Let’s Look at NIH Peer Review

Session Transcript: 2022-2023 NIH Grants Conference

Megan Columbus: All right. Thank you for joining NIH's presentation on NIH peer review. My name is Megan Columbus. I'm the Communications Director in the NIH Office of Extramural Research, and I'm serving as your moderator for this session. I'm so very pleased to introduce you to someone who has stepped up to serve as the acting NIH Review Policy Officer. He has spent the last 15 years in peer review, and he's the Chief of the Scientific Review Branch at the National Eye Institute. Please join me in welcoming Dr. Brian Hoshaw. Before turning the mic over to Brian, I'd also like to introduce two other Scientific Review Officers who will be helping answer your questions in the Q&A box and later on screen. They're sharing their 30-plus years of experience in peer review, Drs. Dharm Rathore and Manana Sukhareva. All right. With that, take it away, Brian.

Brian Hoshaw, PhD: Thank you, Megan. Thanks, everyone, for joining us. So today we're going to give you a high-level view of what happens to your application after it's submitted, goes through review, a funding decision is made, and we're going to focus on the peer review process. So the problem NIH addresses and the problem they have is, they get over 80,000 applications per year. It's a lot of applications, and they cover the entire gamut of biomedical, behavioral, health research, from research grants to fellowships, center grants, resource grants. So all of those grants and only a certain percentage are going to get funded. So how do they make those decisions? Very complicated process. So NIH focuses on peer review. Now, I'm going to assume almost everyone is familiar with peer review, even if you haven't been involved at NIH. It's the same process used when you submit manuscripts to journals to get published. If you're not familiar with it, it's pretty self-explanatory. So the basic initial assessments on the grant are made by your peers in the field. Other scientists, commissions, researchers doing similar work will provide an assessment of the applications, and this helps NIH make the funding decisions. So the peer review process strives to be fair, equitable timely and free of bias, and all of those aspects we focus on continually at NIH. So just to give you an outline of what I'm going to talk today before our Q&A session, I'm going to talk about what happens to your application, how they are evaluated, who decides which applications will be funded. I'll briefly touch on review integrity, and then finally we'll talk about some of your action items as applicants or potential applicants, what you can do at this point to help the process. So what happens to your application? After you go to grants.gov and submit your application, the first stop is the Division of Receipt and Referral. This is located in the Center for Scientific Review, or CSR, which is one of the NIH institutes and centers. So at DRR, Division of Receipt and Referral, the applications are screened for compliance to make sure they're following the basic rules, make sure you don't have any illegal attachments, things that aren't allowed. They are assigned to an institute and center, so all of your .. . Any type of application that's reviewed covers a certain scientific area. It's assigned to the institute or center based on that, and then with the help of referral officers, the applications are filtered down and then eventually assigned to a Scientific Review Group or a study section, as it's often called. Once it gets to a study section, it's assigned a Scientific Review Officer as well as a program officer, and then it goes through two levels of peer review. So the first level, the Scientific Review Group, this is what we generally think of when you talk about peer review, and then the second level, you probably don't know as much about, not discussed as much, is the National Advisory Council, and this is a council for the institute that your application is assigned to, and I'll touch on that in a bit, And then finally, the funding decisions are made by the institute or center director. So level one. So how are the applications evaluated? So when they go to a Scientific Review Group or study section, they're assessed for scientific overall merit of the work on sort of the details of the research, the significance, the approach. It's also assessed for overall impact, and this is a term you'll hear a lot at this talk, at other talks, anything with grant review or your summary statement. Overall impact is the overall score you get in the overall assessment, and this is for every grant. They also address .. . The review group also address if you're using human subjects. You'll address human subject protection, inclusion across lifespan and then vertebrate animal use if it's applicable there. So the Scientific Review Groups are managed by Scientific Review Officers, or SROs. So once you submit a grant and it gets assigned to a study section, you'll have a contact name SRO. They should reach out to you with some information as far as the review date, information on submitting supplemental material, and just to give you a little background, there are about 500 to 600 SROs working at NIH. I think about half are at the Center of Scientific Review, which does the bulk of a lot of the grant review at NIH. The rest are assigned to individual review branches at the institutes. For example, I'm at the National Eye Institute. I'm the review chief there. There are some grants that we review there. The SROs, almost all of them have a background in research, in science with former commissions, so it's really the job is part science, part project management. So they understand the science background, but they're playing a role to make sure that all of the NIH guidelines and policies are followed so everyone gets a fair review. So who are the peer reviewers? Even though the SROs have a background in science and research, we would be in conflict with the application. We don't assess the merit. We don't score the applications or review them. So the peer reviewers are mostly nonfederal. So most of them are at private universities, institutions, state universities. They are recruited for their expertise as well as balanced representation, and this is true especially for a standing study section. They want to get representatives of balanced study section, means balanced for gender, minority, representation across the country. We don't want just reviewers from the East Coast, the West Coast, and then also stature in the field. It's not just the senior professors who we recruit. We want a range of experience and expertise to get a fair assessment. So each application is assigned to at least three reviewers, and this is by law. It's often more for more complex grants or something like a clinical trial, might have five, six or seven depending on the complexity of it. So at least three reviewers will read the application. They will write critiques listing out strengths and weaknesses for each criteria. They'll give criterion scores, individual criterion scores as well as an overall, overall impact score. And the assignments and conflicts are kept confidential. This is a very important aspect of peer review. So if you only take away two things from the talk today, this is one of the things I want you to remember, and that is the PHS assignment form. When you submit your grant, you have this option for all grants. I'm always surprised by how few applications utilize this form because its optional, but in this form you're able to request an institute or center as well as a study section. Now, some of the grant is going to be obvious where the application goes. If it's purely cancer biology, it's probably going to go to the cancer institute or center. But sometimes your research might fall in between two, and you might have a preference for one for whatever reason. Put that in there. Can't hurt, and the Division of Receipt and Referral take these seriously. They do their best to accommodate these requests. You can also request a study section. Again, some study sections are very specific. It's going to go there no matter what, but let's just say it's mental health and epidemiology. So it might go to one of two study sections. If you look at the roster for that study section, you have a preference. Put that in there. Again, it can't hurt. It can only help you. And then finally, if you really want to help the SRO, you can list the expertise needed for your application. You don't list names. That's very important. It will say in the form, "Don't list names." We will ignore those if we see them because we don't know if it's someone you're requesting or someone you have a relationship with not knowing that would make them a conflict. So some study sections might be 40, 50, 60 applications. SROs go through them all. We look at the expertise. We recruit people, but if you're able to list that in the PHS assignment form, it just helps us out. So at the review meeting. So I want you at 4 o'clock today, we have a live mock study section. Megan and I will be monitoring that. This is very informative and entertaining. It's a presentation, about 45 minutes, and there will be a Q&A section afterwards. This will give you a peek inside of a peer review meeting. Now, it's scaled down. It's a little tongue in cheek just to make it entertaining, but it kind of touches on some points that you'll see in a study section. If you're kind of curious, some people, you'll submit a grant. Later you get a score. The in between part is just a black box. This gives you a peek inside. But very briefly, so at the review meeting, anyone who's in conflict with an application will leave the room. We used to say, "Leave the room," but now you put them in a Zoom waiting room since a lot of the reviews are still being done by video. Each assigned reviewer will go over the strengths and weaknesses of their application focusing on score-driving issue, making sure to address all the criteria and all the points that they need to address. Then it's open for a discussion. Anyone in the room who's not in conflict can participate in the discussion, and this is very helpful to ensure that everyone gets a fair and thorough review. We don't just want three people discussing it, a score based on that. The committee is open for .. . Application is open for the whole committee. And since the study sections are focused on a subset of science, then most of the people in the room are familiar with that, that area of research. Then the chair will summarize the discussion before all the reviewers will give their final score. Everyone scores .. . All the reviewers who are not in conflict, they'll submit an overall score privately, and the scoring range is one to nine, one being highest impact, nine being less of an impact, the other end of the scale. They give individual scores, and then the average is taken for the whole committee, times it by 10. Your final score you'll receive, your overall impact score, will be between 10 and 90. So overall impact: This is assessed for every application. It's sort of what the reviewers are focused on for any kind of review, but how we define overall impact differs on the type of application, and you can imagine a research grant versus a fellowship, a graduate or postdoc fellowship or a resource grant for building. It's going to have a different definition. But most of the grants NIH reviews and sort of the bread and butter for the investigators is the R01 application. That's one of the research project grants, or you might hear RPGs. So for this definition .. . For this application type, overall impact is defined as the likelihood for the project to exert a sustained, powerful influence on the research fields involved. So the overall impact takes into account the five scored criteria and the additional criteria. Now, this is the second take-home message that I hope you come away with, and that is before you write .. . When you're writing the grant, before you submit it, you'll be submitting under a funding opportunity announcement, FOA. That might be a specific one from an institute or just the parent R01, meaning if you just have .. . You have an idea. You want to submit a grant. You're not following any specific calling, you'll use the parent FOA. But every FOA in Section V lists the five review criteria, and there are a number of questions that the reviewers will use to guide the discussion. So when we were in college and maybe grad school, you'd say to the teacher, "Can you tell us the questions that are going to be on the test tomorrow?" Usually didn't work. But in this case, you're able to see what the reviewers will use, what questions they're going to ask as they're going through and they're scoring the five criteria and giving an overall score. So it's very helpful. A lot of it is kind of template language for a lot of the research project grants, but certain announcements or RFAs will have additional questions. For this RFA, did the application address this topic? So it's very helpful, and doing it as you're writing the grant is also very helpful. So we have five scored criteria for any grant. For the research grant, these are significance, innovation .. . Sorry, significance, investigators, innovation, approach and environment, and they differ for training grants. They're focused on mentoring and candidate, but the five are listed in the FOA. Each review criteria is given an individual score, and they can affect the overall score. Now, the overall score won't be an average of the five criteria. This is probably one of the most common questions that program officials get after the review. They'll see the summary statement. I had twos and threes and ones for most of them, but my overall didn't average .. . When I averaged it out, it was different, and that's .. . Well, it's not a simple average, and the reviewers have leeway in how much they weigh each of the criteria to affect the impact score. There might be a fatal flaw in one specific criteria that really drives the score, and that is fair. That's part of review. So addition to the five scored ones, there are the additional review criteria. They don't receive an individual score, but they can affect the overall score, and these are if you're using human subjects, the protection of human subjects, inclusion, use of vertebrate animals and then biohazards. And then finally there are additional review considerations. These don't affect the score, but the reviewers will talk about it after final scoring, and you will get feedback. Budget is the main one in this area. You might get some comments on the budget. That's just for the program officials and then the institutes to look at to consider, but again, doesn't affect the score. So the final impact score. Like I said, the reviewers will score one to nine, one being highest impact, nine being lowest. This is the opposite of the way most one to nine or one to 10 scale where 10 is usually the best. NIH does it the opposite way. I don't know why. But keep that in mind when you get your final score. If it's .. . Ten is the highest. Ninety would be on the other end. As I said, they're averaged together, multiplied by 10, so you get a whole-number score, 10 to 90. On your summary statement you'll get individual criterion scores, one to nine. Each reviewer will list in their critique, significance was a two, investigator was a three. So you'll get those to give you an idea of how they assess those. And then some applications, mostly the R01s, will get a percentile. So when you get your final score in your Commons account, you'll see a score, and then you may or may not see a percentile. Percentiles are used to try and normalize scores across study sections. For example, the NEI R01s are reviewed in four or five different study sections at CSR. Different study sections, even though it's the same policy and procedure, it's different people. It's just human nature you might get some different scoring patterns. So they normalize that, and then NEI might say, "Well, we're funding the top 17 percentile across these .. . for all of the R01s." So they won't go just by the score. They'll use the percentile for that. And then often it won't get a percentile if it's not being compared across study sections. For example, the K awards, the mentored awards, we review them at NEI, and they're all in one study section. So they're only compared to each other. So there's also a streamlined process. This was .. . NIH decided on this a number of years ago, and only the most meritorious applications will be discussed at the meeting, so when you get your score, you might get a score. It might say ND. It's not North Dakota. ND means not discussed. So it's about the top half will be reviewed, but it's very important .. . I'm sorry, will be discussed, but it's very important to understand that they're still reviewed. They still have at least three reviewers who read it, who assessed it. You'll get a final summary statement that has the individual reviewer critiques, individual criterion scores, but it's not discussed at the meeting, so it won't get an overall impact score, and it won't get .. . The discussed ones get a resume or summary of the discussion at the meeting. And, like I said before, some study sections are very large, and it used to be 2- or 3-day meetings to review them all. So in the interest of the reviewers' time and effort, about the top half or the most meritorious ones are discussed, and this is based on the preliminary score that the reviewers send in before the meeting. So the outcome of review, you have two pieces of outcome. One is the impact score. That will be within 3 business days is the rule. It's usually much quicker. Used to take longer when they were .. . when all the scores were entered on paper, and they had to be manually entered and then checked. But we still go through and double check to make sure there aren't any errors or typos when they're submitted online. So 3 business days you'll get a score, and within 4 to 8 weeks, much closer to the 4-week time, you'll receive a final summary statement. Again, this will be the comments from the reviewers, and then the resume of the discussion, the summary of the discussion if the application was discussed. And then if you look at the slide, the appendix material has more information on the summary statement, and this is all done through your eRA Commons account. That's where you see where your application, where it's assigned. You'll see the score and the summary statement. So after the review meeting. So as soon as the meeting is done, your point of contact is no longer the Scientific Review Officer. In fact, we're not able to discuss anything after the meeting. So your point of contact is your program official. When you get your score, I'm sure you'll be anxious to talk to them right away. My advice is, wait until you get your summary statement, and then reach out to your program official because they're not really .. . They're not going to be able to talk about your application until they see the summary statement because the summary statement is the official outcome of the review meeting. So you can reach out and just say, "Hi, we'll set up a time after I get my summary statement." So you might also get an e-mail about Just-in-Time information. So this doesn't mean your application is definitely getting funded. What they do is there's certain information that's needed when applications are funded. So they might do the top 30 or 40 percent of the applications. They'll send the e-mail. If there's any unresolved issues from the review, human subjects, vertebrate animals. Some things you don't have to submit at the time of application, like IACUC, but you'll need before the award is given. So if you get that e-mail, again, it doesn't mean you're getting funded. You're just in the top percentage, and definitely reply and provide the information as quickly as possible. The reason they do this is to try and speed up the process so that once a decision is made, they have the information to fund the applications. And then you can consider your options afterwards. You can submit a new application. Even if you got a review and you're submitting it, you can mark it as new or revised or amended application. If you resubmit an application, it's an amended application and resubmission, you can include a one-page introduction addressing the review. If it's new, then it's treated as a brand-new application. And this is very rare, but in some cases you're able to appeal the outcome. Talk to your program official about that. There are only very specific cases when you can appeal a review application. For the second level, which isn't as commonly known about, is the National Advisory Council. So this is a group of scientists, clinicians as well as public member parts of advocacy groups for that are covered by that institute, and this is a group that basically advises the director of the institute. So the advisory council, so they advise a director on research priorities, diverse policy issues, concept clearance. If an institute has a new initiative or they want to put a request for application, which is a very specific call for applications in a certain area, these all have to be cleared by the council before they're put out on the street, and the council also talks about funding priorities. So they have the experts in the field and advocacy groups to talk about that, what areas need to be addressed? So they do .. . If there's an appeal, they'll discuss that, but for the advisory council, it's important to know that they don't rereview applications. They're looking at hundreds and thousands. It's a very high level. They mostly go by the score of the initial review group, but they will talk about priorities of that institute. So who makes the funding decisions? So the short answer and the correct answer is the IC Director makes the final funding decisions by law. However, for any given institute it could be 100 or a few thousand applications per council round, so obviously the director is not going to read through and arbitrarily fund this one, not this one. So the decisions are based on the review outcome, which is the score, the percentile from the study section, priorities and mission of the institute. Sometimes there are congressional mandates for certain areas to be funded. Recommendation to the advisory council and of course available funds. They can only fund a certain number, so if they prioritize certain ones, other ones are going to get moved down. It's just a zero sum game. So review integrity, so we touched on this briefly. I recommend looking at this guide notice here in this slide to talk more about it and the consequences. So review integrity is taken very seriously at NIH, and it's the job of all of us NIH employees, applicants and reviewers to make sure peer review integrity is maintained to avoid any instances of scientific misconduct or breeches in confidentiality. And unfortunately there have been some serious cases, and there are serious consequences to that, as pointed out in this guide notice. In severe cases people can lose funding, can be barred from applying for NIH funding. So two areas that are important under this topic: conflict of interest. So for the study section, all of the reviewers will check a list of key personnel for all of the applications, and they will point out if they have any conflicts. They sign a premeeting and post-meeting COI form pledging that they've checked for conflicts. They don't have any. They remove themself from the review if they noted a conflict. Most conflicts are what we call out of the room, meaning, "I'm at the same university as this applicant. Even though I don't know them, it's still a conflict." They step out of the room during discussion, but if they're .. . If they are one of the key personnel on an application, then they're out of the meeting, and they wouldn't review. And then finally confidentiality. This might seem obvious, but we have to say it because it, unfortunately, happens. If you're an applicant, do not under any circumstance contact the reviewers for the meeting. Thirty days before the meeting, you'll see the roster will be available with just a list of people. Do not reach out to them, and if you're a reviewer, do not contact the applicant under any circumstance. Now we realize these are small fields, very focused areas. You might be at a conference, and you might see someone, and you know they're on the review meeting. You don't have to run away and hide. Just do not talk about the review at all. Again, these are things taken very seriously, and there are consequences for it. So just don't talk about the review meeting is sort of the takeaway from that. So your action items, join the Guide Table of Contents. So every Friday an e-mail will go out with all of the new funding opportunity announcements, RFA notices, guide notices, changes in peer review, updates per round. Very important, and I can you the experienced investigators, every Friday get that e-mail, glance through it. You'd be surprised, and an institute you wouldn't even think of applying to might have a notice on something that overlaps with your research. Look at Section V of your funding opportunity announcement before you apply. Uphold review integrity, and then finally, if you're able, I highly recommend listening to the mock study section at 4 o'clock.

Megan Columbus: All right. Are we ready, then, for a Q&A? Yeah? So if we could bring the folks who have been kind enough to answer questions in the background onto the screen, and we can stop sharing the presentation, Sylvia. Thank you. All right. So .. . And we're going to have to keep these quick because we have a lot of questions, and so let's keep it moving. How long after advisory council are funding decisions made?

Brian Hoshaw, PhD: That varies. I'll be honest with you, it's hard to put a time frame on it. It could be 2 weeks. Could be later. It depends on a lot of things, when the funding is finalized, anything that needs to be reconciled with the application, the Just-in-Time information. So it really varies, and for all of these, talk to your program official. They can give you more specific information.

Megan Columbus: Yeah. Great advice. Thank you, Brian. How are new and resubmitted proposals treated differently?

Dharm Rathore, PhD: Well, I can answer that. Essentially there is no difference. We will treat them with equal care and love. We will make sure that the best reviewers are assigned to those applications, and they will get a thorough review.

Megan Columbus: Thank you, Dharm. I know that someone is interested in whether the same reviewers are reviewing the application for that new and resubmitted application, and can you actually request to change reviewers in the cover letter or request the same reviewers?

Brian Hoshaw, PhD: So there's no guarantee you'll get the same reviewers, and you're not .. . Any request like that will be ignored, to be honest. Unless there is a conflict with a reviewer, and you can list that in that PHS assignment form, which I said, any conflict. If there's a real conflict, you can point that out, but those sort of requests .. . We try and have the same reviewers assigned to it if it's an amended application, but sometimes reviewers aren't available for the next meeting. Sometimes they're a PI or they're in conflict with the whole meeting, so there's no guarantee you get the same ones.

Megan Columbus: Right, and so that might answer another question, which is, are those preferences stated in the assignment request form actually honored? And do you want to speak to which ones are kind of more automatically honored than others?

[ Chatter ]

Dharm Rathore, PhD: Go ahead, Brian.

Brian Hoshaw, PhD: So the conflicts are looked at very seriously, and they might follow up with more information because sometimes they'll say, "These five people are in conflict because they're doing the same research," which isn't a conflict. We might get more information. They're taken seriously. If you request specific reviewers, those are ignored because we don't know if it's you're being sincere and giving the top people in the field or it's someone you know and you're friendly with, and you don't realize that that constitutes a conflict.

Dharm Rathore, PhD: And just to add a follow up on that, so if you request that person X should not be reviewing your application, and you see them on the roster, that doesn't mean that they're reviewing your application. They could have been added to the meeting to review other applications as well. So rest assured, SROs take the assignment request form really seriously. They will go over every detail, and they'll try their level best to mitigate any situation of conflict.

Megan Columbus: Thank you, Dharm. Great advice. This is a hard question. Generally, is there a fundable score? How do you decide whether to advise and resubmit?

Brian Hoshaw, PhD: I hate to cop out, but talk to your program official because every institute is different. Every field is different. There's no answer to that.

Megan Columbus: Yeah. Thanks, Brian. That's exactly right. So how is it handled if one of the three reviewers is very divergent in their scores from the other two?

Manana Sukhareva, PhD: I can answer this question. So every summary statement is read by your program official, and they're looking at the scores, and it all depends on the concerns from the reviewers and their funding decisions. So it's all case by case, for sure.

Megan Columbus: And how is that divergence handled in the meeting?

Manana Sukhareva, PhD: In the meeting, so you will receive .. . All the reviewers that do not need to come up, have a consensus. They use their own judgment, and everybody assigns their scores. Other reviewers have a range from those assigned reviewers, and they can .. . They vote either within the range or outside the range, but they have to speak up and say why they are voting outside the range if so. Does it answer the question?

Megan Columbus: Yeah, I think it does. Thank you.

Brian Hoshaw, PhD: And I'll say, that was one of the topics in the live mock study section. So to get more detail on that exact example .. .

Megan Columbus: That's right. That's right. Thank you, Manana and Brian. All right. If you submit before a deadline, what editing formatting mistakes are overlooked? I would say none. It's irrelevant.

Brian Hoshaw, PhD: Overlooked by you or by other .. .

Megan Columbus: I'm guessing they're talking about reviewers, right? And so I think this just gets to good grantspersonship and making sure you're putting your best foot forward, and whether or not it's before a deadline, nobody is overlooking anything. If it is immediately before .. . If it is before a deadline, however, and your institution has recently submitted and you're within a 2-day viewing window still before the deadline, you may be able to get your institution to pull it back, but you'll have to work with your institutional officials on it, right?

Brian Hoshaw, PhD: Yes, and I would definitely say submitting early is great advice. The deadline is January 25th at 5 p.m. You go to there at 4, you might get an error message saying you're missing this document, or the FOA says it's 12 pages, but you're at 15. So once the deadline passes there's no leeway. So if there's any way you can submit early, you'll be saving yourself a lot of headache. You'd get more leeway .. . You'll get an error, you can go back and correct it, but those errors you can't correct after the deadline passes.

Megan Columbus: Absolutely. There were a couple of questions about the differences and how to handle for primary and secondary institute assignments and what happens if a proposal lays between two institutes and the applicant hasn't requested one.

Manana Sukhareva, PhD: I can answer this. So if your application came to NIH and it was accepted and is compliant, so it will be reviewed no matter whether you requested institute assignment or study section assignment. And it's based on the IC's goals and programs and the topics, and so it will be assigned, will be decided.

Megan Columbus: Thank you, Manana.

Manana Sukhareva, PhD: It will not be hanging anywhere in between.

Megan Columbus: Right, although you do need to be careful to speak with the program officials at those institutes to figure out which portfolio it might actually fit in because you don't want something that doesn't really fit well anywhere, right? So it's worth having that conversation.

Dharm Rathore, PhD: Yeah, and just to add to that, remember, you always have the opportunity to come back to the NIH after submission if you feel that this is not the best institute assignment for your application. Have a conversation, and it happens often that the primary assignment will switch between two institutes. It's common. It's not something that if you request NIH will get upset about it. That's not the case. So feel free to request if you think we didn't make the best assignment for you.

Megan Columbus: Thank you, Dharm. Last question, I think, are new investigator R01 applications compared against late career investigator R01 applications? And what exactly is that new investigator bump on an R01?

Brian Hoshaw, PhD: So when the application, the R01 application, the early stage investigator applications are reviewed at CSR, they are clustered I think pretty much for all of the study sections. So they will be reviewed together kind of separated out in the review and saying, "Okay, now we're doing the early stage investigator. We're going to review those." You get a little bit of leeway on publication and preliminary data, sort of like keeping in mind the career stage, and then as far as .. . What was the second part?

Manana Sukhareva, PhD: Bump. Bump.

Megan Columbus: I think it's bump.

Brian Hoshaw, PhD: Bump. Institutes handle it differently. They do try and find a certain level, certain percentage of early stage investigators. It's all handled differently, but you do get .. . They do look at that to make sure that there are a certain amount or percentage of early stage investigator compared to the other portfolios that are funded each round.

Megan Columbus: So they're not .. . So in peer review, they're not getting a bump in peer review. They're getting reviewed potentially kind of together. Is that true?

Brian Hoshaw, PhD: Right, and then certain considerations.

Megan Columbus: And then when the institute is making funding decisions, that's when if there's going to be any special consideration, excuse me, that would happen.

Brian Hoshaw, PhD: Right, and that's a good example of second-level review where they might say .. . They might reach a little bit for an early stage investigator if they're not .. . they don't feel like they are supporting enough, and that's where that comes in, working with the program officials.

Megan Columbus: Great. Okay, one last question. What's a conflict look like besides obviously someone's best friend or relative? Is it knowing people in your field professionally? Is it .. . Where is that conflict line drawn?

Manana Sukhareva, PhD: That's a very complex question with a lot of answers, long answers, I would say. Well .. .

Megan Columbus: So actually .. . So if it's going to be a long answer, then maybe we should refer people to the peer review booth where we have review officers who are sitting there waiting for answers given that we only have another minute left in this session. I would hate to give only a partial answer.

Manana Sukhareva, PhD: Yeah, well, I just briefly .. . There are three types of conflict. It's institutional conflict, collaboration publication and also personal, which is family or anything else, and all three have certain rules for us, for SROs to determine whether there is a conflict or not. So .. .

Megan Columbus: All right. Thank you, Manana. Thank you to our entire panel, and thank you to everybody who joined us today.