After Your First Award: Next Steps in Your Journey with NIH

Mike Reddy: Hello, everybody. We're just waiting for people to join us. So after the presenter for today is finished, he will respond to questions, and please put your questions in the Q and A box. There's also a chat window where you can talk among yourselves. Okay, so welcome to this talk. The presenter has shown up, and it's me. My name is Mike Reddy. I'm a program director at NIGMS. That's where you can e-mail me if you want to talk to me after my talk. I'd like to dedicate my talk today to the memory of Dr. Jeff McKnight. He was an assistant professor of biology at the University of Oregon, and he passed away just a few weeks ago. Just briefly, a little bit about myself just to give you a little footing, so as you know by now, I think, there's 27 institutes at the NIH, and the one that funds the most basic research is the one that I work in, NIGMS. So NIGMS has five different divisions, and this is the division that I'm in, GMCDB, and within my division, there are three different branches, and I'm in the Genetic Mechanisms Branch, and this sort of division is more or less what you'll see at most of the other institutes at NIH. Within the Genetic Mechanisms Branch, my two scientific portfolios, the first one is DNA replication and DNA repair, and the other one is protein synthesis, so you're really seeing me in 2D, but one day some of you will hopefully see me in 3D, and when you do, it's more or less this is what you should be looking for. So now I'm going to ask you ... Imagine it is New Year's Even in the year 2049. You're thinking on New Year's Eve, what has your career looked like these past 30 years? And I'm going to sort of give you a sense on my past experience three possible sort of career trajectories in a metaphoric sense and each one of them say a few words about it. So I'm going to plot this versus increasing significance, and the first career trajectory that you might expect is a moving sidewalk, and that's more or less a good amount of significance, and it's sort of the vision is to have that ... You get on a sidewalk like the long sidewalks at a giant airport. You get on, and you stay on that path for a very long time, and nothing untold really happens. You just keep moving in one direction, and you can imagine that many people have that career. They get their first R01 from NIH, and 5 years later, they renew it, and 5 years later, they renew that, and lo and behold, 3, 4 decades go by, and that's their career. There's another sort of metaphoric trajectory, and that's like being on a roller coaster, which you can envision what the roller coaster is like, and I think that, for the most part, the majority of people are going to have a roller-coaster career. I know that I certainly did. I had a few highs, so you get up to the top, and then you come down often very quickly. You find yourself at the bottom, and then you sort of work your way up another hill on the roller coaster. You go down. You go through some curves, some twists, and eventually it ends, and you're more or less where you started, but because you've had highs, very highs sometimes, and very lows, it's quite different in a conceptual sense in terms of significance from a moving sidewalk because often those highs and lows reflect you trying to do something new or perhaps making the wrong choices and have to recover from it. Note that the last one that I'd like you to think about is the Rube Goldberg machine, and for the few of you who are a certain age, which most of you are probably not, you might remember that one of the first commercially available Rube Goldberg machines was a Mouse Trap Game, so one thing leads to another, leads to another, leads to another, leads to another, and if all of the things work together, you have a very, very interesting path from an initial event through many, many, many, many different steps to a final successful event, and I think if you really want to look for something that's very, very significant, you might want to think about trying to get towards the Rube Goldberg path. So now I'm going to ask, what should be your overarching mind-set as you begin to develop your own research program? And some of you are already well on your way. I realize that, but in this talk as you can probably already tell, it's sort of meandering between different points of views because some of you are quite early. Some of you maybe are not even have an award yet, and some of you are well into your first award. But what I sort of like to think about thinking about my career in academia when I had my own lab looking back and thinking, "Mm, maybe I should've thought like a farmer." So how do you cultivate a research program? Well, you apply fertilizer. You rotate crops. You don't overwater. You think about what's selling for the highest crops at the market, and most importantly probably, especially in these times, you plan for a drought. So for instance, rotating crops could be a metaphor for making sure that the people who are working in your lab, they're getting something out of working in your lab, and of course you're getting something out of them being there. Don't lie to yourself, and if you find a student who is not very successful on a project, you might want to change that project, or you might want to switch things up with the student and so forth. Don't overwater means in a sense that if you happen to have somebody in your lab, say, a postdoc who's extremely successful, don't hover over him or her to the extent where they feel stifled. Make sure that you allow them to make their own mistakes. Anticipate that they're going to make mistakes even if they had a long string of successes and so forth. Now what's selling for the highest price at the market? So that has to do with you being reflective of the bigger picture because a lot of times early on in your career, you find yourself in the weeds. You might not be looking at the 30,000-foot level, which is more or less what my job entails. And so if you're working in a particular area and you know eight other people around the country are working on more or less the same area, using more or less the same research organism, then perhaps it's time for you to change. You could change the research model that you're using, or you could change the question itself. And plan for a drought means just that. People leave your lab. You got to be ready for them to leave unexpectedly, and that's going to shut down a very vital area of your research. You better think that that could happen. You might run out of money for whatever reason, and you still have 2 years left to do research, but you don't have any money and so on. Now, on this last thing about planning for a drought, one of the things that you may or may not think about early in your career is to look for secondary sources of funding. While this could be spare change for some, it could be a lifeline for others. One of these secondary sources of funding are diversity supplements, and as you can see here, this is their purpose, to basically support eligible students and postdocs and maybe even investigators who, for instance, might do a sabbatical in your lab from groups that are underrepresented in biomedical research. Another type is admin supplements, and these are usually things in emergencies. So you have one Minus 80. All of your stocks are there, and the circuits blow out over the weekend. You come in on Monday. It's the only Minus 80 in your department, and now it's not working any longer. That's the time to contact your program director and quickly find out the chances for you getting an administrative supplement for such an event. One of the things to notice is that I realize that I've told you the institute that I'm coming from, and maybe some of you are in fact funded from NIGMS, but most of you probably aren't. These supplements that I've just used right now, not every institute center at NIH will offer these, so you also have to keep that in mind. The last source of secondary funding I'll talk about is from private foundations, which you're probably all aware of. Maybe you've tried. Maybe you in fact first got money from private foundations that you used for the seed money to get your first R01. Thing about private foundations from our point of view is that we look for scientific overlap when we're going to fund something new or when we're going to continue funding something. So if you suddenly got $500,000 a year from a private foundation working on basically the same thing that we have funded you for, well, then that's going to be a problem as you can imagine because we look for scientific overlap between all of your sources of other support. Now I'm going to switch topics a little bit here and very briefly talk about this, mentorship, but before I do, I want to bring your attention to the fact that the ... There was a webinar that preceded mine. It started at 2 o'clock by Nicole Redmond, and it was a very, very thorough discussion about mentoring, much more thorough than anything I'm going to talk about now, and if you didn't watch it, you should go back when you have a chance and watch it. So I'm just going to give you again just a couple sort of big-view points of view from where I'm sitting, both my past in academia as well as all of the grants that I manage. The one clear rule is that one size doesn't fit all, so you'll have to deal with that, and in fact, not everybody feels they need a mentor, and maybe they don't, and some people in fact might be better off with a muse. So this is a picture of a magazine I picked up a while ago actually off of an Amtrak train, and on its cover was this interesting topic, why mentors matter. There's a picture of a dancer, and in the back is her longtime mentor, and this dancer, as many of you probably recognize, is Misty Copeland, and what she said is, "You have to be open and receptive. There can be people in front of you who could be great mentors, but if you can't be open to it, it's pointless." I hope you appreciate this little spin thing that I did there with the slide for the dancer. Being a mentor to your mentees, so this is really talking to you not for you looking for a mentor to help your career but for you being a mentor to mentees, people in your lab. So when I look back on my academic career, I don't really remember all the good stuff I did as someone's trusted mentor, but I do remember if I reminisce is, I regret the few times that I dropped the ball, and I perhaps didn't take my mentoring responsibilities as serious as I should have, and I recognize looking back that I should've done better in a few cases. And so I'm drawing this to your attention so that you should be aware of this about yourself, that it's a huge privilege and a huge responsibility to be somebody's mentor, and so my one rule, which will sound very familiar if you're in the medical field, is to do no harm. Okay, so now I'm going to switch to another thing that was covered in an earlier talk, again, in today's track C sessions, and that is about this amazing tool that NIH has available to the public called RePORT, and many of you may have used RePORTER before to search for certain similar scientific areas or to figure out maybe what study section to send it to, but also, don't forget that it's also a good tool to find possible mentors or collaborators. So again, there was a webinar at 1 p.m. given by Brian and Cindy about the new reporter, and if you know what the Open Mike is, Mike Lauer talked about that in an earlier talk. Recently, he had a blog post about the new RePORTER that's just very recently come out. Now this word, collaborator, I just want to spend a couple minutes on that because it's something you think about, and I'm really talking to those who are maybe actively searching for a collaborator, and again, this is an expansive topic. It's probably something the whole talk could be on, but I'm just going to leave you with this, that I think, again, looking at many, many awards, that the best strategy is to hold out for a collaborator who is genuinely more interested in assisting your career than one who is looking for you to help their career. So many of you are early-stage investigators or recently were. Of course if you have received your first NIH award, then you probably will have lost your early-stage-investigator status, but for those of you who still are technical ESIs, I've put up this long word slide with the take-home lesson that you should think long and hard about submitting a multiple-PI application. Now MPI awards, they serve a purpose, and they're obviously of some use to many people, but if you're an ESI, you should know, and that's the bullet here in the middle, is that you will lose your ESI status because you'll be grouped together with other people who aren't ESIs, and most study sections sort of clump the ESIs discussions together, so by going onto an MPI, you'll just be in the whole sort of pot of established investigators. I'm also using this slide not just to talk about this topic but that most institutes have a lot of information available that even some of my most established PIs don't take advantage of or don't even know it's there. So for instance, this particular slide was a post that was written by the director of a division in NIGMS. Her name is Dr. Rochelle Long, and she deposited this in what's called NIGMS Feedback Loop Blog, and so many people in NIGMS will occasionally write topics that are quite important, and this is also a time for me to remind you that most institutes are now on Twitter as well. Okay. Now I'm going to switch to a different topic, and that is your interactions with people who make their living as program directors. So your program director could be from a certain perspective a mentor, but there's a built-in professional firewall between us, and we can't be your friend per se, nor can we give you specific input about the scientific details in your application. So the friend-per-se thing is pretty much clear. I have good relationships with the people whose award I manage, but it can only go so far because I have a responsibility to the many, many hundreds of people who don't get a chance to talk to me, and so it has to be an even playing field, and sometimes that just needs repeating. Specific input is also something that early in your career you might not understand that if you send me a page of your specific aims and each specific aim has four subaims and you want me to edit it and send it back to you and give you a sense of whether it's going to get funded or not, well, that's not going to happen obviously because that's not really our position in this chain. So the specific input that we'll do is, we'll judge whether your intended application is congruent with our research priorities. Let me give you a couple just really more or less maybe almost case studies about interactions. So is this good or bad? It's 8 a.m. In the morning. You find out on Commons that your scores from your application are released, and at 8:03, you call up your program director and ask if your 31 percent score will be funded. Well, it's not such a good thing, so let's put that in the bad category. At a minimal, what you want to do is wait for your summary statement. Read that summary statement. Read it again, and then share it with a minimal of two other colleagues, one who really doesn't know anything about your area of research and the other one who knows a lot about it, and then after you've done all that, then schedule a phone call with your program director. Good or bad, it's 3 hours before the deadline of your application. You call up your program director and ask them penetrating questions such as, "Is 10-point font allowed if I use Baskerville Old Face as my font? I grew up in Europe. I want to know, is the current margin limit equal to exactly 25.4 millimeters, or can I get away with 24.0? The instructions indicate that I can send in a one-page update after I submit my application, but I'm a new investigator who works in an IDeA State, and I was wondering if I could get permission to send in 1.5 pages." So these sort of things are actually asked of us, and it's important to recognize that these sort of things are really better to be asked elsewhere because we don't always know all the answers to the most recent compliance issues, and again, this has to do with your submission, and we're usually in the post-summary-statement interactions with the awardee. After you have an award, you have to turn in research performance progress reports, annual reports. There are several different RPPRs, and the one that you probably will use for a while is the annual RPPR to sort of tell us your progress, and believe it or not, we really do believe them, and so you need to keep that in mind. I still have PIs who are rather amused that I might call them up asking them specific questions about things they wrote in their annual report. Some of the things we're looking for in your annual report is, for instance, you might have some new foreign collaborators, and we have to know that and keep track of that. You might suddenly start doing what's defined as human research where before at the beginning of your award you didn't. Your research might have drifted considerably away from your original specific aims, so we got to get you back on track for that and so on. So take these seriously and just remember that future years of funding are not guaranteed. I want to now encourage you to establish and maintain relationships with your authorized organizational representative, AOR, because if you haven't experienced already, it will come a time when you really, really need them. So if I ... Something important that they do is to keep current with many latest requirements, FOAs and so on, so let me suggest that you be proactive and schedule an annual presentation, say, at a faculty meeting with your AOR, and there they can talk about these important items. Some of you use animals, and there's a lot you have to go through to legally use animals for an NIH-supported research. You find out that your animal certification is expired. You had no idea, and guess who does know, your AOR. Finally, all official correspondence to us has to come from your institute via your AOR, not the PI. So if you're unaware of this and you send your documents directly to us on the same day that your sole AOR has left for their vacation, well, that can be just too bad, so stay on top of this by making good relationships with your AOR. So you may or may not be given the opportunity to review for the NIH, and I suggest that if you are, you should seize it. A lot of times after you get your first award, CSR will ask you, "Would you like to do some ad hoc review for us?" There's also ... If you have not ... If you've applied for NIH awards, you haven't gotten funding, but you have gotten your summary statements back, you might want to consider looking into this, Early Career Reviewer Program that the Center for Scientific Review runs, but again, it's not for everybody, and it's certainly not if you got funded. So the next brief thing I want to bring your attention to is high-risk, high-reward research programs, and the programs are shown here taken from the Common Fund site, and these are something you should look at depending on your career stage, so this one here, the New Innovator one, you must be an ESI, for instance. The Pioneer Awards DP1 is open to all career stages and so on. Again, many of you might have already been aware of these, but if you are not, I really suggest you go looking at the Common Fund for these programs. So this is more or less the whole 9 yards of various things that I've gone through, tried to go through. I know it's a real mismatch, but that's the nature of this particular topic. Most of what we do, program directors, we'll again come in after you receive this. Excuse me. So my final thoughts before we get to questions is, "Life is short. Enjoy your good days. Hug your family. Don't waste time on things that don't interest you. Love each other. Forgive each other. Find balance in your life and maintain it." My daughter wanted me to tell you, how many questions do you have, one, two, three or four? Thank you.

Shoshana Kahana: Hi, Mike. Can you hear me okay?

Mike Reddy: Yes. Can you hear me?

Shoshana Kahana: So, yes, I can. I'm going to go ahead and just read the questions to you if that's all right.

Mike Reddy: Yes. Thanks, Shoshana.

Shoshana Kahana: Okay. So the first question that we get is from Maria, who asks, "When you change a project that you do not have publications, it will be very difficult to obtain an R01 or an R21 if you are not an expert." Is that something that you can speak to?

Mike Reddy: So that's true to some extent, and that might be a good time actually for you to find a collaborator, right, that maybe you do put in an MPI at that time, so you could get into a new thing that way. It also depends where in your career this comes at. If it comes at a time, for instance, a lot of people use sabbaticals for that. They might use their sabbatical to go into a totally new research area, generate new data in somebody else's lab and use that. There are also mechanisms. Again, each institute is different. We have a mechanism called the MIRA. It's an R35.

Shoshana Kahana: Yeah.

Mike Reddy: And really what they're funding there are big-picture ideas versus your typical R01 with specific aims, and they're also funding your track record, so you might have had a track record for a few years, and then maybe you have this break in that track record where you're trying to get something else started, but if your ideas are very robust and very highly possibly significant, I think you still can find things.

Shoshana Kahana: Sounds good. We actually got this question quite a bit yesterday in the After Hours chat for NGRI, and the question is, "How about new investigator status? Is it as important as ESI to maybe avoid multi-PI arrangement?" So I think it's sort of a two-part question.

Mike Reddy: Yeah, I think that the ESI is much more important than the new investigator, and the new investigator means you don't have ... usually means that you have funding from the NIH, but that doesn't necessarily mean you're early in your career. That's one of the things that sometimes people don't realize. I have new investigators, for instance, who are defined as new investigators, and it turns out that they came here from Europe after 20 years of doing top-shelf research, and they have submitted their first NIH grant, and I'm like, "Oh, this person has been around for decades," and so the new investigator for us, for instance, NIGMS, at the best, what it does is, it might give you an extra year of funding because NIGMS, and there are other institutes, for established investigators, we only fund 4 years, not 5, but ESIs get 5 years of funding, and if you're a new investigator and if we feel you're a new investigator and not somebody who came from someplace else after working for 20 years successfully, then we offer you the fifth year of funding as well, but I think part of the question was for me to just say what probably they know already, which is I think that you should more cherish the ESI status than the NI status. Maybe I'm reading into that question. I don't know.

Shoshana Kahana: No, no. I think you're right. I'm going to switch gears a little bit now. This is a good one. "Nice talk. Thank you. Can you give us advice or tips for successful R01 renewals?"

Mike Reddy: So what was that first thing you said at the very beginning?

Shoshana Kahana: "Nice talk."

Mike Reddy: Oh, wonderful. [Indistinct].

Shoshana Kahana: Yes.

Mike Reddy: Let me [Indistinct] my last 10 minutes on this question then.

Shoshana Kahana: Yes.

Mike Reddy: So, yeah, so to give you ... That's kind of an open-ended question, but is that what the question is? Okay, so I think the renewal thing, again, again, thinking like a farmer, right, you best be looking at the weather for the next year. There might be a drought planning, so you have to be on top of when you renew. You might want to even think about renewing a little bit earlier than at the very, very dire end. Your renewal can actually be put off a year or so because if you have funds left at the end of your award time, you probably know. Maybe some of you don't. You take something called a no-cost extension that allows you to sort of go through the extra year using the few funds you have still working on the same project. There's many things to say about renewals. I can tell you that study sections tend to look at your productivity, so this is a two-edged sword. It's sometimes reflective of somebody doing good science, but it doesn't always necessarily mean that because maybe they haven't published something for a year or a year and a half, but they're on the cusp of publishing several very high-impact results, and so there isn't just one formula other than the reality is, you usually don't get your renewal the first time you submit it, so you need to factor that in too in terms of your timing. I think it's a good idea, whether it's your first submission or a renewal of a 3-decade-old R01 to never, ever think that your A0 is going to get funded. It probably puts you in a better position strategically than to think, "Oh, they're definitely going to give me this. I've had 46 publications the past 5 years."

Shoshana Kahana: That sounds great. Again, I'm going to switch gears a little bit. Next question is about sort of the effects of COVID leading to many research programs experiencing a significant delay. "What is your guidance about reporting on this in the RPPR?"

Mike Reddy: Yes, that's a good question, and unfortunately obviously I would have preferred not to have to answer such questions because that's what has dominated my PI's life, and that's what has dominated this end even though the PIs don't see it. There is a lot of people out there, especially the first few months, asking more or less this question. So you document it where you sort of talk about problems you might have. In your RPPR, there's always a section like obstacles or unforeseen circumstances and such. What I will tell you is that, as of the last few months, NIH is actually documenting this, so if you put a statement in your RPPR that you were out of the lab for 6 months because your institute was closed down, there's actually official documentation now, and that becomes part of your permanent grant record, so make sure at the very least you do say something about it, and just know that we understand the situation. Eventually, depending on how long this goes, our responses might be more robust, but for now, it's still a work in progress, but do document to whatever impact. Not all people are equally impacted. Some people do things that are more like bioinformatics, and we've actually had a couple examples in my division of PIs actually stating, "You know what? This COVID really didn't affect me at all because everything I do is data analysis anyway, so it hasn't been a big deal." Other people have obviously suffered tremendously, so it's a whole spectrum.

Shoshana Kahana: Yeah. Okay. We have a ... Again, switching gears, we have a question about, "At what point in someone's career should one consider a K24?"

Mike Reddy: Yeah. So one of the things that's important ... I was a practicing scientist, and so I'm just going to go for the I-don't-know response, so the K awards, I know that there is ... There are taped entire lectures about K awards, but I have been here for almost 9 years, and I have never, personally me, handled K awards. NIGMS has a separate division that does training, and so some of my colleagues in NIGMS, so if you're particularly interested in NIGMS, which also has a huge training component to our institute, then you should be able to find that out. You can certainly e-mail me and give it a second chance, and I'll be prepared for this specific K question next time. Sorry.

Shoshana Kahana: No, no, no worries. I shouldn't have put you on the spot. Let me ... Looks like there are a couple of questions about the MIRA program. The embedded questions are, "Is it a program that all ICs participate in, and also, can you speak a little bit to the kind of faculty positions that folks need to be in, in order to be eligible for the program?"

Mike Reddy: Okay, so the first thing is, is not everybody does R35s, the MIRAs. NIGMS was one of the first. I think NCI beat us to it. I think they had one. There's a handful of institutes now, and there's sort of a sense that more institutes will come onboard with this. Each one of them has different rules. For us, again, I think the different rules things is important because I can only speak right now to give you an example of how they're run for NIGMS. We have two programs for MIRAs, and not all institutes, even those who have MIRAs, have this. We have an established PI MIRA program where that has separate deadlines and separate sort of requirements, and we also have a very robust ESI MIRA program, and that's something that if you don't have any funding yet, so for those of you ESIs on the line who are looking at this and do basic research, then NIGMS, you should certainly look at the ESI MIRA program. I think it's a very viable alternative to the R01 program, and also, our rules are ... Again, the caveat is our rules, NIGMS rules. It's the only time where you can co-submit an R01 and a MIRA. Okay? So ESI MIRAs can also put in an R01 on the same subject at the same time so that they're overlapping in reviews. Established PIs can put in an R01 and a MIRA at the same time for us, so there's that. Now, in terms of faculty levels, obviously assistant professors for ESIs and for the established ESIs, I have people who are tenured, just got tenured, fully longtime tenured, and I also have given some to people who are MD PhDs at medical schools who are actually ... I have one or two clinician types, research-clinician types, who have a MIRA from us but also do some clinical work as well. So it's not one ... I think the take-home lessons is, not all institutes partake in the R35, and each one of us have different rules, but it is something that if you haven't considered before, you should make sure you do your homework and think about it. There are many positives to the program.

Shoshana Kahana: Sounds good. If I am correct, I think we have about just 1 minute left so just want to know if you have any immediate closing thought.

Mike Reddy: No other than I'm sorry for the haphazard approach to this talk. I think it's hard to know my audience. I taught in academia for a long time, and I miss reading the crowd, so to speak, seeing what people are responding to when I'm talking, so that's ... It's an interesting feeling because I feel like maybe couldn't have been as helpful, but certainly anybody who is listening to this point still, feel free to e-mail me, and I hope I've at least answered two or three people's questions.

Shoshana Kahana: All right, everyone. With that, I think we're going to close this and continue to enjoy the meeting.