# Equity, Diversity, and Inclusion Across the Proof of Concept Network

Wednesday, December 7, 2022

Session Transcript:

>> Eric Padmore: Okay. Good afternoon everybody. Welcome back, I hope you all had a good break. For those you who do not know me, my name is Eric Padmore. I am the senior advisor for entrepreneurial development in the SEED office, and in that capacity it has been my privilege of last several years, to also chair or Co-Chair with my esteemed colleague, Stephanie Fertig, The NIH Entrepreneurial Workforce Diversity Working Group, which is an ad-hoc group of program directors and others from across the NIH, focused on some of the very issues that we're gonna talk about on this panel. So, I think we have a very interesting conversation for you this afternoon, and I'm gonna turn it over to Jessica Sharon who's the director of innovation programs at the University of Louisville and who Co-Leads the Proof of Concept Network Action committee on EDI or "PACE". And so, with that hello Jessica and please introduce the other panel members.

>>Jessica Sharon: Thank you, Eric excited to kick off this panel to talk about EDI and what PACE is committed to bringing to light some of the issues that have been identified across the network and also trying to come up with best practices to overcome those so I'm very excited to be joined here by 4 Panelists. And so, I'm going to ask them to introduce themselves, and just give us the connection to the Proof of Concept Network so Ed I will go to you first

>>Edward DeMauro: Hi, I'm Edward DeMauro. I'm an Assistant Professor of Aerospace Engineering at Rutgers University, and I work with Pragati Sharma at Rutgers to help to develop a COVID-19 breathalyzer

>>Rania Hussein: Hi, everyone, I am Rania Hussein, I am an assistant teaching professor, in the computer engineering department at University of Washington, and I am the founder and Director of the Remote Hub Lab. My connection is actually through my colleague Terry Butler where we work together on an I-Corps project. I'm excited to be here and sharing this floor with my other panelists

>>Claire McDonald: Hello my name is Claire McDonald. I'm based in the University of Colorado. I'm a program manager for our REACH hub SPARK|REACH. I solicit applications and manage the review process and help support the teams once they are funded. Excited to be here.

>>Kayla Meisner: Hello! My name is Kayla Meisner, my pronouns are she/her and I am the executive director of Kentucky commercialization ventures. We're the statewide consortium model of tech transfer here in Kentucky, and we are a Co-PI on the KYNETIC grant that secured NIH funding for all regional and R-1 universities in Kentucky. I'm very happy to be here.

>>Jessica Sharon: Excellent, thank you all and my connection into PACE to be part of the Proof of Concept Network is I'm also a program manager in our KYNETIC Hub, so get to work with Kayla on some of those efforts, but I was also a program manager in the EXCITE Hub at the University of Louisville, prior to KYNETIC. I am this year taking the reins from Julius Korley and Monique Quarterman to Co-Lead PACE along with Pragati Sharma from Rutgers University. PACE is a committee that supports over 100 higher education institutions that are part of this committee and our priorities are to provide programs that are accountable to equitably serving innovators of all backgrounds, have opportunities for investment assistance, and other dedicated resources for diverse innovators.

We're building a community with more representation, leadership, and participation that's reflective and inclusive of all of the community served through a coordinated and collective EDI advancement through this national collaboration of hubs and innovation centers. Because of that national collaboration, we're able to see the problems that are on the broader level and try to come up with priorities to overcome those. So this past year, we launched a new logo and are working on establishing social media presence and growing that social media presence. We're working on an updated website where we can make sure that we are disseminating our best practices, outside of just the institutions, that are part of PACE. Working very closely with RTI on that EDI data collection and that's a really important piece of what we're doing because that helps build the best practices and we do our best to get that data quickly and then you've heard some of that data today with Alan O'Connor presenting. That said, we are working towards the standardized data collection model, that can be collected quickly so that we can respond quickly as we're seeing trends. Certainly, working very closely with the NIH, as well as, across PACE to communicate strategies for more equitable and inclusionary practices as it relates to promotion and tenure, and also establishing a mentor network that's focused on EDI mentors and mentees and that's an important part of what we're going to talk about during this panel today.

So wanted to give a little bit of the backbone of what PACE is and then I want to start working on or start talking about some of the things we've done this year. So as part of PACE's efforts, many of you saw that we there was recently a RFI for a lab to market *request for information on strategies to make access to the innovation ecosystem more inclusive and equitable*. It's a long title and Claire McDonald led the efforts for PACE to compile feedback from across the network and I'm going to ask Claire to please talk about the critical recommendations that PACE submitted as part of that RFI and can you tell us how those recommendations may have been included in the final report that was issued by the White House.

>>Claire McDonald: Yeah, sure, so, I guess our goal was to try and highlight some of the things that we've been working through as a committee and have those seen by this sort of Federal

level task Force. So let's see— so they kind of posed a series of it was 4 or 5 questions related to what are the barriers to participation and innovation, and please provide solutions. They had a couple of other questions, but those were really the 2 major themes that they asked for and so what we chose to submit from PACE were 2 major barriers, along with what we thought of as the kind of recommended solutions to those barriers.

So, the first one related to promotion and tenure criteria in universities. So as an example, what I see here in University of Colorado is the faculty that I work with and their major kind of priorities in life are teaching, doing research, writing papers, and getting grants. And so, the kind of more translational activities or innovation-related activities are kind of seen a little bit as extracurricular activities and don't generally feed into their promotion or tenure criteria and so that's a huge barrier kind of a across the board, but I think it specifically can affect people who are underrepresented at these like higher promotional levels of universities. So that was our first time— the barrier that we highlighted and I think there's an accessible solution to that. The NSF has already funded something that was called the Promotion and Tenure Innovation & Entrepreneurship (PTIE) conference. It happened last year and so the goal there was to convene key stakeholders to address the value and inclusion of evidence-based data, experimental knowledge, and impact outcomes derived from innovation and entrepreneurial achievements as additional components in promotion and tenure decisions for higher education. And so what they've generated now is a set of recommendations and resources that universities can use if they want to integrate these like innovation and translational activities into their promotion and tenure criteria. And so, I think as a PACE committee, we may kind of a bold recommendation that that we would recommend that in order for any universities or institutes of higher education to get federal funding, they should include innovation and entrepreneurship activities in their promotion and tenure criteria— so that was our first recommendation. Second up related to the access to mentors and community who can help support innovation activities as well as make connections to other people who can support those activities.

So again, we see this as a kind of a key element to supporting innovation and translation, that's important for people across the board. But it does seem to specifically also affect people who are underrepresented or who can't see somebody like them represented as participating in these activities. And so again, we had a great solution for this, I think, so as Jessica mentioned our committee is already working to integrate our mentor network so I think we're really quite well-paced, we're quite well placed to facilitate this, because we're based in— we represent all of the REACH Hubs around the country and each of our Hubs has its own little network of mentors and advisors who participate in our program and are really keen to help out early-stage innovators and investigators, and so what we'd love to build is an online platform to allow for the sharing of this Mentor network so that more people around the country can access a larger network— a more diverse network of people who can help them progress and succeed. So those are our 2 major barriers and the two solutions we chose to highlight in this submission. Do you want me to jump straight into what they reported on? So the report is very information dense so I recommend you read it yourself.

I'll try and summarize the major points: so they received 44 submissions from around the country. It was from a variety of different representatives ranging from individuals to national committees like ourselves, to private investors and private accelerator companies as well, and they kind of summarize all of the recommendations into 4 major areas you could say. So the first one is related to outreach and communication, and I think education as well, so the respondents highlighted that the federal government does provide quite a lot of support to innovator, but a lot of people don't know about them and that can be one major barrier is just not knowing what's going on or what kind of supports are available. Next up as a recommendation was the importance of data to inform evidence-based policies. So the recommendation here was that the federal government could facilitate the collection of data, the sharing of data analysis of that data, and also like Jessica was saying, making it available, openly available, quickly and analyzable by anybody. In regard to that point, in our submission, we did highlight the great work being done by RTI and in relation to the REACH Hubs. Next up as a recommendation was respondents felt that the federal government is in a position to change cultural values and so, this is where they included our recommendation on promotion and tenure. So the federal government could help highlight successes among underrepresented groups and also signal academic institutions to reward innovation, that was our point I think, helping innovators overcome risks perceived by private investment sources. Last up the respondents saw a role for the federal government in creating opportunities and so this is where they summarized ways that the federal government can fund activities by underrepresented innovators, support prize competitions, things like hackathons and connecting innovators with investors, information portals to make resources easier to find. So those were the kind of the 4 main categories that were summarized. There's a lot more information but yeah, I think that's it.

>>Jessica Sharon: And thank you, Claire, I think that dovetails very nicely into jumping to Ed and Rania during our prep call they both mentioned that they are new to NIH funding and so thinking through some of those barriers you know coming maybe a little bit more from the NSF and engineering side, but they have technologies that directly impact health so really excited that you're both now working to advance those. Claire highlighted some of the things you know that we may have known about, but can you tell us some of the challenges that make that jump a little more difficult. What are some of the barriers that we may not be thinking about, both from a healthcare and a commercialization focused research that you are jumping into now.

>>Edward Mauro: Thank you. So some of those initial barriers that I found personally were associated with you know learning the lingo, the terminology, and you know how to the best communicate my ideas to a to a discipline that I'm not initially part of. So I'm an aerospace engineer, I actually work with sonic flows, primarily, and one of the things that was very beneficial for me having the opportunity to work with somebody like Pragati is having that mentorship both during proposal writing and even subsequent to receiving the award mentorship in the form of industrial advisement and but like to kind of help me navigate those waters, and it's been a very fruitful process for us we've been able to successfully discuss our technology with the FDA. We've had some encouraging conversations, and we're even at the

moment right now that we're looking at the next 6 to 12 months spinning off into a company, so those were my experiences at this moment.

>>Rania Hussein: Yeah, this, is correct, so, adding to or what it just mentioned, I would say, the barrier for me now is knowing the unknown. The NIH to me is a totally new platform. I have not applied to NIH I was successful with NSF and now this is my next immediate step, taking the project we are working on to the next level. We do need the support and help from NIH but being new to this I don't know how can I be even competitive and write a competitive proposal and what are my chances to win a proposal where I need support for more Proof of Concept and the research and development and writing a proposal you know we all know there is a lot involved in that how to make it competitive and the funds that comes in supports students of course, in the first place, who aspire to go to the next level after being in the classroom, taking the research to the next level, and I want to say, that my lab is founded based on the idea of equitable access. So equity would access technology, whether this technology is for education or for health care and so how can we apply that equitable access for everybody? Especially people who did not have the chance before to acquire any NIH funding, how can we get access to resources what are what are our chances? How do I get resources that can help me reach there, and I commend what Claire summarized about White House report and recommendations and knowing that there is a platform already built, or maybe in the making, to connect people and to help know where resources are, that is very good to know.

>>Kayla Meisner: I know, working across regional universities, particularly in Kentucky. As we talk about equitable access. Can you talk about some of the ways that we can pursue that equitable access and break down, some barriers because you certainly working across the state of Kentucky, I know you are working with more regional universities, as well as community and technical college systems. So can you highlight some of the efforts that KCV has made to identify and break down barriers that certainly those could tie in I think for anybody beginning to pursue both NIH and commercialization focused funding.

I think there's a lot of assumptions that that started us down this path, and one of them is you know, if you, if you build it, they will come. So people were quite excited when at the launching of KCV, the statewide coalition that supports 6 regional institutions and 16 technical and community colleges all across the state, that because we were now a partner on this NIH grant that there would be a lot of applications and a lot of excitement. Honestly, I think it was it was a shock when we realized how much imposter syndrome our innovators had that even with the secured funding that they've felt like well, you know, same I'm familiar with NSF but I don't know anything about NIH, and I don't know if my research is up to the caliber. And so, there is a lot of training, coaching, mentorship, that went into how we not only support our innovators, but also, allow the administration of our institutions to feel like they have support. One of the great things about KCV, and the intention and the in the foundation of KCV, was that our 2 RO1 institutions in the state are not only partners but are collaborators and we are under this agreement that really unites us all together to allow us to lean on each other and to lean on that expertise and infrastructure of the larger research institutions to support.

You can imagine at a regional school, there might be one administrator for what an office at sponsor programs at University of Louisville looks like, right, with 30 to 40 people. So there is a lot of education, but there was also a sincere need to create an equitable solution for funding opportunities. And so, the entire KYNETIC leadership team, in addition to you know, external review and all of that, we felt that it was critical to guarantee that there be a pot of money for regional innovators, that they compete and write applications, and are judged, you know in their own regional application bucket. We felt like that was critical because our schools don't have PHDs in STEM Fields, PHD candidates, and those sorts of things, and so how are we going to tell them to compete with labs with PHD candidates, and with these larger infrastructures, and those sorts of things. So, we actually rewrote the funding to secure the 25% of all funds must go to regional schools and as soon as we did that, we saw applications jump. We saw applications from community and technical colleges jump. We saw innovators participating in things like office hours and one-on-one sessions with program managers, because they felt like they had a chance and so it was not only the infrastructure of first Receiving the KYNETIC funding, but allowing ourselves to be able to lean on this support system that went beyond funding, that came before funding, trying to coach people on what does commercialization mean, and what does success mean when you get these sorts of grants.

And then as I said, you know, not all universities have tech transfer professionals or sponsored research professionals and so how to alleviate some of the concerns of administration who just have not secured a large grant like an NIH grant. Or some of the things that we felt that we had to address and we've seen success in doing so and have seen you know broad demographics and different levels of junior faculty and tenure faculty and students apply for the KYNETIC funding so it's been a huge success and we're so happy to be a part of this KYNETIC Program.

>>Jessica Sharon: Well, we are happy that you are part of it as well but I think you and Ed both talked about that importance of the mentoring before the application and so that being a really important piece of that and that's something that is unique to the Proof of Concept Network, that we build that as part of all of the centers and hubs that are part of the this meeting certainly bring that to the forefront as that is a tremendous resource. As a reminder to everybody in the meeting, please feel free to drop questions in the Q &A. I'm gonna keep going with our panelists now but we look forward to taking questions from the audience, so we'll be watching for those to pop in.

So if you all also mentioned kind of the idea of bringing students into participating in these Proof of Concept Networks, you know, Kayla even mentioned, that they have applied for funding through this mechanism. So I kind of take this question to all of our panelists, can you share some of the ways and programs that have allowed you to engage students in your efforts to pursue this Proof of Concept funding product development for healthcare related technologies and have you had to shift the way you interact with those students. Have they seen some excitement about getting involved in the product development side of things

>>Edward Mauro: I've been very fortunate to have a very ambitious team of students that have worked with us in the development of our project and we've had an opportunity to include

them in meetings with our industry advisors who are experts in you, know, health technology and starting businesses, and I think that one of the things that that's done is it's excited them to look at you know moving forward with helping us, you know, spin this off into a company, and especially really have a desire to see this as the fully developed, fleshed out finalized product

>>Rania Hussein: Oh, for me, I am also very fortunate to have very talented group of students, undergraduates and also graduate students finishing up their masters. And they have been involved in the project for about a year, going into their second year actually and we had success from an internal grant but University of Washington research royalty funds to start to the development recession development and the students were involved in it and then we got the NSF I-Corps. We were very fortunate and learned a lot through the I-Corps program. The students were amazing, they, they led it all the way. We are not at a point where we are ready to start the company yet. We felt especially after the I-Corps that we still need to do more work on the research and development side. And the students now are at the point where some of them are finishing their senior year and wanna go to their masters. And my master's degrees to then want to go to their PhD and they are all on board, they want to continue when they started. They wanna take it all the way until they see a product on the market that impacts many patients. So now we'll go back to the challenge of I want I want to be able to support my team. How can I do that, how can I keep them? How can we continue working on this project and the way for that is we definitely need funding so that they can continue pursuing their dream of going to want to go to PhD, and then to undergraduates go to graduate school, and then besides that, seeing that this comes to a real product, so back to that, the challenge of how can we be competitive, and for NIH so that they can take a chance on us and have us in going to the next term.

>>Jessica Sharon: Absolutely, and exciting to hear about students wanting to take it, kind of all the way and see a product. I think that's at the heart too of all of our research in general. While you know yesterday there was some discussion of incentivizing this work, but I can only imagine the excitement for you as well, certainly, you know the promotion and tenure side of things but ultimately seeing your product on the market, your technology on the market. I'm seeing big smiles from our panelists thinking about that as well, and so for a student to be able to see that as they begin in their undergraduate and hopefully continue to take it further.

Kayla, or Claire, do you all want to provide some commentary certainly on engaging students, but also some of those resources may be beneficial to junior faculty members as well.

>>Kayla Meisner: Absolutely, I think, for us, you know, our 6 regional schools are also teaching first university. So, students come first and being able to tell our innovators that students are welcome; they're encouraged. And then watching them be able to participate, be able to learn how to pitch, and communicate the impact that they see with their research, and just as you said you know we have students now who were on projects, as juniors, now are seniors, and once we're not talking about grad school and now they are talking about grad school, because they see that they're their research and their ideas do drive impact and really can change the world around them. Our tagline is Kentucky ideas will solve Kentucky problems, and I think we

can really see that in the applications that we get and that our faculty are very encouraging of giving students credit for it, you know, if they if they really are a critical piece of that, project you know we preach from the beginning this is going to take a team.

You can't do this alone and allowing students to know even as undergrads that they're critical piece of that I think it really changes the culture especially here in Kentucky on the importance of innovation and translational research. It's been very beneficial.

>>Jessica Sharon: I think it's such the opportunity, and the reason we've chosen to highlight the potential for students to get involved is certainly it's a passion for some of our panelists, as well, as I think, faculty including those that Kayla mentioned that are a teach first university before focusing on research but it's a way to drive a diverse pipeline of innovators who as they go on to graduate school, as they go on to their own faculty positions, you know that they can pursue this type of funding to overcome kind of that imposter syndrome that we've all heard of that, oh, I don't know how to do that I'm not in the right university. So how, you know, I think as you all are thinking about product development, are there opportunities for PACE, and the Proof of Concept Network as a whole to better support our innovators, our faculty members, our students as you think about shifting to SBIR and STTR funding. Is their specific resources such as training programs or courses that would be helpful. Is it the Mentor Network?

Can you help us understand some of those as you were beginning to think about pursuing this type of funding. What do you need? What are the initial things that you say I can't do that part, so and certainly Claire, if you want to even chime in from the Project Management experience and what you're hearing from folks as they're about to make that jump. So I will certainly pick on maybe we'll ask Rania to go first having just come out of that NSF I-Corps training this may be front and center for her.

>>Rania Hussein: Yeah, absolutely, I would say, I need all of the above. All of what you just mentioned Jessica definitely, mentorship, knowing about what available, and definitely stay connected stay connected with the people who can help taking me and my team to the next step. So I would say mentorship for sure if there are 3 programs whether for me or for my team for my students. We are open and we are ready. So please connect with us or let us know how we connect with you where to find you where to find people who can help us. How can we get connected? So that would be very helpful. I’m looking forward to it.

>>Ed Hussein: So, I mean, you know, mentorship has been really a vital key for us. And I think that Pragati and her team have ensured that we've had all the educational resources at our disposal to navigate the wars of you know transitioning towards creating a startup company, and it's been a learning experience for me too. One of the things I also wanted to point out too because I think this is important is that you know this was my first major grant and so it was exciting to see this being able to count towards my tenure and tenure package and you know will help me as I move forward with promotion. I just wanted to state that, too.

>>Jessica Sharon: I thought I had muted myself, and certainly, I know, Yeah, finding the right people to ask, so I I'm going to go to kind of everybody here, again, how do you find the right people to ask, to give you that mentorship to help you figure out your next step to you know have you found strategies that work for you, you know, or perhaps I may even go to Claire thinking through some of the resources that program management through Proof of Concept Network can bring to the table to help you find those right people because I'm gonna borrow Alan O'Connor's word from a previous session of demystifying this process and pursuing this funding. So how do you find that resource and particularly is there a focus and a need to focus on make on finding underrepresented experts, as well so Claire do you want to jump in on that one.

>>Claire McDonald: Sure, first up I think it is challenging to be honest to find these people. Some of the ways I've done it is I look at the other accelerators in my state so we have other Proof of Concepts funding mechanisms and I sneak in on their review panels and try and meet people and hand their cards and steal them to my program. What else, in speaking with our already funded innovators, I tried to learn about who they interact with and steal some of their connections as well. A lot of the time to be honest it's sort of friends of the program will make introductions for us, and get connected with us, and yeah, to be completely frank here, in Colorado it's quite hard to find people who look different or are from different groups so that's a big challenge for us and what I've tried to do on our most recent review panel is for every invite I sent to somebody to be a reviewer for every male I invited I have to invite a female so that was kind of my attempt to diversify things a little bit. To be honest, I find it hard to diversify and other elements so, like culturally, or different backgrounds. Here, in Colorado, that can be quite hard.

>>Kayla Meisner: You know for us, it starts with the pipeline, it starts with being very intentional about as you just said inviting people trying to make sure everyone feels welcome is, how we start every, every conversation, and then from there, trying to grow their network. You know you have geography as one thing where we have people in very rural areas of the state, and so making sure that you're aware of those sensitivities', different cultural backgrounds and all of that and it goes on and on. But I think, you know KYNETIC as a team, which is our grant name KYNETIC I keep throwing that out there like everyone knows what I'm talking about, down to our external review board. You know, we have people across industry, across the country, from all different walks of life, so that way people can understand the problem that our innovators are trying to solve. I think, I think we've pushed the boundary on what is human health you know. We gave this KYNETIC talk at one of our schools, Kentucky State University, which is one of our public HBCUs and It's also a land grant and they have great agriculture research, and just talking to their faculty about Agriculture is human health what we eat, what we put in our bodies, how the water systems work if there's contaminations, that's human health, and you could see the light bulb turning.

So I think part of it is you must meet them where they are. Sometimes that physically, means we drive across the state, and we've done that with our program managers, we went on a road show flying the flag and educating them what we have funded. To say, we're funding things in

welfare tech. We are funding things in pregnancy and vim tech. And I think that it's been exciting for our KYNETIC leadership team to see you know no offense to the RO1s, but you kind of get, oh, look, here's another one from oncology. Here's another application from you know that that very impressive aerospace group. I'm sorry I'm picking on you Ed, but, I think certain labs get a culture of innovation and unless you have that person who's really pioneering that for you, then that way of thinking just might not come naturally. So trying to make sure that everyone feels like an innovator being really intentional about our language that we've expanded it doesn't just have to be patentable. If we can copywrite it, that is protecting your idea. So being very inclusive at all stages, and also that commercialization doesn't mean that you have to be the founder of this start-up. We can look for industry partners, we can look for your students, we can look for people in the community. We have had people step forward from smaller areas across the states, that are entrepreneurs moving back to Kentucky and saying, I wanna push forward the next idea – it's not my idea, but I know there are ideas coming out of these institutions. So, we have been proactively seeking out people who have that serial entrepreneur in them, but pointing them to the institution and saying, this professor will continue teaching, they will continue innovating, but they do not want to be a start-up. And that's okay, that still means you're innovative, that still means you're commercializing and doing translational research. At every stage, we have to expand the definition of inclusivity.

>>Jessica Sharon: Here, you know, and connecting into that Kayla, this first one is you know the reference to KYNETIC is it specific to work being done by those on this panel PACE is leading this panel, but KYNETIC is the REACH Hub in Kentucky and this question is or is that a more generalized agenda within the government. I think everyone involved in KYNETIC hopes that the NIH and other federal agencies are paying attention to the work that we do but Kayla do you want to give a quick kind of overview of what is KYNETIC because it certainly is unique.

>>Kayla Meisner: Yeah, yeah, absolutely, so University of Louisville was given the first, or awarded, the first REACH grant in the state, and so with that access to this funding, and they built kind of the framework that we're still using today, of having Office Hours, mentorship, that the external Review Board you know made up of people from all walks of life all Industry to really provide a system of support before, during and after funding and REACH at University of Louisville did that very well.

Then while REACH 2.0 was coming out, KCV was also in in launching phases, and so we thought what a great story that would be for all the state to unite and go after this funding together, and so REACH 2.0 went from REACH at University of Louisville to KYNETIC and KYNETIC is the Kentucky Network for Innovation and Commercialization, thank you, Jessica and so yes, KYNETIC now unites all 24 public institutions, together, and allows all those institutions to have access to this funding. And once again, what I was trying to illuminate earlier was that not only was it critical for us to all, go after that together, but then to say 25% of this funding must be dedicated to regionals. We got this based off being equitable and inclusive and so that means down to the funding and making sure that we are evaluating people responsibly and effectively, and making sure that if they're going through all this that that they're rewarded for it you know

and that the best regional applicants can get funding and access to that. So yes that is the KYNETIC group that we are thankfully a part of.

>>Jessica Sharon: Thank you Kayla you know, and so I think that's a big tie into the next question here in the chat. One of the things KCV does is they are the tech transfer office across the state for universities that don't have their own dedicated tech transfer office. So this question is you know this individual says we don't think about universities not having that and so what else are we not thinking of? Many of the EDI programs are in their infancy so everyone's trying to do more, but maybe we don't understand what's truly needed to make things equitable. What do you all on our panel see that maybe is missing?

I think certainly we've heard a few comments, but I'd like to give our panelists the chance to chime in with you know, we can always use more money that's what we're all going to tell NIH and other federal agencies. We need more money to do this. But we need to hear it from innovators, from universities where do we need to spend those dollars. You know what you think is the best way of approaching some of these things, and especially I think very excited maybe as Ed or Rania whoever wants to unmute first to chime in with this one because both are new to NIH, so you know, what can we do to help to encourage more aerospace engineers. More folks coming out of the NSF I-Corps program to pursue this type of funding what's missing?

>>Rania Hussein: I can go first. I'm not sure if there is anything missing. Maybe there isn't. Maybe it's me not knowing what is available that I can pursue. So that could be the starting point of more discussions and knowing what is available, and give it a shot, give it a try, and see if it will it works, if more is needed as we continue the conversation and I agree with the remark that the EDI programs are in the infancy, everybody, we're all learning from each other's experiences.

So, I believe in my case, maybe because I don't know. I don't know what is available for me. Oh, that could be a starting point for identifying if there is anything missing or not.

>>Ed Mauro: Yeah, I kind of agree with that statement. Being new to NIH, it's not always readily apparent to us what opportunities there are to continue on in terms of funding later. Also, you know, I would like, I think some type of dedicated source of funds that could help sustain students from diverse backgrounds. Students really drive the research for us, and you know having the encouragement and incentive available to help You know especially those from diverse backgrounds, and you know get into the research get into STEM get into these fields, you know that would be very that would help immensely I could say

>> Kayla Meisner: And Jessica I'm going to chime in one more time. But I think you said critical points is you know sometimes people read these RFAs and still don't see themselves. And so, I think we've spent you know 700 miles in the car, and 7 days at 7 different places talking about KYNETIC talking about this NIH funding, and tailoring that message to the audience and we've done that for students who've done like I said the agriculture school example. But I think you

know, for us it was well, maybe not everyone, you know, aligns with this opportunity things that they align with the NIH, thinks of themselves you know as innovating human health and so I think you must be intentional about promoting not only the NIH, but promoting again, what has been funded. What we see as a successful translational research project and then supporting them before during and after. I'll say, it again, but it's been critical for us to go out there and tailor the message of the opportunity to individual schools or departments, or things like that so it's not so generalized, and it doesn't come from this is how the RO1 down the street is doing. This is how it could be done at your institution.

>>Jessica Sharon: And Claire, I'm going to even come back to thinking about the promotion and tenure side of things, too. Is that factored into any of the conversations with your innovators, junior faculty even and you know, in overcoming that. So is that been a critical piece as well to make sure we're overcoming some of these and truly achieving equitable diverse innovation.

>>Claire McDonald: Yeah, we see, most of our applications come from full professors. And so that means we're the whole proportion of the junior faculty sphere in our university, and then even among those who are funded through our program and get all the various supports that we provide like connections to consultants, help with program management things like that, they still find it hard to find the time to do these activities. And it usually works best if they have a team, and we can provide the money to support students like salaries, and things like that but even still, like one example, I have is an innovator he has a drug he's shown in 5 different animal models that works really well. He was ready to submit a pre-IND application so ready to start talking to the FDA, and I connected him with a consultant to work on that and still his like feedback was this is really challenging and I don't have the time to dedicate to it even with the help of the consultants. So that's still like barriers that are there even to someone who is being supported by our program, and he said he wants to see his drug get into the clinic, but he also wants to publish papers and be a scientist and do his experiment. So yeah, so there's still something there creating a blockage.

>>Jessica Sharon: And I suspect Ed could relate to that as he talked about getting to pursue and talking to the FDA certainly time-consuming, and certainly a barrier of learning, how to do that which makes it, even that much more time consuming to do that absolutely. Another question in the chat, we've learned that representation really matters. So, this is coming from Alan O'Connor. So, there's data behind that, seeing people like themselves in the innovator facing teams makes a huge difference for those teams that want to pursue it. What have you seen for innovator representation relative to the representation for your sites team overall, so this is the leadership of your Hub, etc. Do you think that's an important part of this effort and of a way to make sure we're building inclusive innovation ecosystems? Kayla, I see you nodding so maybe we'll go to you first on that one

>>Kayla Meisner: Yes, I think it is critical. I often joke, that we just made our first diversity hire by hiring, a man on our team. We were a team of all women before this. Oh, and he said, yeah, I didn't think I would ever get that. You know. Saying that to say, I think we are diverse and intentionally diverse from the ground up thankfully, the KYNETIC team, as well, and our

external review board, and all of the supporting you know even hiring and program managers, that was a critical piece to make sure that we are being that we are trying to make diversity essential in the hiring process of those support roles, and then you know, when someone comes to us and needs a mentor for us to really be intentional about finding them a mentor, not saying that someone who doesn't look like you cannot mentor you, but I think that there are cultural competencies that that definitely come into play and so we are always very intentional about that and so we do that by scouring the web scouring our networks, as you said Claire anytime I go anywhere and see someone who is leading who is no offense not a cis white man, we swap cards and I tell them you're going to get a call from me. I think that it can be the elephant in the room to say that you know you really need to have diversity as the forefront and not something that's just a staple on top because they'll know it. You know, they will know again, in the language, and how you advertise and promote your programs, the types of ways, that you conduct meetings and office hours. If you are truly inclusive and intentional about that and so I think that we've done a very good job and always pivoting as well you know we do surveys and those sorts of things our surveys have optional demographics and we try to make sure that we are always including people who are traditionally left out or traditionally marginalized groups, so yeah. It's very important to us, as KCV, and us as the Kentucky ecosystem in KYNETIC

>>Jessica Sharon: And I think to maybe Ed wants to comment to on the importance of and I've heard it from Kayla as well, about you know, as we think oh, I'm an Aerospace engineer, I don't do health related but including that into that diversity as well so that it's not I read this RFA it sounds great, but it doesn't apply to me. So, making sure that that mentorship is available too. Ed, have you been able to find that at all?

>>Ed Hussein: Yeah, so I mean, my team we're team of engineers and you know, 1 aerospace, 2 mechanical, and an electrical and you know our mentorship was crucial. We had a general idea we wanted to pursue and we were paired with an industrial mentor that you know encouraged us to go for it. I remember early on talking with my colleagues and we were like I don't know if we really fit this what they're looking for here, but from a very early on stage with Pragati and the Health Advance team at Rutgers, we were encouraged to move forward, and even with the RADx program that we receive our funding from, we've had individuals from NIH SEED. Steve Wolpe I'm going to specify, who have encouraged us to not be afraid to go and speak to the FDA and consider starting up businesses. So, you know. We've had a lot of encouragement and it's been a fruitful couple of years.

>>Jessica Sharon: And thank you for that, that certainly is a coming out of an engineering school I can identify with that certainly. Rania, how about from a I-Corps as you participated in that program, was that a focus of yours for you and your student to seek out those mentors who look you and your students? Or come from the say a slightly different outside the realm of NIH focus work was that an intentional component of your customer discovery process?

>>Rania Hussein: It was absolutely the nature of the project. We're also a group of engineers, electrical and computer engineering team at once we do have students from biology due to the

nature of the project having a heavy biology component. As far as the team I would say, it is diverse and the lead students they have inspiring personal stories. They're underrepresented and would like to go next, take it all the way and see themselves succeed. So that has been great as a team, going to the national I-Corps, we were very fortunate to team up with great mentors throughout the course of the program and then a fantastic industry mentor who we had the pleasure to work with. We are planning to continue our discussions and continue the connections with these folks and continue learning from them for sure. So it has been, and then of course through the customer discovery, we have learned more from diverse patients about the needs, what they're looking for to help guide our future direction taking our project to the next level.

>>Jessica Sharon: Appreciate those comments. I think your comment just now, about including diverse patient populations in your debate, can even jump to a whole another hour of a panel to discuss even how we develop products from that perspective as well. So I see we are just a couple minutes over on time so thank you to all our panelists for joining us today. We hope that all of you who are involved in the Proof of Concept network will join us in PACE on our effort to address equity, diversity, and inclusion because it's certainly a critical piece to advancing human health so I will turn it back over to Eric.

>> Eric Padmore: Okay. Yes, and thank you to Jessica and all our panelists today. A bit of shameless self-promotion. I will point out that I've recently taken over as program director for I-Corps at NIH, so happy to entertain any conversations about that if any of you would like to reach out to me and talk.