

Good morning, afternoon, or evening, depending on which part of the world you are Zooming in from today. I'm Maya Sabatello. And I'm delighted to welcome you to today's Trainee's Hub session to discuss research, career development awards, or K Awards. I'm an Associate Professor of Medical Sciences at Columbia University, where I have a joint appointment with the Center for Precision Medicine and Genomics, the Department of Medicine, and the Division of Ethics, the Department of Medical Humanities and Ethics.

For those of you who might be new to the Center for ELSI Resources and Analysis, or CERA, we provide resources to support research on the ethical, legal, and social implications of genetics and genomics and serves to connect scholars, scientists, policymakers, journalists, trainees, members of the public, and others to engage in ELSI issues. Aside from our panel today, please see the chat for a bit of housekeeping.

There are many resources on elsihub.org that may be of interest. I encourage you to join the ELSI scholar directory, sign up for our newsletter and daily updates and news on LinkedIn and Twitter. For some quick logistical information about closed captioning, the Q&A feature, and the chat for this webinar, please see the information dropped in the chat below.

Now, for the primary reason for which we are all here today, discussing K Awards, the grants that NHGRI has awarded for a long time now, and that plays an invaluable role in developing, building, and supporting emerging and future ELSI researchers. I've also had the privilege of being a K01 awardee, an opportunity that has shifted my professional path in significant ways. And so I'm super excited to hold this session, discuss the expected and unexpected issues that come up with these types of grants and the various professional trajectories that result thereof, with a view to supporting the next generation of awardees.

Today we are joined by David Kaufman from NHGRI to offer an introduction to K Awards and the other funding opportunities offered by NHGRI. His presentation will be followed by presentations from 2K awardees, Dr. Stephanie Kraft and Dr. Hadley Smith, whom I'll also introduce in greater detail later on.

Now, for David Kaufman-- so, Mr. Kaufman, Dr. Kaufman, is a program director who joined the National Human Genome Research Institute, again, that's the NHGRI, in May of 2014 after working as an NHGRI ELSI grantee for several years. He oversees a portfolio of research and career development grants related to the ethical, legal, and social implications of the applications of genomics in medicine. His full bio is also in the chat. David, the floor is yours to give your presentation. Thank you so much for being with us.

Thanks for having me. Sorry about that. Is the screen working OK?

Yes, we can see it. Thank you.

OK, let's see here. All right. Still OK there, Maya?

Yes, Yes, yes.

All right. Thanks so much to TraineeHub for organizing this session, and for so many of you for turning up. It's great to be invited to provide a little bit of information about two kinds of individual career development awards. I hope I can answer questions that you have for us during the discussion. The first thing to say is that NHGRI and the ELSI program are both open for business. We're currently accepting applications, including for the K01 and K99 grants that we're going to be talking about today.

Things can change. So when you start thinking about applying for an NIH grant, please call an NIH program officer to ask if there's anything new that you should know. You should also probably give us a call when you're getting ready to submit a proposal, for the same reason. I'm going to touch on three topics here. The team of NIH staff that works with you on an application and grant, the two training award types that we make to individuals who are developing their ELSI careers, the K99/R00 and the K01, and a few things specific to the applications for these grants.

Throughout, there'll be some links to various resources pasted in the chat. We have some at the end of the presentation, and we can always come back to those slides later, as needed. So first, let's talk about the NIH team that you work with on your application, and once it's funded your grant. First is the program officer who works with you during the application phase and through the life of a grant. We provide guidance on the scientific aspects of an application, and we track the progress of grants.

Second is the scientific review officer. They ensure that your application gets a fair and solid peer review. You likely won't interact with them much, but it's good to know that they're out there if you need them. Last but not least, the grants management specialist works with you and your university or employer on the financial and policy management of your grants award.

Together, we'll help you ensure that the applications you put in fit our interests-- excuse me, that the reviews give constructive feedback and that the management of your grant goes smoothly so you can focus on writing and research. These are the four ELSI program officers at NHGRI, Sheethal Jose, me, Nicole Lockhart, and Rene Sterling. My message on this slide is always the same. Call us or email us early on when you're thinking about applying.

Introducing yourself two weeks before your application will be lovely, we're always happy to meet you, but it's likely going to be too late as we won't have as much time to give you advice. You might call us to find out things like what funding opportunities you're eligible for and if your idea would be a good fit.

You might want feedback on your specific aims or want to know if there are sample grants available for you to look at, to get a feel for how long different sections of a grant are, or the level of detail that people tend to go into in different parts. And you might want to know what happens after you submit a grant or once it's reviewed. Please, please, please don't be shy. Talking to you all is literally our favorite part of the job. We love to hear from you. Even if we don't know you, we still love to hear from you. That's actually the most fun.

So we're talking here about two types of career development grants that NHGRI uses to support postdoc and early-career ELSI researchers, the K99/R00, which we sometimes call the kangaroo, and the K01. It's important to know that other institutes at NIH also use the K99 and the K01, but they will use them for very different, very specific things and may not support ELSI researchers with them. So what you need to know is that NHGRI does support ELSI research with these two. Let's talk about them.

The two career development awards have several things in common. Both are intended for one person's individual career development. Both are mentored awards. Mentors play a significant role, working together with you to prepare the application and to advise you in your research and career development across the life of the grant. Both of these provide up to five years of funding and have three application due dates each year.

And there is, of course, one major difference to highlight, which is that the K01 is for early-career tenure-track investigators. It generally doesn't support postdocs. While the K99/R00 has two phases. You start with the K99 when you're a postdoc. And when you obtain a tenure track or equivalent position, you convert over to the R00.

So let's look at some of the details of the kangaroo. When the K99 phase starts, you need to be a postdoc, preferably with one or two years left in your postdoc because you get up to two years of K99 postdoc support. So typically, you'd apply for this maybe two or three years prior to when you're thinking about ending your postdoc, since it takes about nine months minimum for us to review and fund. I can explain that more later if it's confusing.

So awardees commit 75% of their time to K99 activities, both training and research. This requirement is meant to protect you from having to do too much of other people's work. Phase 2 is the R00, which you switch to once you've secured a tenure track position and are ready to move. To shift to the R00, you have to submit a separate, simpler application. It's not peer reviewed, so it moves relatively quickly.

In that application, you summarize the work done in the K99 and talk about what's coming next in terms of your research. But the main emphasis is your new employer documenting that they're providing you the support that's equal to what they would give to a new professor without an R00. The R00 provides you three additional years of support, and you maintain that 75% level of effort.

And so as you move-- I really love this grant. Because as you move to a tenure track position, sorry, you're bringing three years of NIH funding with you. I think it makes you an even more attractive candidate than you already are. To be eligible for the kangaroo, you've got to be a postdoc working at a US institution. It's US citizens, permanent residents, and people on a valid US visa are eligible. So you don't necessarily have to be a citizen.

At the time you apply, you can have no more than four years of [STUTTERS] research experience, sorry, after your PhD is concluded. This includes time that you've spent in non postdoc research. However, NIH can extend that four-year window for childbirth or other well-justified personal or family situations. All right, let's turn to the K01.

Like I said before, the K01 does not support postdocs, and it's reserved for early-career tenure track researchers or people in equivalent positions. It also protects 75% of your time for up to five years of mentored research and career development. And it's intended to move you towards independent work, developing product leadership skills and preparing for larger NIH research applications.

In terms of eligibility, candidates for the K01 must have a research or health professional doctoral degree. By the time of the award. The individual must be a citizen or a non-citizen national of the United States, or have been lawfully admitted for permanent residence. Applicants cannot already have been awarded substantial NIH research grants, for example, an RO1 or the K99. However, you can have a history of other smaller NIH grants like an RO3 or R21. Don't worry if you don't know what those are right now. It's not critical.

So neither one of these are get-rich-quick schemes. But what do they pay for? The K99 and K01 both support the same things at slightly different levels. You get a salary or stipend, fringe benefits, which generally means health insurance, travel to conferences or trainings or to conduct your research, and some limited expenses for both additional training and the conduct of your work.

So how do you apply to these? Naturally, of course, the answer is meet the parents. Why am I saying that? At NIH, a parent funding announcement is a broad funding opportunity. Any of the 27 institutes at NIH that wants to sign on to a parent funding announcement can do so. So here you see the first page of the K01 parent announcement. You can see parent K01 up in the right corner.

And you can see that about 20 of the NIH institutes have signed on. They're all basically saying, send me your K01. And there's another separate parent announcement for the K99. These announcements simply provide you with the standard forms and instructions that you need to apply. There's not much detail about what each institute wants to fund. But I'm here to tell you that the NHGRI would like to fund ELSI K99 and K01s.

Let's talk quickly about the applications. Both of them are pretty similar. There are five major parts of these applications, and the first three are led by the person developing their career, the applicant. So, there are three sections that are all going to be reviewed, scored, and are all important, the first is candidate background and goals, talking about who you are, where you've been, and your career goals. You might talk about your training and work, key research and publications, your skills and methods, [STUTTERS] expertise, sorry about that, and how those combined to point toward an independent ELSI career.

The career development plan explains in detail how you'll use the grant to get from where you are to where you want to go, what remaining knowledge or skills will you pick up, when, where, and with who will you do that, how will the grant benefit you and lead you towards your independent ELSI research career, what professional development activities are planned and how is the researcher planning to do going to fit in with your next steps after this grant, at least in your mind.

You should logically sequence the career development plan in a timeline that makes sense with respect to your research plan. So if you need to learn a method in order to do the research that you're planning to do, you should probably schedule that learning first. And finally, of course, the research plan. What research questions are you going to pursue during the grant, and how do you plan to do it? And how does the work support your broader career goals and coordinate with the career development plan?

As part of that research plan, you've got to have a page of your specific aims. And on TraineeHub, there's a great presentation, starring our own Rene Sterling, about writing your aims page. It's linked the chat, I think. I really highly recommend watching it. But briefly, I really like this breakdown by Meghan Halley of Stanford on what your aims need to do.

On the left side is the big picture stuff. Why is the topic or the problem that you want to work on important to work on? Explaining this is absolutely critical. It's the so-what question. Then, what gap in our knowledge about that topic are you trying to fill? On the right are the specifics. What specifically are you going to do to help fill that gap? How do you propose to do it? And what are the possible outcomes? What's in it for us. If you succeed?

Again, I said, there's five parts of these applications. Quickly, the other two of them need to be led with your help and input by your mentor or mentors. The mentor plans and letters of support need to be specifically tailored to you and your research, and they need to show your mentors commitment to you as a researcher. They need to echo your career and research plans and describe what roles the mentors will play. The mentors can note their mentorship experience and outline how you all will meet together and interact during the project.

The section on environmental and institutional commitments shows how the place that you're working in is going to be able to support you in your research. That's all I've got. Big thank you is to Faryn from training hub and my NIH colleagues for all the help on the slides. This is a slide with some of the linked resources which we can come back to, or we can paste things into the chat during the discussion. But for now, I'll just say, thank you. I'll say thank you, and turn it over to two people who really know what about these opportunities. Thanks so much.

Thank you so much, Dave. That was really fabulous. We'll continue now and go back to questions a little bit later on. So, let me now introduce our K Award panelists. Dr. Stephanie Kraft is an Assistant Professor in the Department of Bioethics and Decision Sciences at Geisinger College of Health Sciences. She is a lawyer and empirical bioethics researcher.

Her research aims to advance ethics, equity, and impact in the conduct of clinical and translational research and the implementation of emerging biomedical technologies. Stephanie received a K01 Award for her project respect for persons in the genomics research enrollment process, incorporating diverse experiences and attitudes. She recently completed her K01 Award. And she will share with us a little bit of that process as well.

Stephanie will be followed by Dr. Hadley Smith, who is a health economist and a researcher of the ethical, legal, and social implications of genomics. She is an Assistant Professor of Population Medicine at Harvard Medical School and Harvard Pilgrim Health Care Institute, and a member of the Harvard Medical School Center for Bioethics.

Hadley is a K99 awardee for her project in ELSI integrated evaluation of the family-level utility of pediatric genomic sequencing. Hadley previously completed the K99 phase of her award at Baylor College of Medicine, and since, transitioned to Harvard to complete the R00 phase of her award. With this happy note, Stephanie, the floor is yours.

All right. Thank you so much, Maya. Let me share my slides. Hopefully, you're seeing the right slide. So I wanted to spend just a few minutes reflecting on my time as a K awardee, as well as some of the transition before and after my K award. So I will begin by giving you a brief overview of my career trajectory to date, and then talk about some of the-- how I navigated various ups and downs and twists and turns throughout before, during, and after my K. And then I'll spend a few minutes at the end just touching on mentorship and how to think about building a mentoring team.

So this is just a snapshot of my career path, with the caveats that it does not include everything and it is not drawn to scale. So sorry about that. So, I'm a lawyer by training. I got into ELSI Research when I started my postdoc at the Stanford Center for Excellence in ELSI research in 2013. From there, I moved to Seattle, where I was a senior fellow in pediatric bioethics. And then I moved into an acting faculty role at Seattle Children's and the University of Washington.

I then spent the next couple of years working on a variety of projects. I was awarded an intramural career development award, and also spent a lot of time iterating on aims, pages, and proposed methods, and thinking about what I wanted to do for my K01 proposal, which I ultimately submitted after a lot of drafting and redrafting in 2018. And I was fortunate that was funded in 2019. And around that same time, I moved into my assistant professor role at Seattle Children's.

As you heard, the K01 is a five-year award so that wrapped up at the end of 2023. And in the last couple of years of that award, I was submitting other grant proposals, trying to figure out what would come next. I ultimately was not funded on an RO1 despite my efforts. But I was funded as a Multi-PI on a foundation grant that builds on my K award work.

I also led a couple of bioethics supplements. So I was involved in a variety of things as I transitioned off of my K award and into the next phase of my career. And then the last big change in my career path, last year, I moved from Seattle to Guissinger, where I've since submitted a variety of proposals as both as a PI and as a co-investigator, along with colleagues both at my current and prior institutions and elsewhere. So lots of things in progress and in the works, building on MacKay and building on collaborations that I built during that time period.

So I wanted to share a few reflections of some of the lessons learned throughout this period. The first lesson that I learned very early on as I was developing my K award, was the importance of seeking out and integrating various feedback and figuring out how to move forward in a way that aligned with my career goals, my scientific goals. I then also incorporated the variety of different perspectives that I heard from others.

I remember a moment where I had shared a draft aims page for my K with two different well-respected scholars and got totally different feedback going in opposite directions. And I think about that moment often where I had to figure out, which direction feels like the right choice for my expertise and the things that I want to learn during my K award, and the scientific questions that I want to answer. And so that's something that I continue to think about, a skill that I've continued to work on throughout my K award and beyond.

I mentioned intramural support. That was a really valuable support early on. Before I got my K award, I also got some intramural pilot funding toward the end, and that has helped support some of my subsequent grant applications. So that's another resource that I found to be really valuable along the way. Team science has been a theme, I think, throughout everything that I've done.

And I just want to emphasize the importance of building up those collaborations with folks, seeking out opportunities to partner with others on projects. I think especially in-- I do a lot of work in research ethics, and so I think that, by definition, requires some really interdisciplinary collaborations and has led to, I think, better projects, more fun collaborations. And I've learned a lot from every team that I've been involved with.

I had the opportunity to review other people's grants when I was first submitting my K award as a way of understanding how to write the grant. And I've since had the chance to review many, many other grant proposals and approaches to doing research from a variety of different people who I've worked with along the way. And every time I work with someone new, I learn new lessons in how to write an aims page, or how to think about the variety of different components that go into that.

And then finally, a no research career path is without its challenges, both expected and unexpected. And one thing that I found really helpful is to find opportunities for learning, for development in those challenges. I've learned a lot about managing a research team by testing a variety of different things out and by needing to figure out when to delegate and how to bring people in with different areas of expertise.

I also had to pivot. So COVID happened right in the middle of my K award, and so I had to pivot in terms of my methods. I had been planning some in-person research methods and had to make a shift, which created an opportunity for me to learn a new research method that I hadn't initially been planning on, but it's been something that I've been able to use subsequently.

And then many grants, of course, don't get funded. And so I've also had opportunities to think about things that didn't get funded on their first go round, and finding ways of seeking out alternative pathways for pursuing those projects. And some of those have led to really successful collaborations and outcomes.

So I wanted to end with a few words on building a mentorship team. I think it goes without saying that one of the primary things we're looking for in a mentor is somebody who's really invested in your success. And I think one of the important things that this means is not just somebody who gets excited when you publish a paper or have a grant funded, but someone that's proactively seeking out opportunities for you and putting you out there and helping you build those connections that are going to be really important.

In developing a team, something that was really important for me was to find people with a variety of skill sets and methodological expertise and perspectives. So making sure I had mentors who could guide me along in the methods that I was planning to use was really an important part of developing my team. Of course, this is all talking about formal mentorship in the development of your team, but you should not forget that you can also collect a variety of informal mentors along the way. And that's been another really important part of the last several years for me as well.

And then finally, I mentioned team science. I think it's important to consider your mentors as not just current collaborators, current mentors, and also future collaborators and folks who you can hopefully partner with for a long time. And that is all that I had to share. Thank you so much.

Thank you very much, Stephanie. Hadley, floor is yours.

Thank you so much, Maya and the TraineeHub organizers, for the opportunity to provide some reflections on my experience with the K99/R00. So my training trajectory has focused on social science research methods, specifically health policy analysis and health economics, and their application to the study of genomic medicine.

After completing my bachelor's in Political Science and Master of Public Service and Administration, I went on to study health economics in an environment where I had access to both an academic genetics department at Baylor College of Medicine and a neonatal intensive care unit that was at the forefront of genomic sequencing implementation, Texas Children's Hospital.

I graduated with my PhD in May 2019, and I started a postdoc the next month in the Center for Medical Ethics and Health Policy at Baylor College of Medicine. And that was my first experience really diving into ELSI research. As soon as I started my postdoc, I began brainstorming ideas for a K proposal. And as Stephanie also mentioned, that went through many iterations. I ended up submitting a K99, or kangaroo, as David mentioned, in February, 2020. I was fortunate enough to be funded on the first submission in December, 2020.

I went on the faculty job market in the fall of 2021. And I submitted my R00 proposal in the spring of 2022, a couple of months before I transitioned to my current role as an Assistant Professor of Population Medicine at Harvard Medical School in August of 2022. I have since submitted several grant proposals as a co-investigator. And I am an MPI of a successful R21 proposal with my close clinical collaborator, Monika [INAUDIBLE]. I'm now in the final year, the third year, of my R00. And earlier this year, I submitted my first RO1 proposal as PI.

So, I think the process of submitting a K is itself extremely valuable. First, it gives you first-hand experience of what actually writing and submitting a grant as PI entails. Second, it is a useful self-reflection exercise. In the application, you are developing a strategic plan for your career. When you are in the midst of a PhD, I think it can be easy to see finishing the dissertation or making it to graduation as the goal. And in reality, you have your entire career ahead of you at that point.

So for me, sitting down and articulating a career goal, and mapping out a way to achieve that goal, was extremely helpful at that point in my career. For me personally, my career goal was to lead research on clinical policy and economic implications of genomic medicine. I considered where I had training, where I had gaps in training, and what additional training I needed to do to achieve my career goals.

So I developed a set of research aims in a topic area in which I wanted to plant my flag or, really, develop a specialized set of expertise. I mapped the skills that I would need to carry out those aims onto training domains. And I mapped those training domains onto career goals. And I think setting out these career goals and the way that they relate to both the research topics and the training that you will pursue as part of the K is really important to demonstrate to reviewers.

So, selection of mentors and collaborators is another key consideration for K proposal development. And in reflecting on this, I think it's useful to keep two things in mind, a skill set consideration and a seasonal consideration. So by skill set consideration, I mean you want to invite people who can be good mentors to you in terms of research advice and career advice. As Stephanie also said, you need mentors who have specific expertise in the areas in which you're training, who can really help you refine that skill set, and can serve as good senior authors on papers that you develop using those skills.

By a seasonal consideration, I mean-- oh. By a seasonal consideration, I mean that you want to invite people who will be good mentors to you through all of the seasons of proposal development and of conducting the research, as well as ideally throughout several seasons of your career. So a couple of the career transitions on the horizon include the faculty job market, as well as the mentee to mentor transition, and launching your own independent research program.

So you want mentors who you can meet with formally, as well as informally, people who you can rely on to give you sometimes advice on the fly, especially during the job market process where a lot of moving parts are moving very quickly. So with that, I'll conclude and look forward to questions and answers.

Thank you very much, Stephanie and Hadley and David. It was really fabulous. What a great overview of your experiences and what you've gone through. I wanted to start a little bit with some general questions, and then we'll jump into some of the questions that are also posted in the Q&A. And I remind everyone to post their questions and that link, and that button as well.

So, Hadley, why don't we just quickly start with you? But of course, Stephanie, feel free to jump in. Just thinking about the training component of those K awards that you've submitted, you've mentioned really thinking about that, tying it with your future trajectory of where you want to go. How did you figure all of in that grant application? And what was the process to making those decisions about what you're lacking? Or what skills you need to get in order to get where you are-- where you want to be? Sorry.

I really did use the mapping process that I described. I think this happened simultaneously with considering who I may want to include on my mentor team. One consideration there is that I considered people who had careers who I would like to emulate one part of. And I assembled a group of people who had a specific skill sets, or they were known for being leaders on a specific topic area or method and invited those people to join as my mentors.

And so sometimes, as part of doing research on possible career paths, I came across topic areas that I really wanted to study. I was actually attending a conference on medical decision making and was introduced to some of the methods of stated preference research. And that just immediately sparked interest in me. And I knew that I wanted to gain expertise in those methods and then just use that mapping process of thinking about how I could use the K as an investment in my career to pursue training in those methods and apply them in the future.

Thank you. That's great, and again, a reminder of how important it is to be in those conferences where you actually can learn and be exposed to different perceptions or research methods. Stephanie, just thinking about your process, and I think it was obviously different. You've submitted a different K award than the K99. You were K01. Can you share a big or unexpected challenge that you experienced throughout the process of developing, submitting, and implementing your K01 award and how you've addressed it? If you had to put to pinpoint one of the challenge, one of the big challenges.

Yeah. I mean I-- sorry. I mentioned, of course, there was a pandemic in the middle of my K award, which was a challenge, I think, for everyone. But I think, just going back to when I was developing my proposal, I think one of the challenges I-- I came from a slightly different background. I'm trained as a lawyer.

And so I learned a lot of my research methods during my post-doctoral time. And it took me a while to be able to hone my aims page and get to the point where I felt like I had the project that I really wanted to submit. I had a lot of methods I wanted to learn. I had a lot of mentors I wanted to learn from. But honing the project and tailoring it to fit within the award, I think, was the-- it took me a while to get to the point where I felt like I had it right.

Thank you very much. And, Dave, I just want to start with-- first of all, thank you for making those opportunities. Really, I think they're so influential on people's career. What is the value or how important are these successful K awards applicants to the LC program?

Sorry, can you just say that again, Maya?

Sure. Yep. How important are successful K applicants to the LC program?

They're super important. I mean, there are a lot of us with gray hair in the LC world, and-- no, but seriously, they are a great way to find people who might not have been aware of LC, who are a social scientist or a historian or a public health person who get wind of ELSI and would like to do it, but maybe realize they don't have the training.

We are so multidisciplinary. We love to draw from different disciplines. And we don't want you to think that you have to have known you were going to be an ELSI researcher when you graduated high school in order to do that. So these give people an opportunity to get a little more training in areas that they don't know about. For example, many of the K folks pick up some genomics stuff things, or clinical genetics. So it lets you build in some skills and then and get some practice doing it.

And, the third thing is it's really important in these grants for your mentors to help you build a research network. And both Stephanie and Hadley have been really good at building these big groups of people that they work with, ask questions of, and who now are depending on them. So we love to add you to the network and have you become part of it. And that helps you flourish. Hey Hadley, would you like to work with Stephanie and me on this grant? It happens all the time. And so we get a lot of synergy from these.

Thank you. Now, question about both the process for it-- and I'm starting already to pick up here some questions from the audience and questions that we received from before the session, questions that were sent to us. So if you can say a little bit about all of you, and essentially it's Stephanie and Hadley, about the K awards, how did it help you in any way to move to your next phase in terms of the job search, for example.

And simultaneously, David, what are the expectations from K awardees in terms of should they have tenure track ready for them before they move to the kangaroo phase? Is there time limits that you should count on? What should we know about that? And again, Stephanie and Hadley, your experiences in the transition part, I think, would be great to hear a little bit. So let's start with Hadley.

Sure. So much of this career is learning by doing. I feel like the K really does give you an invaluable opportunity to lead research for the first time. And you have a level of independence, especially in the R00 phase, but also in the mentored phase. You are responsible for moving the project forward. And that is just a tremendously valuable place to be able to learn and also have mentors there when you need them.

I think the real beauty of the mentor research awards is that they do allow you to gain that experience in project leadership, while also having the safety net of your mentors there as well. I think it has been invaluable to get experience with project leadership, which is ups and downs, throughout the process of leading a research project. And as David mentioned, have your mentors help open doors for you and allow you to grow your own network. That then will allow you to join as a co-investigator on other people's grants and just get that experience of participating in the proposal submission process and in playing different roles on a research team.

Stephanie?

Yeah. I mean, I would agree completely with everything that Hadley just said. And just to build on some of it, I think learning by doing, I think, is a really good representation of my time on my K award. Learning how to manage a team, how to manage a budget, all of those things that I hadn't really had the opportunity to before, and then getting comfortable with the grant writing and grant submission process.

Every time I've submitted a new grant, it gets easier and easier. Not that it ever gets easy, but it is not as daunting as it was the first time. And it feels very manageable and has helped me feel comfortable joining different teams. I think those have been some of the most valuable pieces.

Thank you. Dave, if you can shed light a little bit again more light on some of the requirements in terms of eligibility, in terms of-- if there are six years periods that you have to be in post graduation, can you be a PhD student when you submit a grant, K award, or is it just post--

I'll double check, but I believe you need to have a postdoc lined up, a letter of commitment to you. But you might not have defended yet so for the K99. The Parent Award for the K99 says for no more than four years of work experience. And some of the institute's, they come up with their own versions of K99 and K01 for specific purposes. And some of those say, no more than four work years and no more than six years total. But the parent does not talk about six years total. So it's just the four years of research experience.

One thing that is important for that K99 to R00 transition, you're not generally granted any time to take breaks in between the K99 and the R00. So, like sometimes people will say, hey, I'm not quite sure I'm going to be done with my postdoc stuff in time, or I don't know if my position is going to come open in time. And we try and work with people, but that's pretty hard and fast. And you do need-- for that R00, you do need a written commitment from the place you are moving to for your tenure, track, position or equivalent.

There are equivalent positions that are not academic. And if you are wondering about that, they're all different. We just need to talk that out one on one and see whether the thing you're thinking about or have a promise for is equivalent. It's usually about the institutional support. But back to what I was saying. You need a commitment from that institution that outlines what resources they're going to provide to you.

And NIH looks at that with the eye of making sure that you, the candidate, are getting a fair deal from the university or employer, and they are not cutting corners simply because you're bringing funding that they don't have to pay for. So we are looking out for you, but we need to see that promise of that position. And there are lots of detailed checklist of stuff they have to provide in order to make that transition. And we want the same thing basically for the K01s.

Thank you. So you've touched on one thing that came up, which is the possibility of taking a break between, for example, the postdoc and the R00 phase. What do you suggest for folks who are in the process of thinking about having a family? Is it like you're locked in for five years and cannot do anything? Or what do you suggest?

That is a great question. I think that is a place where we try to be flexible. We need to be flexible. You can't say to someone, you can't do this work because you are pregnant. You don't want to do that and you're not allowed to do that. So, I don't know every detail. But I do we tend to be quite flexible in those situations. So you don't have to give us your family planning schedule at the beginning of the grant. Things happen. But when they do, I think it's just best to reach out. And your program officer is going to try and help you make things work the best we can.

Thank you.

Yep.

Other questions are around publications. And again, Hadley, Stephanie, I don't know if you can also reflect on that. How many papers did you feel that you need to have? Should they be first author? Is it OK if you're in the middle when you're submitting those K awards? How well advanced-- because it seems like you have to have-- you cannot have more than four years of experience. But at the same time, you have to show that you've had enough experience. So what is that enough experience? And how many papers would that count, first-author, senior-author, middle-author paper? What would work? What would work for you?

I don't know that I can tell you any numbers. I'm pretty sure I didn't have any senior-author papers at the time. I had a handful of first-author papers that I felt really proud of that showed that I had an emerging area of expertise, but still had a ways to go. So that's where I was. It's maybe not as specific as-- it's not a particularly specific answer, but I think what was important was being able to show a growing focus and places where I wanted to build.

I agree with that. I also had a handful of first-author papers, three that resulted from my PhD dissertation work at the time that I applied, and then a couple of middle-author papers that came from collaborative work. I do think that it was important that there was a cohesive stream of focus in those papers that I could point to as demonstration of my commitment to building a career in the particular space that I articulated that I wanted to.

Thank you. Now, thinking about the process for developing a K award, there are questions around how long does it take to do that, or how long does it take you to do that and how much time people should take into account when thinking about those type of awards.

I'll start. Maybe I mentioned that I graduated in May and started topic brainstorming at that time. I went through several iterations on specific aims pages. I got feedback from as many people as I possibly could. And once I settled on a topic and a set of aims, I really started digging into the writing of the research strategy and connecting with mentors. I ended up submitting in February. I had originally planned to submit in October, the same year that I graduated, and that was just too quick of a turnaround for me. So, I was May graduation to February submission. And I think that was probably as quick as would have been feasible for me. It's a lot to develop.

Yeah. Curious if you guys taken any courses for that in preparation for that submission.

No. I don't believe I took any courses. But I just wanted to add I think my timeline showed-- I started thinking about a potential K award sometime in 2016. I had a baby during that year, so it was a long process. I initially thought I might be able to submit something before that, but that didn't pan out. And then I spent the next year really developing the proposal, and I submitted it in February 2018. So it was a couple of years all in, but mixed with working on a variety of other projects and thinking about going in one direction and then deciding that wasn't the right direction and then coming back to the-- starting fresh.

Thank you. There are some questions here around good mentorship And how would you approach even-- not so much, I mean, I think we heard from both of you about identifying people with relevant skills, and as Hadley said, also some seasonal mentors that can help you throughout the ups and downs. But there is a different question, which is, how would you approach and invite folks, senior folks, to serve as mentors? How do you set the roles and expectations from them? Or is it entirely dependent on how they set the tone? How did you navigate those dynamics?

I think it is important to keep in mind that ultimately, this is your proposal and your career. I had some previous experience of working with everyone who ended up joining my proposal as a mentor or as a collaborator. I had one primary mentor and three co-mentors, which I think was an appropriate number for the varied types of expertise that I hope to include on the proposal. And then I had three collaborators as well.

I think it was really crucial to have some experience working together beforehand, because that made some of the conversations about what dynamics would look like and what roles and even what authorship, et cetera, would look like so much easier because I already had a good working relationship with each member of the mentorship team.

Thank you. Stephanie, anything you'd like to add?

I agree about setting expectations. And I realized pretty quickly that when I was meeting with my mentors, I should come in with the agenda and the plans for what I was hoping to get out of that. Not just that meeting, but more broadly out of our mentoring relationship. And that really helped to focus on whether it was a method we were talking about or a career development question or whatever the goals of that particular era of our mentoring relationship were, to really get focused on what those were.

Great. Thank you. And a couple of questions for you, Dave, one is about experiences that the people are obtaining during their PhDs. Does that count for the four years experience? I'm assuming you know, but there's a question around that.

Post doctoral, yeah.

Just post doctoral, great. And what about K22 grants?

It's not something that I'm prepared to talk about because we don't typically use them in ELSI. But I saw that question. And I'm happy to help that person find someone who does know about them. But I wouldn't want to speak out of turn and give bad information.

OK. Thank you so much. Other questions to Hadley and Stephanie with regards to your shift, essentially from the K to your full time post K. Did you feel that was helpful for you that you had the K? Were there particular postings that literally requested people who are with K awards that you've applied for? Or was it more that you've applied to general of opportunities and then came up with that? How did the process work for you.

I moved to a different organization after my K award ended. So the K itself, like the K, per se, was not directly a factor, except that, of course, I was presenting on sharing data that I had done during my K award. All of my subsequent grants, I think, are a credit to having had the K award, that I learned how to write those and develop those partnerships. So I think all of that experience all, as Hadley was saying before, really prepared me for the next stage. So in my particular case, it wasn't the K award itself, but it was all the things that I learned from being on the K award.

I'll echo that I think a lot of the benefit of having the K99 was in helping discern what role would be a good fit for me, mutually a good fit. I knew the type of organization that I wanted to join. Because I had developed a specific outline for the research program that I hope to pursue, I knew the types of resources that I was hoping to move into an organization that had those types of resources.

I think there are many options that are available to you on the faculty job market. So, for example, I looked at a couple of applications that had much higher teaching requirements. And just having the K99 and having the experience of writing grants, and having discovered about myself, that I found great joy in that grant writing process. I ultimately decided to not take a more teaching-focused position.

From that, I also understand-- and I guess there was a question from the audience, also for Dave, about whether there is a requirement of having a post K faculty appointment that inherently includes also teaching. And I'm reading from here that it might be-- a lot of research is enough. You don't necessarily have to have a full load of teaching experience as well, or position, post K, right?

Yeah.

OK, great. One more question, I think, before we're going to conclude for the day also around mentorship and the type of letters that mentors should write, as well as whether mentorship can be from someone outside of the United States, for example, in the EU, and whether or not the K is given to individuals or to institutions.

The K's are given to an institution. All grants are given to institutions that manage everything between the NIH and the investigator. They can be transferred if the investigator moves. So the institution has to agree to that. Hadley, I think you had some experience with that, if I'm remembering. It's not always easy, but it always gets done.

And the other question was about mentors from other countries. That is generally, to my knowledge, acceptable. The only issue seems to be coming up right now, and again, I don't want to speak out of turn because it's very new, but as long as money isn't going-- isn't being subcontracted from your grant to someone outside the country, but probably just an advisor in a different country would probably just be fine. But that's the kind of thing I would want you to call me and ask me, or one of my colleagues, as soon as you can so we can get you the best information we can.

Thank you so much, Dave, Hadley, and Stephanie. That was really fabulous. I want us to thank you, first of all, for all those insightful comments and sharing with us your experience for the day, and of course, to our TraineeHub organizers. We hope to see you all on May 9th for our LC Friday Forum, the LC of social epigenetics. And the registration link is in the chat.

Our next ELSI journal club will be on May 30th at 12:00 PM Eastern time, where we will discuss the parents' perceptions of the utility of genetic testing in the NICU, with author Katharine Press Callahan and discussant Jessica Ezzell Hunter. The registration link is in the chat as well. Please visit elsihub.org, and subscribe to our newsletter, for more details.

Also, you will see a post-event survey pop up once this Zoom meeting ends. So I encourage you to complete this as our team takes your comments and suggestions seriously. It has informed us on how to improve our programming and bring new topics and thought leaders to you. So please do fill that out. I wish you all a wonderful weekend. And thank you again to everyone who participated today and, of course, our panelists. Thank you very much.