the center for scientific review, and those applications then get referred to the appropriate institute or center where it will be hosted as well as assigned to an appropriate ...

Person: Yes, they're here now.

Desiree Salazar: ... And this process can take 1 to ... From months 1 to 3 for that process, and then from months 4 to 8 is when the applications actually get reviewed and summary statements are released. So once the summary statements are released and the institutes have all the scores for their applications, then it takes another couple of months to make an award. And once you receive an award, you'll be in the process of having your grant award managed, and then you can share your results as they happen throughout the grant period. So I encourage you all to look at the resources on our website about grants and funding, and there is a great application guide there that has a lot of different links with a lot of information, depending upon what stage you're at. If you're preparing to apply, this can help you look at understanding funding opportunities, the different types of applications. There's tips for writing your application, what kind of forms to use, as well as information about submitting the application. So I strongly encourage you to look at this website, shown at the link here, and the slides and presentation will be available. Okay, another critical thing is to apply for the right opportunities. So you want to make sure that you're applying for opportunities that are appropriate for the kind of research that you're doing, and that you're applying to the right institute or center. So one tool you can have to help you find different opportunities is to use NIH Reporter. And you can use NIH Reporter to look up all of NIH-funded grants, so you can look at grants by your colleagues who work in a similar area, other people in your department or institution, and see what kind of grants they have. So this is one tool that I strongly encourage you to use, and a little bit later we'll talk about the matchmaker function which is shown in the lower-right corner, and this can help you find the appropriate program officer. Additionally, we also strongly encourage you to use the NIH guide to help find funding opportunities. And so our funding opportunity announcements, or FOAs, or FOAs as some different staff call them, and these come in a few different flavors. So the requests for application, or RFA, have special funds set aside, special receipt dates, and a special review panel. The most common announcements are called PA, Program Announcements, and they come in a couple varieties. PAR is when there's a special receipt date or review process. PAS indicates that there's set-aside funds for that opportunity. And another term you may hear is the "parent" announcement, and these tend to be investigator-initiated, activity code-specific opportunities, things like our R01, R03, R15, and R21 that many of the institutes participate in, and an applicant just proposes the research relevant to the work that they do. So the NIH guide is published daily, and every week there's a table of contents of all the new opportunities that have come out that week, and you can subscribe to an e-mail list to receive these weekly. And you can find these opportunities at grants.nih.gov/funding. Another important concept is our early stage investigator, or new investigator status. So this designation matters for R01 or R01 equivalent applications. So an early stage investigator is somebody who has never held an R01 or equivalent application, and earned their terminal degree within the past 10 years. A new investigator is also someone who's never received an R01 or equivalent award, but is further out than 10 years from receiving their degree. So these applications are designated as either an ESI or an NI, and during review these applications are clustered and reviewed together. Institutes often prioritize applications from ESI applications and consider the status when making funding decisions. And importantly, ESI status extensions are available for a variety of different reasons. Some of those are listed here. I encourage you to look at our website on the early stage policies, and you can get more information there about status extensions and other information. Okay, so we strongly encourage you to contact appropriate program staff early. And so, Rob and I are both program staff, or program officers is another term that we're known by. So what we do is help manage grants, contacts, and cooperative agreements. We help identify the needs in scientific areas, and we help report on the scientific progress and program accomplishments of the grants that are in our portfolios. So we are called by a variety of different names: Program Officer, Program Director, Chief, Health Scientist Administrator, or Program Official. But we all have the same job and we're here to help applicants navigate the grant process, so we strongly encourage you to reach out to us very early in the process and throughout. So what can you discuss with a program officer? First, your idea, your research ideas. So when reaching out to a program officer, it's really a great idea to provide a draft of your specific aims page or an abstract summary of your research, and we can let you know whether the research that you're proposing is a good fit for the institute or center, or IC, that we work at, and whether your research is in a priority area for the particular IC that we work at. We can help you find appropriate funding opportunity announcements, and determine whether you're eligible for those announcements, and as well as tell you about the other funding mechanisms that our ICs support. So we really strongly, strongly encourage you to reach out early in the grant application process, ideally before you've completed a grant application, so we can help you and make sure you're applying for something that you are eligible for. So one tool to identify potential program officers is to use NIH Reporter, and in particular the matchmaker function. So using this function, you are able to put in an abstract or draft specific aims page, and if you click on "similar program officials," you'll then get a list of program officers that have similar grants in their portfolio based on the terms that you provided. And you can see kind of how many grants they have that seem similar to what you've input, and which institutes and center, and find our contact information. So this is, matchmaker is by no means a perfect site, but it will point you in the right direction, and this is a great place to reach out, to look for appropriate program officers, and reach out, send your aims, and then we can let you know if it really is a good fit for our portfolio or institute. Okay, so next we're going to talk a little bit about the writing process. So it's really critical to present your ideas very clearly. Grants are reviewed by appropriate experts, but they often have a broader scientific knowledge than the very narrow area that you're working in. So you want to make sure that you're writing a level that's accessible to people that may not be super familiar with what you are working on. So some general writing tips. One is to read the instructions for the application form very clearly, both the funding opportunity announcement as well as the specific instructions that are given within the funding opportunity announcement. Additionally, it's important to be realistic, and not overly ambitious to propose work that you can achieve within the length of the grant award. It's also advised that you discuss potential problem areas and potential solutions that may come up during the research within the application. And critically, it's important to be very explicit with what you're writing. You can't expect reviewers to read your mind or to read between the lines, or to understand what your intentions are. You really have to write everything down, all the information that you want the reviewers to have when they're reading your application. And critically, when you're writing your application, you really want to align the application with the review criteria that are found in the funding opportunity announcement. And there are ... Here is listed the core review criteria, in particular the significance, why the research is important. There are sections on the investigator and your qualifications for running the research project, the innovation of your research, why is what you're doing unique and new and important for ... And why are you qualified to do that research? And then the approach is a very large section of the grant. How are you going to conduct the research, and describing the specific experiments and tools you'll be using. And lastly, the environment in which you'll be conducting the research. So in particular, the bolded bullet points, significance, innovation, and approach, are especially critical. Okay, so now I am going to pass the mic to my colleague, Rob Rivers, who is going to continue the presentation.

Robert Rivers: Thank you so much, Desiree. And as we continue, let's keep the discussion going on what makes a grant ... The winning formula, essentially. So when we think about it, what is the overall impact of application? There's really these two major questions that reviewers are going to ask: Should they do it? And can they do it? Is this something that should be done? Are there major questions around it? And are the people planning to do it, do they have the skill set necessary to make it happen? Next slide. And so in developing that strong research plan, it's really about ensuring that your specific aims instantly grabs the reader's attention. This is like a roadmap for what you're planning to do, and so as you write it out, you need to ensure that what you're saying and writing in there is clear, timely, and is providing new information to what the community doesn't have. So make sure that you state your hypothesis and state long-term objectives and expected impact. And there should be a clear organization. It's kind of like if you're driving, you want to ensure that your GPS is giving you clear directions in the road. Likewise, when you're writing your grant, your specific aims page should be like a GPS of where you're going throughout the entire research plan. Lastly, tell reviewers what the results will mean. Next slide. It's really in thinking about this idea of significance. It's getting to the big question. So what? So if you do this, what will we know differently? What are we going to find out? And it also gives the reviewers an understanding that you have a full understanding of the entire field. So in the significance, it's really asking the questions, "What's novel about it?" "What's important?" "Does the work being presented and suggested through your application represent a logical next step in research and address critical gaps that are there?" Next slide. When we consider the review criteria of innovation, we really want to think about what's new and unique. Does this refine a previous approach and improve it? Or proposes a totally new application or test a concept that you're currently building. Does this shift the current thinking or the current paradigms? And if it is shifting the current paradigm of scientific understanding, you want to make sure that you're making a very strong case, because it's quite likely that the individuals in review are been using that current paradigm for the majority of their career. Next slide. One key point in all applications, especially for most R01s, is having some preliminary data in your preliminary studies. This preliminary information strengthens your application because it shows the availability of not only key resources, but also your familiarity with the methods and approaches to interpreting the results. This also gives reviewers the information to know that the work is promising, feasible and has impact. And these preliminary studies could be qualitative or quantitative, and could also come from one of your collaborators, but it provides that's a bit of a guarantee that what's being proposed can be done. Next slide. When we're looking at approach, this goes back to what we mentioned earlier about ensuring that there's a clear guide between what's happening ... Getting from basically A, the submission of the application, and B, what we learned upon application funded. Does your plan flow logically from literature review and prior studies? Are you saying how the hypothesis you're bringing up will be tested? Do your measures capture the variables needed to test the hypotheses? So these are the questions or the details you'll want to ensure that you're addressing, and that's going to be reviewed in the approach section. As we move to the next ... Next slide. In clinical studies in the approach section, we also want to see an overall strategy, methodology, and analyses. In the next slide, we're going to move to talking about the hallmarks of an outstanding grant application. And I'm going to go a bit slower on this slide, and when you ... These slides are available for download, and I think this slide and the next slide are some of the most important slides that are kind of the take-homes from this presentation. So an outstanding grant has a significance and an important problem in public health. So it's going to make a difference. There's a high degree of what's new. How it's written is clear, and there's a track record that the work can be done, and there's relevant and supportive preliminary data. And lastly, there's a careful attention to detail. Spelling, punctuation, grammar, fonts, clarity, figure one listed as figure one in the slides, that really matters. So if you imagine the people reviewing your application, you want to make it as clear as possible, and so anything that can detract from them reviewing it could actually hurt your application in the overall review. So as you move to the opposite of this slide, the common reasons cited for weak applications, it's essentially the reverse of everything I've just mentioned. The hypothesis and rationale aren't clear. No evidence of feasibility have been provided in the grant. And lastly, the poor writing and potentially errors in grammar lead to the understanding for reviewers to be very low. So it's really worthwhile to ensure that you have other people review and look at your grant before you submit to make sure there's no errors that could show up. Next slide. So, in overview, start planning early, apply for the right opportunities. Early on, contact program staff because as soon as you have a specific aims page of what you're thinking about applying for, send it to the program staff to start the conversation to see is this responsive to the current announcement. Seek advice broadly, and then pay attention to details because those details matter. And then, ensure that you respond to the review criterias. So what do you need to do after the review? Read and then re-read the summary statement, and then contact your program officer and be prepared to discuss the reviewer comments, the scores and percentiles. And also in this conversation with the PO, you'll get an idea of the funding prospects, resubmission, and other options. The next slide's going to show just a really, really good summary statement. So this individual submitted their grant, and they've been kind enough to allow us to share the cover page of their summary statement. And the key things to point out for an R01 is the impact score and percentile. So NIH ICs will provide these impact scores and percentile, might give you a good sense of what would likely be funded. Next slide. And in the summary statement, there's two major sections. Essentially, there's a first section written by the scientific review officer, and that's called the resume and summary of the discussion that took place. And then there'll be critiques, usually three critiques from reviewers of the applications. And these are individual reviewers summarizing their opinions of the research grant. But please note, the individual scores that the reviewers write for significance, innovation, approach, and environment, they're not mathematically an average that leads to the final priority score. Rather, they're what the reviewer was thinking in the review. Next slide. So consider the criteria scores carefully, and then each of those written comments and summary of discussions will tell a complete story of how the committee reviewed your application. Significance and approach are ones you really want to focus on, because if there's low significance, no matter how great any other score is, the likelihood of having a probability of funding is low. And this is not a competition that just goes to the fast, but it's actually a competition that takes time. So as we'll see in the next slide, resilience is important. So if you're not funded on your first attempt, it's about trying again. And you know you're in good company, because the majority of applications aren't funded the first time. Rather, it's their resubmissions that address some of the weaknesses that are found in review that have the best opportunity for support and funding. And if you're not funded right away, you can talk to your PO and you can get a good sense of your options available, more advice, and how to come back in with a new application. So the next slide, please. There's also an opportunity we want to discuss just briefly and to consider looking into for early career investigators, is the Early Career Reviewer Program, an opportunity to become part of our review panels here at NIH. And these are great opportunities to get a sense of what it's like on the other side reviewing applications, and it will help as you develop applications in the future. And then our last slide, I promise, is more about revising and resubmitting. This is an important step. Nothing that's achieved happened without spending the energy and time to ensure that it's improved and addresses potential weaknesses. So in the revisions, it's an opportunity to improve the application, and acknowledge and accepts the helps of the reviewers. So when writing a resubmission, write a clear introduction section, address the criticisms thoroughly, and respond constructively and respectfully. So essentially, we want to use positive tones in the responsive as opposed to, "The reviewers had no idea what they were reviewing!" That's not what we like to say. Instead, it's a situation of saying, "We're thankful for the reviews, and we've used those feedbacks to respond in these ways. And so now we'd like to open it up for questions, and I see the Q&A has over 48, so there's definitely plenty of questions we'll just jump right into. But before we open up the Q&As, I made a mistake because I didn't finish an answer. And one of the questions was, "Can a doctoral student applying for F awards send their specific aims page to a program officer for review?" And that's yes. So as soon as you have your specific aims page, whether you're applying as a doctoral student for an F award, or you're applying for an R01, when you have a specific aims page do submit it to a program officer for initial conversation. And with that, we're done with the presentation and open for Q&A.

Megan Columbus: Thank you so much, Rob and Desiree. I have been kind of answering questions furiously. For those of you who have been also keeping up a conversation in the chat, I'm having a really hard time. I can't monitor both at once. So please make sure that you get those actual questions into the Q&A box. Here's a question from Stephanie Torres, "Can you speak to how to navigate aim dependency? For example, if we are piloting a novel intervention as aim two, can we propose evaluating implementation outcomes of that pilot study as aim three? In other words, how to balance having unrelated aims versus dependent aims?" Who would like to take that one?

Desiree Salazar: I can take this one. So, this question sounds pretty specific, so I think this is a question that you'll need to reach out to your specific program officer. But in general, it is a good idea to make sure that the aims are not dependent upon one another. So if one aim, if it doesn't work out, if that tanks the whole grant application, then usually reviewers are not very happy with that. So they like to see that aims are related, but the success of aim two is not dependent upon the success of previous aims.

Megan Columbus: Okay, and so when we're talking about aims, a lot of people have questions about when you contact a program official. When is it too soon? Which is never, really. But they're asking how well aims should be developed before contacting a program officer. Do you have suggestions?

Desiree Salazar: Yeah, so they ... I mean, you can definitely send a draft page of aims. Sometimes it's just, it can be very early and we encourage you to reach out early. So it can be an early draft that shows the types of questions you're asking, the area of research that you're on, and it's good to ... Don't wait to have super polished aims before you reach out to program staff, because then you may be having your application ready. So do just get a draft together and research out, and we'll give you some general guidance. And then over time, if the aims change as you're working on them, we're happy to look at them later again in the process.

Robert Rivers: That's exactly right. Once you have that draft aim, send it in, and that's the time to start the conversation.

Megan Columbus: Great, thank you. Jennifer is asking a question that I'm sure other people have as well. She finds it incredibly tricky to weigh between impact and feasibility. So can you explain a bit more about what would be considered both very impactful, but also feasible? And how much is enough preliminary data for an R01? What's too little? I know it's hard to answer in generalities, but I think it's an interesting question.

Robert Rivers: Yeah, that's a great question. And it's going to sound a bit like a record, but it depends on what you're applying for and the field you're in, in terms of what's considered feasible and what's considered innovative. So I would advise her to talk to her program officer. Essentially, when we're thinking about preliminary data, you want to be able to ensure that the leap of faith you're asking reviewers to take with you is grounded with some scientific data that you have from past experience you've done in your own research, whether that's CPBR or in a lab, or that you're collaborators have done. So it definitely strengthens every application if there's some proof that it's possible. But in terms of feasibility and innovation, you need to have a conversation with your PO. Because some program announcements don't request as much preliminary data, or if we're even thinking in the context of COVID and the initial research when there was very little known, there wasn't as many questions asked in terms of what is expected or what do we know. Rather, what's the novel idea to try to help us better understand this? Versus if you're dealing with a disease such as diabetes, the expectation, it should be novel, and there should be a lot of previous data just because there's more understanding in our knowledge around the disease.

Megan Columbus: We've had a few questions of ... We've had a lot of questions about early stage investigators, and I hope people see that in the chat I posted links to the page, and links to the FAQ so people understand their eligibility issues. The one question that I think other people might be interested in is, "If I am going in collaboratively with somebody on an application and we are both early stage investigators, will we lose our early stage investigator status if we get a substantial grant award?" And the answer is yes, you both will. But the whole goal was to get you that substantial grant award, so that's a win for everybody. But it does mean that if you're an early stage investigator and you're on an application with others who are not early stage investigators, just know that that application will not be considered as an early stage investigator application, but should you get an award, A, you got an award and that's great, but you will not be considered an early stage investigator after receiving that award. Would you guys agree with that?

Desiree Salazar: Yeah. Yeah, that's exactly right. So to be considered an early stage investigator, all PIs, if it's a multi-PI application, must have that status. And if ... It's typically not advised to go in as an early stage investigator in a multi-PI application with other PIs, especially if you're playing a minor role and to lose your early stage investigator status on that. You know, it's up to you and your work, but I think you should try to take advantage of that status and try to get your own large award.

Megan Columbus: And from a collaborative application, is it required to have published together?

Desiree Salazar: No.

Megan Columbus: Right. Okay.

Robert Rivers: It's not required, but it does look stronger. So you don't necessarily have to have a publication together, but if we're thinking about, in review, if you do have papers together it shows a stronger collaboration.

Megan Columbus: The counter to that is, in your application, if you talk about people's roles and you show those roles as being complimentary, the whole point is to say why the leadership team is the way it is, and say it in a way that's powerful, and it'll resonate with reviewers. Right? So using matchmaker, right? We've talked about using matchmaker to identify institutes that might be of interest, and might be supporting the kind of science you're doing. We've talked about using it to identify program officials. This particular question is, "If matchmaker identifies multiple potential program officers, should we send the aims to all at once?"

Desiree Salazar: Yeah, I mean, it will. It will identify a long list, and I think you can kind of see some themes. So in addition to showing the list of potential program officers, you'll see a bar graph with the different ICs and how many grants or program officers are clustered in, particular ICs. So if there's a long list, and most of them are at NCI and maybe a scattering of others, probably NCI is your institute, but you can definitely reach out to multiple people at once. In particular, probably from different ICs because program officers at ICs do talk to one another, and so sometimes like six of us will get the same e-mail and we'll talk to each other to say, "Oh, this doesn't seem to fit for me, but I think it fits with your portfolio." Because we know each other's portfolios and do communicate. So you'd probably be best served targeting the top hit from each IC, and then those program officers can point you in the right direction if they're not the appropriate person. Another great place to look is every funding opportunity announcement has a scientific or program contact listed at the bottom. And so if there's a particular funding opportunity announcement that you're looking for, you can see that contact, you can send them your aims, and they'll point you in the direction of the most appropriate person at their institute.

Megan Columbus: And I would caution against spamming everybody you see, right? I mean, we've had a number of questions about program officers and their responsiveness, and most of our program officers are very responsive. But they have heavy workloads, and so we're not looking to add to their workloads. And if you have a challenge reaching a program official, look at the org chart and find other people in their division and reach out to them. You can reach out to their branch chief, but you may just want to pick a neighbor of theirs and reach out to them. I think people are looking to get you answers. People have a lot on their plate. "If a grant needs revision and resubmission, how long with the review of the resubmission take? Is that also 9 months?"

Desiree Salazar: Yeah, there are different deadlines for resubmissions, but the timeline really is not any faster. So it still has to go through the assignment referral process, the review process. So, yeah, unfortunately it is not faster.

Megan Columbus: Might you guys have suggestions on the way an ESI applicants could show that they have the expertise and ability to conduct the research?

Robert Rivers: I think in writing in, actually, the grant itself, that's where it will come through, and also in the biosketch. So in showing in the biosketch areas of past scientific work, make sure that it's focused towards that grant and how you can show that your previous experiences in previous publications or presentations point to having the necessary skills and expertise that what's being proposed in the grant itself is definitely doable and you have the right team to ensure that science can be done.

Megan Columbus: So here's a good question, "Can NIH experts, program officials or others, review and give their opinion on an application before submission?" And that's going over the line, right?

Robert Rivers: Yeah, we don't tell you, "Don't do this," or "This isn't going to get funded," or "This is going to get funded." Typically what a PO can give you insight on is like, "This is responsive to the announcement." And so that's the kind of advice that you should seek from a PO, is what I'm proposing in my specific aim responsive to what this parent announcement, or the PA, which Desiree spoke about earlier. And that's the level of insight you should be seeking for. Earlier stage career folks such as grad students and postdocs, also it's an opportunity to talk to program officials to understand how the NIH works. So there's literally details of, "I submitted this, when should I hear back? Who should I be talking to?" But if the expectation is that a program official is going to come back and help reframe or revise the application, that's not what we do.

Megan Columbus: Here's a good question, "Can we apply for multiple opportunities at the same time? For example, an R03, an R21, an R01?" So I'd like you to make sure you make the distinction between submitting the same application more than once to NIH versus submitting multiple, different applications to NIH. Right? Because we're not going to submit the same application to NIH more than once, although you can submit the same application to NIH and a different agency, but then you can't get it awarded by NIH and a different agency.

Robert Rivers: Yes.

Megan Columbus: One would award it or the other.

Robert Rivers: Exactly, Megan.

Megan Columbus: But what would ... What do you suggest about different applications to NIH?

Robert Rivers: Yeah, if there's different scientific grants being proposed, they can be submitted at the same times to different PAs. But as you've mentioned, you can't take the same grant. "I'm going to study the intrinsically disordered properties of alpha and beta-synuclien to NIGMS, then to NAID, then to NIDDK." That same grant can't be submitted to three different ICs at the same time. However, you can submit three distinct grants that might all entail studying alpha-synuclein, but in different ways. So you could say, "We're looking at the phosphorylation propensity in the C-terminus chain of alpha-synuclien and it's implication in cancer. We're studying ubiquitination of the N-terminal part of alpha-synuclien and it's relationship to heart disease." So those distinct applications can be submitted, but the same exact application cannot be submitted at the same time to ICs, as you've mentioned.

Megan Columbus: So we have time for a few more questions. Let's see. "Determining whether or not to resubmit or to submit a new application." Can you give some advice?

Desiree Salazar: Yeah. So, typically, it's looking at the summary statement and seeing what the main concerns where. And whether if the application is going to be pretty similar along what you previously proposed, it's often a good idea to resubmit rather than to submit a new application. But if you're drastically changing what you're proposing based on the feedback and don't want to address the previous feedback because it's ... You know that what you're proposing is very different, then you might go ahead and submit a new application. In most instances, it's often advised to resubmit. But those are discussions to have with your individual program officer and we have these frequently after summary statements are released and give particular advice based upon individual situations.

Megan Columbus: Great, thank you. We have a couple questions here about where to put information on an application, and I'm going to kind of meld them into one. So, where do you normally put preliminary data in an application? Go ahead and answer that one, and then I'll do a follow-up. Either of you? Preliminary data?

Desiree Salazar: Yeah, so that tends to be within the program plan, the main meat of the application is where preliminary data goes. In some cases, it might be background information, but it can kind of depend on ... But typically it's in the program plan where you're talking about the approach and showing that you have the skills to do what you're proposing.

Megan Columbus: And then, how much of a specific [Indistinct] should be describing the applicants training versus the actual research?

Robert Rivers: That will depend on the type of application. So if they're applying to an F or K mechanism, there might be more information about the training, versus if it's a research program or grant, or RPG, you just really focus on the science as opposed to the training the individual has to pursue the science.

Megan Columbus: Can they use published data from their lab as preliminary data in the grant?

Robert Rivers: Yeah, that shows feasibility of the work. It's like, "The field has shown," or "Our lab has shown," and that's how that can be written in, and that's a way to show it's feasible.

Megan Columbus: And does preliminary data have to published?

Robert Rivers: It does not have to be published. It could be in the bio racks. I know there's ways now to have it open so reviewers, if they wanted to see the data in that prepublication, it could be seen. And that's probably the best, most advisable way if it's not published yet.

Megan Columbus: Last question, "Can you clarify the difference between a collaborator, a consultant, a co-investigator?"

Robert Rivers: I'm going to pass to Desiree for the last one.

Desiree Salazar: Yes, so there's a few different phrases. So what's most important at NIH is PI and multi-PI, so those are the individuals whose names are listed, they go into the NIH Reporter, and we can see ... And those are the people who have responsibility for the grant. So co-investigator is not a PI, so their names aren't listed in NIH Reporter, but they are somebody whose expertise is really essential to the project, so typically it's just kind of a key personnel. Sometimes co-investigators are at different institutions and might receive a sub-award of some of the funds. Collaborators are often folks who may be doing something, some part of the project, or providing some reagents, and often you'll have a letter from them where they say, "You guys have mutual interests in X field, and they're going to provide images or antibodies or some sort of data analysis." So that's what a collaborator is. And what was the other one?

Megan Columbus: I think you covered it ...

Desiree Salazar: Okay.

Megan Columbus: ... because we're at 1:47.

Desiree Salazar: Okay.

Megan Columbus: So what I do want to let people know ... Thank you so much to Rob and Desiree. Very helpful information. What I want to tell people is that we have this exhibit hall with booths from each of the institutes and centers. I can't tell you how many times in this presentation Rob and Desiree had said, "Go talk to a program official." And it doesn't always have to be the program officials exactly for that announcement. You just need enough time to be able to explain who you are, what you're doing, what you're trying to apply for, and they'll be able to give you an answer. Yeah, go to the institute that you think might be interested in your funding in an exhibit hall. Talk to a program officer there. They should be able to help you out a whole lot. There's also a central booth for just, ask a program official, you could go there as well. But I do encourage you to do that. Do let us know how this presentation went for you by the feedback form that was on the screen that you used to get here. When you finish the conference, we'd love to hear how this all went. And thank you all. I really appreciate the questions and the chatter on the side. And enjoy the conference. Thank you.

Robert Rivers: Thank you.

Desiree Salazar: Thank you, goodbye.

Megan Columbus: Bye.