

THE BROOKINGS INSTITUTION

WEBINAR

RACIAL EQUITY AND INCLUSION IN TECH:
CAN APPRENTICESHIPS HELP CHANGE HIRING PRACTICES?

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Annelies Goger [00:00:18] Hi, everyone. My name is Annelies Goger, and I'm a fellow here at Brookings Metro. It's a tremendous pleasure to welcome you here today for this conversation about racial equity in tech. And given that it's National Apprenticeship Week, we wanted to have a conversation about how apprenticeships might be positioned to help move the needle on racial diversity and inclusion and within tech. So we really want to look under the hood and find out how can this really actually change the culture and the thinking around inclusion. So it's my pleasure to be co-hosting this today with folks from the Kapor Center based in Oakland, California. And I actually used to work a lot with them, so I'm really thrilled that we can do this together today. And I wanted to talk a little bit about where we're at with this and why we're having this event.

So more than two and a half years ago, we had what many people call a racial reckoning, after the killing of George Floyd and Breonna Taylor, and many CEOs across the country committed to diversifying their hiring and management practices. So we really wanted to see, well, where are we today and why is it so hard to make progress? So actually, I started my career in workforce development more than 20 years ago, dating myself a bit there. But I was on a National Science Foundation project called Promising Futures, focused on diversity and inclusion in STEM and what community-based training could do. And that was 20 years ago. We're still having the same conversation. So I want to know— and come out of this today— with some clear perspectives on how can we move beyond performative focus on racial inclusion and equity in tech, and really think about the insides of what will make this change actually come about.

So I'm really thrilled also to be welcoming Mr. Manny LaMarre today to the conversation to share his opening remarks. Manny LaMarre is the senior policy advisor at the US Department of Labor and before that he was executive director of the workforce, the Governor's Office of Workforce Innovation in the State of Nevada. And he's also been bringing on his, building on his experience as a corps member in Teach for America in Miami. So with that, it's really an honor to have you, Manny, you can, you can turn on your camera and we'd love to hear your thoughts on inclusion within tech and what can apprenticeship do to move the needle.

Manny LaMarre [00:02:50] Excellent. Thank you, Annelies. And thank you to the staff at Brookings Metro for the invitation. As DOL, Department of Labor celebrate National Apprenticeship Week and the 85th anniversary of the National Apprenticeship Act, we really have doubled down our commitment to expanding, modernizing and diversifying registered apprenticeships. The

administration and the department's commitment has been intentional, sustained and with some results that I think will support my answer when I say yes, I think that apprenticeships can improve racial equity and inclusion in tech and change hiring practices if pursued correctly. Now, I want to be careful because I don't want to suggest that it's a silver bullet or a panacea for all the nuanced challenges to advancing racial equity and inclusion in tech. But we are optimistic and believe if we in the broader field, including employers, labor, education and workforce providers are intentional, we can make meaningful strides through registered apprenticeships.

Now, let me start with highlighting some of our efforts and work on both a policy and programmatic front. Our efforts are supported by the fact that on January 28, 2021, President Biden issued Executive Order 13985 on advancing racial equity and support for underserved communities through federal government, which aims to advance equity, civil rights, racial justice and equal opportunity for all individuals and communities through federal government programs and policies. As a result, the Department and the Office of Apprenticeship has undertaken a number of efforts to promote compliance and train staff with key regulatory requirements of apprenticeships recognized by U.S. Department of Labor or State apprenticeship agencies, which is the implementation of what's called 29 CFR Part 30 on equal employment opportunities. As part of this strategic approach, we've included the deployment of web resources and electronic tools that can facilitate the recruitment, hiring and retention of traditionally underrepresented groups and apprenticeship programs to advance racial equity and other equity, equities.

We have also provided additional guidance to the field in this area that dives deeper into DEIA, which is diversity, equity, inclusion and accessibility, and provides more clarity and is proactive on anti-discrimination and anti-harassment. It also includes emphasis on outreach and recruitment and working with the workforce system to better support apprentices. This is important because we want to ensure apprentices are set up for success in their programs as we develop these programs. Now we've also matched our policies with serious investments. The administration has invested over \$300 million to expand, diversify and modernize apprenticeships. These investments have been intentional about advancing equity. For example, we invested \$31 million in apprenticeship, diversity and inclusion technical assistance centers. The goals of these TA centers is to increase quality of apprenticeships programs that incorporate DEIA best practices. Last year we invested \$99 million in 2021 in state apprenticeship, expansion, equity and innovation grants to expand into new industries

like technology. This year we awarded over \$121 million in Apprenticeship Building America grants, which is a grant program that advances the department's efforts to expand, modernize registered apprenticeships by increasing the number of programs, diversifying the industries that use apprenticeships such as tech, and improving access to and performance of apprenticeship programs for underrepresented communities.

And to be clear, we intentionally carved out \$58 million to grantees focusing on equitable partnerships and pre-apprenticeship activities. In particular, we know that pre-apprenticeship, pre-apprenticeships are proven strategies to advance equity for racial groups and others. We've also invested \$8 million to enhance apprenticeship intermediaries to advance the use of apprenticeships in sectors such as technology and other, and others impacted by the pandemic to increase access to underserved populations. In addition to our investments, the Secretary reconstituted the Apprenticeship Advisory Committee to provide advice and recommendation to the Secretary on strategies to advance pathways. The ACA specifically has a subcommittee looking at how to increase the DEIA and other pathways such as pre-apprenticeships to advance equity.

Now I can go on and on about our investments, but I also want to take a moment, a quick moment, to highlight some recent successes specific to the tech space. On July 19th, the Department of Labor, the White House, the Office of the National Cyber Director and other federal agencies such as Commerce announced a 120-day cyber security sprint. A primary goal was to highlight the role registered apprenticeships can play as an innovative and yet time tested solution to get more well-trained and diverse talent more effectively into crucial cybersecurity jobs across the country and hire apprentices from underserved populations. We work closely with our intermediaries, employers, federal and state agencies on this effort. And this week we can officially say we are closing the sprint. And as a result of this sprint, we've launched over 190 programs that have been developed or under development, 120 new occupations added and most importantly— or equally important— is almost 8000 apprentices have been hired doing the sprint at public and private institutions. More importantly, improving DEIA was a key goal of the sprint. Now of the new cybersecurity apprentices hired into the private sector since July 19, 41% were people of color and 32% were female. Prior to the sprint, only 27% of all cybersecurity apprentices were people of color and 28% women. So these statistics reflect the power and opportunity of outreach to diverse populations and make a positive impact on the field.

We also saw one of the, the first Native American cybersecurity apprenticeship programs develop. Again, this shows that the sprint made meaningful progress and results. This is only the beginning. Our work is far from done. This sprint has brought us and other federal partners even closer to the work on DEIA focus opportunities. One comment from Stephanie Moreno, the vice president of apprenticeships at Bitwise Industries, shared was this. She said, we found untapped potential in overlooked people in our communities. Pay them to continue learning and growing in our apprenticeships and they've gone on to provide valuable team contributions.

The final thing I'll highlight is our apprenticeship, our American Apprenticeship Initiative grant evaluation. The goal of the AAI grants were to expand apprenticeships in the U.S. in sectors with few apprenticeships, particularly such as I.T. and health care to underserved populations and underrepresented in apprenticeships. 68% of our AAI apprentices were from underrepresented, represented populations, compared to 46% of all apprentices for underserved populations. While we are still digesting the report and I encourage you to check it out online, we see that AAI apprentices earnings grew almost 50% between the year before starting the program and the year after the program ended. Annual earnings for Black apprentices grew by 37% and 50% for Hispanics, and earning growth was highest for apprentices in computer I.T. and health care occupations. In fact, we saw 174% increase from 22000 to \$61000.

Now, I want to be clear. There are still racial disparities between races that are unacceptable to us. However, we also acknowledge and welcome the significant wage increases we saw among racial groups. As I close, I want to say that in my experience, I think that key drivers of racial equity is about one, clearly articulating, clearly articulating equity as a priority or goal in investments, two, providing support for pre-apprenticeships and supportive or wraparound services to build strong apprenticeship pipelines. Three, intentional focus on nontraditional occupations such as tech to increase awareness of opportunities and finally, partnerships and recruitment from diverse populations and organizations. We have to partner with organizations not just committed to equity, but with pipelines and reach into the communities. DOL, the Department of Labor, we're committed to effectively addressing longstanding barriers that may exist in registered apprenticeship programs, and to building a skilled and diverse tech workforce needed to compete in a global economy. Thank you for advancing this critical conversation. Now I'll turn it over back to you Annelies to moderate a great discussion that I'm looking forward to here.

Annelies Goger [00:11:38] Thank you so much, Manny. And I really think that one of my big takeaways is that we have real serious money going into this, that it's really going beyond just let's get more people to go to college and let's find multiple routes for people to go in. Let's provide supports to people once they're in. And let's make sure that we raise awareness so that we're reaching networks that normally aren't in this conversation. So I really appreciate all that you're doing at DOL and hope to see in the coming years what the outcomes of those efforts are.

So with that, I'd love to welcome our panel members to come on today. You can turn on your cameras and what I, what we'll do here, first, I wanted to now briefly announce who we have. We have Lili Gangas from the Kapor Center. Lily, it's wonderful to see you again. We worked together several years ago in this exact space talking about these issues and really want to hear an update about what's going on on the ground. We also have Mr. Bryce Jackson, who is joining us as an apprentice in tech. And we are really excited to have your voice in this conversation to hear about your experience. And then we also have Jacqui Watts, who is a technical instructor and curriculum designer at Airbnb. She is going to bring to us today the conversation from an employer's perspective and what's happening inside companies to really take equity and inclusion in tech seriously. And then we also are hoping that Papia Debroy will be able to join us. She's, she's been delayed this morning, but we're hoping she can join us later in the conversation and she's the senior vice president of insights at Opportunity at Work.

So we had a lot of questions today to, that I want— and we won't be able to get to all of them— but I'm going to try to integrate them into this conversation. And I also want to flag that if you want to share more questions, you can tweet at the hashtag tech inclusion or email events at Brookings dot edu. But anyway, I will try my best to hit on a lot of these questions. But to start with, I thought we could start with you, Lili, can you share with us what is the current state of racial equity in tech? Where are we? What are the problems and what, where is there a progress that you're starting to see?

Lili Gangas [00:14:07] Definitely. Thank you so much for having us, Annelies, and to the entire Brookings team for, for hosting us and to all the folks who are listening, we're super excited and we had a great number of folks joining us. So and then I'm really going to pick up right where Manny left off talking about money. Right. We're talking about investments. And I think it's really important to think about the why of all of this work. Right. And so I want to start by painting a little bit picture

around the racial wealth disparity that we are continuing to see further widen as we see who is being able to make, to generate wealth through technology. Right. And the progress that we're seeing for those who are part of it and the folks who are not, but also starting to see that some even in the worst-case scenarios, the recession, the recessing of the talent, of the representation of the wealth building.

So for an example, we know that for the folks who are listening, we know that the racial wealth disparities have been tied to generations of policies, right, or practices that have systemically excluded certain communities, specifically the Black community, the Latinx community, native communities, from education, employment and types of loans, home ownership and even intentional destruction, right, of some of these communities. And so we've seen these challenges also just continue over the last 30 years, from the 1980s to the 2020s, which we are now, just continue actually to expand, unfortunately, because I'll give you a hint, the Internet was born in 1983 and over this period of 30 years or so, we've seen the assets, the median assets of a white family be 41 times more than that of the Black families. We've seen it also be 22 times more than the Latinx family. And so these are, these have real consequences, generational consequences that really implore us to have new models that are really rethinking how we are looking at the technology as a way to also help close these gaps of racial wealth disparities, right. This is why the conversation we're having today is so important.

And I'll just paint a little bit picture where we're at in the tech sector with numbers just to see how much wealth has been built, who's getting it and who's not. So we know that the tech sector has provided, contributes close to \$2 trillion to the economy, right, beside 9 million jobs that pay 125% higher wage in the national median wage. That in itself could be the difference between somebody like myself with my first job as an engineer, right, making 2 to 3 times what my mom was earning, be uplifted from a certain level of economic standing. Right. And now I have had the opportunity to bring my family with me. But we know that a lot of folks who are not in this tech sector aren't able to have that same wage growth. So we know that is really, really critical. We're also seeing, where has tech gone, right, over the last 30 years, but also seeing how fast and who's investing. We see that there's 330 billion just last year in 2021 in venture capital money that went to twelve thousand companies. But yet only 1% of those dollars went to Black founders, 2% of those dollars went to Latinx founders. Now, what's worse is that 0.45% went to Black and Latina founders. And when we're thinking about who is creating, who's building, who gets to employ, right. Those are the disparities. And at the

moment, we know that there's about 9% or so of the overall tech force is Black compared to the 14% of the U.S. workforce.

But what's actually even more daunting is the fact that we're starting to see some of the market corrections, right, and the tech layoffs. From 2014 to 2021, we saw that there was just a 1% increase in the Black representation in some of these tech companies. 1% increase when we saw the largest exits of some of these companies. Right. So that's, I start with those numbers because I want to be able to share the disparities of where we're working and how fast some of this wealth is being built and the need to making sure that we identify it, right, and look at the opportunities from a system level approach. And so where we're seeing now on top of that, right, we have, we're not represented as Black Latinx, especially even as women of color in some of these roles. We're also not being able to advance. The Kapor Center published a report a few years ago called The Tech Leavers that also showed that this is expensive. There's \$16 billion that employers have been spending because of culture that drives turnover of folks who are also once you're in, you're not feeling that they're investing in your own growth, you're feeling discriminated, you're feeling that, or you're being, you're facing challenges, right, of the culture that we've seen in tech at some points and many companies become toxic. It's really expensive.

And on the, the macro level is that in the population of the U.S., we're going to be seeing the majority be Black and Latinx. And if we are missing a huge growing segment, the majority of the people in this wealth generation, in the innovation sector, then this is, this is really an economic and competitive crisis for us as a, as a nation that we need to address, which is why being able to look at new scalable models, skill based models, rethinking how inclusive we can be, what that means, how holistic those workforce models need to be, this is where apprenticeship comes in.

So I'm really excited to get into the more, into the, the conversation about different models that— and opportunities that— apprenticeship models can create, especially in the tech sector. And I want to give a huge shout out to Kirsten Lundgren, who's a director of Tech Economic and Workforce Initiatives at the Kapor Center, who has brought over five plus years of working on the ground with talent, employers, community partners, training organizations to really look at all these different learnings and really bring it together in one resource called the Apprenticeship Toolkit, that will be, that we officially launched yesterday, that we'll be sharing more. I think it's also important to just make sure that we're thinking about the current needs, right, if it's not being holistic. But also one of the

learnings and key takeaways from the 30 companies that we talked about, talked with for this report, is that 80% of these apprenticeships are actually being started from the bottoms up, from the staff.

Annelies Goger [00:20:11] Right. And that's a great, that's a really excellent segue. And I really also wanted to put a pin in the point that this is not just about, we're not closing the gap just for charity reasons. You know, really the future of the industry, the future of the population is growing such that the majority of young people are Black or Latino, Latina. And we need to really be thinking about if we want to be innovative in the future and reach markets, we can't leave talent on the sidelines, which is what we've largely been doing. So with that, though, I wanted to pivot to Jackie and see if from your perspective inside a tech company and watching this change, evolve, where are you seeing some movement and where are you seeing some opportunities for change?

Jacqui Watts [00:20:57] Yeah. Thank you so much, Annelies. To start, kind of before I go into a little bit more about the perspective, especially of what we can do about, about the problem and about some of the lack of progress. I do want to just share upfront, although I do work for Airbnb, opinions are my own, they're not necessarily representative of my company. They are shaped by many experiences I got into the tech industry myself through a nontraditional pathway, went through an apprenticeship program to get in, to get my tech skills. And, and at this point, I also, my experiences are shaped by a lot of work with code tenderloin, which is a early exposure to technical skills and really a feeder into apprenticeship programs. So to talk a little bit about kind of, you know, what are we seeing today? Why aren't we seeing the progress that we need and what are the things that we can do about it?

Well, really, you know, in a lot of ways, I think about the problem as twofold. It's about getting folks in the door and it's about creating a place where they want to stay, you know, creating an inclusive environment as Lili mentioned, you know, the tech industry has, has some work to do in, in helping to create that inclusive environment where people want to stay in the industry. And so there's, there are a lot of things that thankfully, we have already seen, Airbnb is starting to put into practice, I hope to see even more companies put things into practice to help us to get to that place. And when we talk about, you know, inclusion in the workplace, instead of throwing up our hands and saying, well, we don't have the representation and therefore, you know, what we need, we need to wait for folks, to get folks into the door before we can see that inclusive environment, it's about taking

responsibility as an entire company for that change. The change has to be owned by all levels of leadership, by all folks in the company and in the industry more widely.

So at Airbnb, that looked like, you know, creating every part of the company, creating diversity and belonging plans. Executive compensation is tied to progress on those plans, which I think is a really, really, really exciting step. And then there's so many other things that go into kind of actionable steps to, to create that inclusion in the workplace, like investing in mentorship programs, partnering with employee resource groups, giving them the support they need to, to create a support system and prioritizing, you know, diversity and belonging training and analyzing if and where we're falling short, how are we falling short and what can we do about it? And then in terms of getting folks in the door, that's another huge part of the puzzle, right. The hiring and recruiting practices that the tech industry has relied on for, for years has been really, you know, filtering on big name schools and big-name companies and internal referrals and a lot of things that kind of create an insular work environment rather than intentionally spending the time to build up diverse teams that we, we know perform better and make better decisions and are better for business outcomes.

So when we're talking about, you know, how can we change those old practices and, and change our hiring practices, you know, some of the things that Airbnb has started to implement are around inclusive candidate slates, which ensures equitable representation for open roles, requiring hiring manager, you know, mandatory trainings around inclusive practices for hiring managers, revamping technical interviewing processes to really align around very clear, well-defined competencies and using those mechanisms as a way to really drive our hiring practices.

And then the last one I'll end on that I think is something I'm super excited about, it's kind of crucial to our conversation here today, is expanding the pipeline, right? Instead of resting on our laurels and saying, you know, there isn't the representation we need in the candidate pool and therefore, it's, it's hard for us to hire the representation we want to see in our company. Well, let's expand the pipeline. Let's go beyond what's easy and let's create new pathways for people to join. That's what apprenticeship programs are all about. And it's, it's reaching talent, both that maybe the university route is not always readily available to folks, especially folks from marginalized backgrounds. Or on the flip side, maybe you have career changers who, due to environmental and cultural cues, never thought that the tech industry could possibly be for them or STEM roles were for

them. And those are all amazing talent that we want to tap into. So let's use apprenticeship programs as a way to really build the talent pool that we want to see in the tech industry.

Annelies Goger [00:25:51] Thank you. Yeah. And I really think that one of the key insights as we have layoffs happening right now, you can really tell if the proof is in the pudding when there are layoffs, then if you're seeing apprenticeships get cut, racial inclusion initiatives get cut, it means that that's not part of the DNA of the company and it's not part of the business model, it's really not accounting for, this is, this is not just a charity thing, this is really a commitment to actually innovation and reaching new markets and bringing talent off the sidelines. So I think this is really critical, I think, through all the pieces in that process.

And so I actually wanted to turn the mic to you, Bryce, and to hear what is your personal experience getting into tech? What are some of the barriers that you've faced or things that you think people don't understand in terms of thinking through like, you know, what might people not understand about what it's like to just try to break into this sector? If you don't say if you don't know anyone in it already or if you don't really know where to start.

Bryce Jackson [00:27:01] Definitely. I also want to say thank you for this opportunity. I just think it's really important to get to hear from the people doing it, the people hiring and the people who are pushing forward the initiative toward diversity and things like that. So, you know, obviously, here I am, Black. I did an apprenticeship and I'm looking to, you know, break into the tech industry, things like that. For myself personally, I never knew that tech was an option from, you know, anyway. I didn't know it was an option until after I dropped out of college, you know. So then that right there in itself is, you know, just very difficult for people. And how are you going to find yourself in something that, you know, I you know, I grew up I did very well in school. I you know, and then not everyone has to, but I did very well in high school. I went to college; I played basketball in college. And I was doing, I wanted to, an engineer, I was, I was good at it, you know, technical like logic and stuff like that. But just not knowing that the opportunity exists, I think is, is one of the things and and as well as as, you know, just. I'm sorry, but as well as as this the opportunities and how did they come about?

So I found myself in tech through, through, I knew one of my, one of my, a distant friend of mine was a Black person who's in tech. He's a tech person. He's like, hey man, it's a really cool opportunity that you can find yourself doing. You know, it takes some hard work, definitely, but, you know, you can, you can figure it out. And I think I think you're a smart person if you can get this

industry. And I didn't know anything about it. So I looked around at like options in possibly getting into it and I found Bitwise, that's the name that's next to my, my, my tag. So I'm from there. And I think that Bitwise was, was a beautiful place because, you know, the barriers to entry there like, you know, they accept everyone no matter your background and not even just color, you know, you know, parolee, you know, like incarceration, like past incarceration, past, you know, rejected by society, anybody, you know, every, people are welcome there.

I think that, you know, part of the first step, not, coming from a different background that you're coming from, but you know finding, so getting myself into, in terms of, you know, my experience there, I think one, it's like of course, not knowing anyone that's an environment like that does that does technical work, that does software and things of that nature I think is, is very difficult. But I was able to reach out to my, in my community to like, you know, where people are looking for people like me to to join the space, which I did. And joining that space, I think there are definitely some key barriers. There are definitely some support possibly, you know, things for change. I think one of the key barriers to myself was that there's a lot, there's a lot that you like, you know, you don't know what you don't know.

So being totally blind to a big portion of the field, being blind and not having any, like, you know, necessarily support, like, you know, when my mother, my mother's a teacher, for example, and they like, you know, she talks about, oh, you can do this thing, be a teacher and oh yeah, there's this way to do that and this way, oh, I know these people that do certain things.

So I think, you know, allowing for people to come from different backgrounds is just a big portion to take. Getting into it, I think, you know, in terms of just I know people are interested in technical ability and I wanted to learn to, this that or whatever I say. You know, the beautiful thing about tech is that a lot of things you can learn is online. So even through my apprenticeship, there's a lot of self-learning involved. There's a lot of, you know, ambition that you have to have for the, for the career, for the industry and things like that. So I think that that's something that, you know, that I would really like to highlight about, but I want to keep mine short so that we have questions for, you know, if you have any more questions for me, try to find me to reach out to me personally or, you know, in the panel as well. So that's kind of the insight that I bring, and I would like to pass it on to whoever is next.

Annelies Goger [00:30:59] Thank you, Bryce. And I really appreciate that. And I think that's really resonates with what we heard when I was working with Lili to interview other people who are underrepresented trying to break into tech, that a really big piece of this is who you know and what kind of information you have access to in terms of like, you know, what do I what, what language do I need to learn? And you can teach yourself something, but if you don't know what to teach yourself, you know, who are you going to ask? And so those community assets are really important for connecting people to those networks. I think that's a really excellent insight.

Papia, welcome. I'm so glad that you could make it here from Opportunity at Work. And as you, as you've seen, we've been having some broader conversations about really getting into what is the challenge within tech in terms of racial equity and inclusion. And I know that you, Lili, mentioned the toolkit that just came out. And so I really wanted to help focus the conversation on Opportunity at Work, focus on skills-based hiring. And this is almost like our transition into the conversation directly about apprenticeship, but what is skills-based hiring and what is it trying to change within organizations?

Papia Debroy [00:32:12] Thanks, Annelies. And it's lovely to be here with all of you today. It's such an important question because I think a lot of us think we're doing skills-based hiring. But you know what, what it actually means is that we're hiring on skill as opposed to the way we actually frequently hire, which is through pedigree. It recognizes that workers gained skills through a lot of different, important roots, military service, training programs. In fact, I think, you know, in our survey work, we surface what I think a lot of us would say here today. We gain skills by showing up to work and getting better at our jobs by performing those tasks over and over again.

And the fact is, you know, there are 140 million of us in the U.S. workforce. 60 million have a college degree or a higher level of educational attainment. And college has always been a really critical pathway in the United States. But there are 70 million workers in the U.S. workforce, more than half the workforce who don't have a college degree and have a high school diploma. They're skilled, but through alternative routes, that acronym is as STARs. So when employers are hiring for pedigree as opposed to hiring for skill, they're actually automatically screening out almost 70% of our Black workforce, 79% of our Hispanic workforce, 73% of our rural workforce, and 64% of veterans.

And so this portion of, of our workforce today are just facing tremendous barriers to economic mobility. 70% of new jobs that have been added to the labor market in the last decade are ones

where employers have frequently required a degree. So they're automatically screening out precisely the populations they're trying to bring in in higher volumes. And I think, you know, certainly this population is vast, it's diverse, it's overlooked, and it's, it's quite skilled, actually. More than 30 million of these 70 million workers have skills today to perform in significantly higher wage job opportunities if they were given access and opportunity to actually move into those jobs. And I think, you know, for many of us in the field of workforce, we know, you know, we know the world is different for STARS than it is for workers with the bachelor's degree.

But we did some work and published a piece last year that actually showed that when a star entered the workforce in 1989, at the age of 25, they were earning less than the bachelor's degree worker. And that has historically been the case. But in this generation, stars actually haven't ever caught up. So 30 years into their career, they're still not earning what the bachelor's degree worker was earning on day one of their career. And that inequality is new and it's pretty stunning. You know, I think that as companies reach out to us to talk about what they can do in this space, I mean, an inclusive labor market starts with skills-based hiring. Thanks, Annelies.

Annelies Goger [00:35:10] And I think that's also been an important focus of my work in terms of asking the question whose learning counts, right? How do we decide who to give a degree to, because I sat in a particular classroom versus I learned this on the job or I learned this through an open course, where I'm learning the same things, but I'm not getting that degree. And then how does that actually penalize the candidate later on, maybe they do get hired, but do they get stuck in sort of a lower-level role within an organization. And this is one of the reasons why I'm really interested in, you know, how can we actually give people credit for learning that happens on the job in the military, etc.? And how can we really work towards things like degree apprenticeships and, where you get the degree? So it's not an alternative to a degree where you have to choose one track or the other, and then you're like off to the races. But it's actually you get the degree because you're actually doing the learning and that learning should count just as much as someone else's learning.

So anyway, I really appreciate those comments. So really diving into this conversation, one of the things I was struck by in the questions we received from the audience is how many questions we had interrogating this question of, well, what do we mean by apprenticeship in the first place? What is an apprenticeship? Is it an apprenticeship if it's six months long? Is it an apprenticeship if it's not registered, is it, what is the difference between an internship and an apprenticeship? Is it just an

internship by a different name, you know, can you get credit for an apprenticeship? And what happens if you don't convert into a full-time employee? Is that still an apprenticeship? So anyway, I thought I would throw that question out to all of you. Does anyone have thoughts on how do we distinguish between, you know, a quality apprenticeship, a real capital A apprenticeship, and other noise and things that are going on there and what's going on in that space right now?

Lili Gangas [00:37:11] I think, Annelies, even reflecting around the last five years and we've seen this model, we've seen tech companies also just the early adopters in creating their models. And we've seen it also be varied, which makes this question really important, because now we're also seeing models evolve, but just at a, at a high level, right. Internship programs tend to be 1 to 3 months, so they're much shorter duration. A lot of the times, those are for as, as Papia was mentioning, folks who are in the universities. Right. Folks who are also, there are companies that specifically recruit from certain universities as well, which also limits who has certain opportunities. And I think it's really important that we make sure that as we go through that conversation, that we're being very explicit on who has been, you know, left out continuously at the disproportionate level that I mentioned earlier, because those are really important reasons of why we need to have different models that are also, as Bryce mentioned, adapting and meeting the community where they're at. And so internship programs have been, you know, those shorter, a little bit more biased towards certain groups. Right.

But when you think of apprenticeship program, that's a much, it's a much longer. It can be from six months to usually a year longer. That has, you know, more structured learning, a blending of classroom, but also very important job-based learning. That's the most important part that we want to make sure that people are learning as they're going and they have mentors, they're getting paid. They get also additional support to be able to be in this space in a full time. Right. And ultimately, they're left with credentials that allow them to be offered, ideally a full-time conversion.

So we want to see apprenticeships as not just the training, the opportunity, right, to to develop that skills, but ideally these should be converting into full time jobs. Granted, not all the models do that. But I think that that's where we should be pushing that conversation. As I shared those, the numbers, right, the disparities, the how we're reassessing given the population demographic change. And so I really do think that it's important to making sure that we are looking at how do we encourage more of that conversion. And once they are converted to the points that Jacqui mentioned earlier, how

do we also continuously support that talent to advance, to get equitable pay, to be able to continue into more of those senior leadership roles? Right. And I think one of the part that, it's interesting here and I would love to hear also just from the, Papi and the rest of the folks on the panel, are the registration requirement, right, we had Manny, we talked about the amount of investment that the DOL is making. But I know that a lot of apprenticeships are also not, registration are not required. So wondering what we can do there.

Annelies Goger [00:39:44] Yeah, actually, I want to bring Manny back on here because he wanted to share the DOL's definition of apprenticeship. And I also really wanted to note that the reason we have registration isn't just to create admin hassle, right? It's actually to make sure that there's some quality control here. And I will say from my perspective, part of this conversation is how can companies do more to make sure that they're getting that quality control? But also, what is the government doing? And I'd love to hear Manny reflect on this also to make sure that those processes for registering apprenticeships are appropriate for the tech industry, like the terms that are being used, the requirements that are part of the registration process. Are you doing anything to kind of innovate and how that happens and make sure that it's not so burdensome for an employer to do it, that they don't see the point in doing it?

Manny LaMarre [00:40:38] Absolutely sounds good. I'll just quickly touch upon this. And I used to oversee a state apprenticeship agency as well. So I'll just mention that from the Department of Labor, our definition of apprenticeship is really one, industry driven, high quality pathways, but there are some key components. So we often differentiate, so in the field of workforce we hear apprenticeships a lot. So we like to differentiate between kind of like, you know, big A apprenticeship which is registered because there's a quality criteria and like the general term of apprenticeships. So for the Department of Labor, the apprenticeship one, the related technical instruction, which is a minimum of 100, recommended minimum, 144 hours, usually equate to about a year, recommended 2000 hours of on the job learning. And that's the actual work experience.

And of course with the mentorship, that leads to a nationally recognized credential, that's really what it is. Paid on the job learning that, with a mentor that leads with education, that leads to a nationally recognized credential. Now with our registered apprenticeships, they're either registered at the federal level or the state apprenticeship agencies. About half the states are registered at the state level and about half are at the federal level. All of our registered apprenticeships, they are paid on day

one and that's a requirement that they are paid on day one, if you have a registered apprenticeship program.

In terms of innovation, just really quickly and you know, this is something we've heard, and this is something when I was overseeing apprenticeships at the state level, we've heard too, we've, really have a few strategies to accelerate that. One, you could find them, of course, online, where—and I referenced some of those in my initial comments—which is some of the tools we've created to accelerate the development of registered apprenticeship programs. Two, we have some concrete examples, particularly through the cybersecurity sprint and even when we did this in other sectors where we're able to launch programs within 48 hours, actually, and we have some concrete examples, particularly if they were attaching to an existing sponsor. So I think that's an important kind of piece. And then the third one is, of course, is leveraging and increasing both staff capacity and tools and our intermediaries to accelerate the development. Particularly when we're talking about tech and as we referenced, cybersecurity, we have quite a few examples of those.

But I just want to differentiate when we talk about apprenticeship, like the registered component, there are some quality criteria as part of that. And we've really moved to accelerate and improve the processes, particularly if you're registering at the federal level. But of course about half the states, they have state apprenticeship agencies and that includes an equal employment opportunity that I referenced, which is ensuring that there's fair hiring, recruiting practices and so on and so forth. So apprenticeship dot GOV, you can learn a lot more about some of the tools I referenced, but when we're talking about registered apprenticeships at least at the, DOL level in terms of registered, they are paid on day one, classroom instruction, mentor, on the job learning that leads a national recognized credential.

Annelies Goger [00:43:34] Thank you, Manny. And I think, you know, having those intermediaries well-funded is a really critical policy recommendation that I always, always, always cite, because those intermediaries are essential for taking that burden off of employers and making sure there's more of a system in place there to help, you know, help them answer questions, help navigate, like how do I, what kind of changes do I need to make inside my company? You know, how do I train my managers? Those are all really key elements of this, I think, as well. So I'm really glad to see some resources going into that. Bryce, I wanted to kind of turn the camera over to you again, back to ask you what has it been like to be an apprentice in tech and what have you gotten out of this

experience that's both valuable on the one hand, or are there any challenges or things, supports that you think would be helpful for folks to keep in mind into the future?

Bryce Jackson [00:44:34] Thank you so much. Okay. So during my experience as an apprentice, I've had this, the beauty is, is that I always tell people this, there are apprentices coming up before me, there are probably apprentices coming up after me. There are obviously apprentices coming up after me, of course. But I always tell people this, like, the beauty, the beauty of an apprenticeship is that you are paid to learn. You are not paid to complete a job. You are not paid to do, like you are paid to learn. And I think that, you know, that needs to be the central focus in a lot of the stuff that we're talking about. Like, being able to like, so just that opening so many doors for me, I think that, you know, if I even could offer criticism, I think that that wasn't emphasized enough. You know, you need to learn about not just tech. You need to learn about the industry and how to be like, you know, don't just learn JavaScript, don't just learn Python, don't just learn, you need to learn about the industry, need to learn about, you know, like what, what people are looking for. So like not even just, and I think the beauty in tech too that is always revolving as well. So like don't even just learn Python because you're going to like get the same, okay, I have what I call the year of experience, but like if you, if you, if you truly are learning about the tech, now that, sometimes people don't consider your one year, one year, you know, they don't consider your two years, a two year. So like, you know, you need, I think it's deeper than just JavaScript, it's deeper than just Python. It's about a lot more than that. I think those are barriers.

And I also think that, you know, that's what's been the blessing thing for me is just that, you know, I was able to go a little bit further than most, which maybe they don't understand that, you know, I think that needs to be drilled into people because I was able to learn, but even still I haven't learned enough. And as well as, you know, just like leadership. So like sometimes like, who leads your apprentice, like who, who are you looking to for support? What are their teaching styles? What are their style, whatever. So I definitely like I can see some people who may maybe like, you know, it's a learning experience as well. So like you have to be a learner as well as, but there's more things I want to keep in short to more specific questions instead of giving a speech, you know, I'll pass to the next or the next question. Thank you.

Annelies Goger [00:46:41] Thank you. And I think I wanted to turn it to Papiia actually now to, you know, I think about a decade ago as a field, we just, we thought about how apprenticeship could

not just create access to communities to get a quality job, but also for companies to diversify their workforces. And so this is where I really want to get into this connection between apprenticeship and racial inclusion in tech itself. Can you share a little bit about progress towards that goal and what you've learned recently in some of your work at Opportunity Work?

Papia Debroy [00:47:16] Thanks, Annelies. You know, I think the headline is that the data showing apprenticeships have been a successful way for employers to fill good jobs. But beyond that, they're actually diversifying their pipelines pretty considerably through apprenticeships as well. And so we analyzed data sets from the Department of Labor, and we've been working with LightCast to actually study job postings over the last several decades. And what we see is that first, employers are expanding apprenticeships into a lot of new roles in the labor market. So some of the work that we're, we're publishing just this week actually shows that whereas traditionally apprenticeships were concentrated in the trades, companies are deploying apprenticeships now in tech and management and health care and a lot of new, newer occupations.

And so, you know, registered apprenticeships we've seen grow into 100 new roles in just the last ten years and in formal apprenticeships we're seeing an additional 200 roles from that. In addition to, to that finding, what we're seeing is that, you know, workers of color and women are overrepresented in apprenticeship programs relative to the workers and the jobs that they're actually preparing for. That's kind of a confusing statement. So let me just talk through that with an example. So whereas 8% of workers who are management analysts are Black, we see 19% of apprenticeships in the pipeline to become management analysts are Black. And, you know, whereas 20% of software developers today are women, in 2021, women made up 31% of people entering apprenticeship programs. And that's really exciting, right? We are seeing exactly what we had hypothesized ten years ago actually start to come to fruition. You know, I think beyond that, Lili, to some of the work that you referenced in the toolkit, it's really exciting to see the innovative ways that teams are actually trying to drive for this shift within their own organizations. And, you know, the toolkits actually show how employers, employees have had some success in advocating to their leadership teams. You know, this is a, this is an important part of building a more inclusive work environment within our own companies.

Annelies Goger [00:49:30] Yeah. And I'm really glad that you mentioned how a lot of these newer apprenticeships are putting more diverse cohorts into organizations that are currently in the

role. But historically, as many of the people in our audience asked and some questions they submitted, apprenticeships don't have a great history of being racially inclusive.

And so I wanted to actually turn it to you, Jacqui, you also were an apprentice, but, but I wanted to hear your perspective on like what are the actual like nitty gritty elements in an organization like Airbnb or another tech company? What are the actual ways of making that like, what's the pre-work that a company needs to do to make sure that someone not just gets in the door but feels welcome once they're there and can advance once they're there.

Jacqui Watts [00:50:19] Yeah, thanks Annelies. You know when it comes to thinking about the design or what the key elements of a program are that we can help to make a tech apprenticeship inclusive, you know, not only do we need to be aware of a lot of the more general pitfalls that we talked about earlier that the tech industry does fall prey to. But on top of that, there are some added challenges, such as, you know, an increased, I would say an increased prevalence of, you know, imposter syndrome or simply the dynamic of you're trying to get hired at the end of the program. These are all things that I really, you know, keep as very important factors to consider as you're considering how to design an apprenticeship program.

And then in terms of some of the key ingredients that we've found really crucial in the design of, say, the connect engineering apprenticeship program that that we run at Airbnb. Well, some of those things start at like how do we get the word out about the program to the very candidates that we want to make sure are able to apply and to be a part of the opportunity. So we've developed close community partnerships such as with the Kapor Center as a way to get the word out and, and support them. And how do you apply how do you find the right, you know, folks who are at the right readiness level to be joining the program. When they're with us, when apprentices are with us, we want to make sure we have the right support in place. And that's a really key part of the puzzle, because people really are the secret sauce of making a program like this work down to the mentorship, the support, you know, in terms of folks from around the tech org who are supporting the training period. I myself may have the title of the technical instructor, but I lean on so many folks from around our technical org to support the training period and how apprentices are learning their skills and applying them in the workplace.

And then in one other kind of part on that support system, we find that it's really important to build peer connection and peer collaboration. It's not an environment of competitive, like a competitive

environment, there's only X number of people who are going to be able to get the opportunity to convert. Our program is specifically designed so that everybody who's able to demonstrate the competencies of that role are able to, to convert and get a full time offer at the, at the company. A couple other really important things I think are about clear expectations, right? It's kind of a, it should go unsaid, but sharing with apprentices, what are you going to be assessed at at the end of the program, making sure we have really tight feedback loops in place and are giving them a clear idea upfront about what those assessment criteria are going to be.

And then finally rallying the support of everybody around the company, especially tech leaders who are passionate about seeing that change. And we would be, we would not be where we are today if we did not have the advocacy from leaders, from managers, from folks from just all around the company to help make the program successful. So those are, I'd say, are some of the key ingredients.

Annelies Goger [00:53:37] Thank you. And I think, you know, to me, another really big question when we're talking about racial equity in tech is— racial equity in general in this country— is the fact that there's a disproportionate number of people of color who have a record and a lot of hiring practices automatically disqualify someone from candidacy just because they have a record. And there are some organizations like Next Chapter they're starting to work in the space of inclusion. And so I think that's another really key metric to pay attention to, is my organization just doing blanket hiring where we're excluding people because they don't have a degree, because they don't have, because they have a record. But are there other, what other kinds of supports might someone if you're coming out of incarceration, you're trying to get your life started? What are some other supports, does anyone else on the panel want to kind of jump in and share some things that you think would be helpful.

Lili Gangas [00:54:38] I think one of, I can jump in, I think just to— oh, go ahead, Bryce.

Bryce Jackson [00:54:42] I'll keep it, I'll keep it short, I'll go really fast. But no, I think that that's a really good point. And I think just allowing them, you know, like Papia spoke to earlier, just we're hiring for like what you can do, not, you know, like coming to them, not judging them, not this that or whatever, because people really can do it from all different backgrounds. And I think that's what's the biggest thing to face. And that's just not what the reality of what the world is like at the moment. People like, you know, oh, like their apprenticeship was like this, you come from this

background, you (inaudible) like people look like this, but you know. Anyways, but go ahead, Lili, I'm sorry about that.

Lili Gangas [00:55:20] No worries, thank you. And I think the one thing, too, that we have to, and Bryce, thank you for sharing that, because we have to remember, as I shared at the beginning, this is a workforce development, urgent need to fill. The talent exists. The talent is being trained. What we are really, at the intersection is that some of the current hiring practices of these tech companies are outdated, to be honest. I started my career as a software engineer, so I know how fast technology moves. Some of my roles got automated. Where's the upskilling for some of the talent? Right? Where are, some of our education channels are not adapting fast enough to the tech that's taking place. Even our policy right, that's what we're having issues on the tech policy side, the Kapor Center just launched our equitable tech policy initiative that looks at it as an ecosystem, because one of the issues that's being brought up is that we have systemic barriers from k through 12 access as foundational as digital and broadband affordability, speed, access to computer science, all these different areas, and then also alternative pathways, right? And then ultimately, we have to also take a look at who gets to invest in the new jobs and the new technologies. And so I do think that it is an ecosystem perspective.

And to your point, Annelies, what are some of those wraparound services? This is where the public and private need to come together to work with community-based organizations, with mission-oriented companies, to make sure that we're really meeting the community that we're at. The big tech, the five biggest tech companies made over \$5 trillion, but yet corporate taxes are the lowest it's been in 40 years. So that means that our communities are not getting their reinvestment into our public systems that are needed to help create a level playing field that, as I shared, we have historically racist structures that we're still operating. So we're really now at this point where we really need to redesign and we have the opportunity, we have the funding both at the, at the federal level, across different areas.

And so for me, my call is really thinking about what are the companies doing and not doing. And I think the communities that I've seen, especially in Oakland and you've seen this Annelies, like community-based organizations are going above and beyond. People are really looking at providing some of those wraparound services around childcare, being able to provide even health care. Right. As we're seeing in the midst of the pandemic. And so I think that there's a lot of opportunity for

collaboration, but I also just want to make sure for the employers, right. A lot of the challenges in providing some of these services is also, it's complicated in the way they, they value their ROI.

And so the toolkit that we just launched, as Jacqui just mentioned, it really brings all these different pieces and best practices into one area. So then that way employers no longer have that excuse, I can't find them, they're not right skilled. No, there is actually, and to your point, Annelies, this isn't charity. This is doing better business and it's required to be inclusive business. And if you want to be able to stay competitive with the changing demographics, the changing customer segments, you better make sure you have a clear strategy of how you are addressing that inside your company as well as externally and thinking about the communities that you're operating in.

Annelies Goger [00:58:27] Thank you, Lili. Yes, absolutely. And I really appreciate your taking us back into these longer histories, again, kind of where we started. Because really the K-12, the community, the level playing field we need isn't, still is not there. And I think that's really important to acknowledge. But I know we only have one more minute left, so I wanted to do a bit, a bit of a lightning round and say to you, if you were sitting in front of your congressperson or White House advisers, what is the policy ask, what do we need to make sure that this gets the attention it needs into the future? I'll start with you, Jacqui, and then I'll, and you can just go around real quick.

Jacqui Watts [00:59:10] Sure. So I guess the thing that I'm excited about and this is less of an ask and more of a, you know, as we're putting funding towards these efforts is really, you know, seeing this also stretched towards pre-apprenticeship programs and, and really ways of helping, if companies are starting up apprenticeships and want to be able to capture the right audiences, let's support those, those early efforts.

Annelies Goger [00:59:39] That's great. How about you, Lili?

Lili Gangas [00:59:42] We love to see the expansion, but we need to be not at the thousands but at the millions of how we're mobilizing. And we want to make sure that we're also making sure that we're providing higher wages. So we want to make sure that we're not creating even more separated, but also very discriminatory, on the way you're starting. So I would love to see more data transparency, more advocacy around making sure that the wages continue to increase. And also making sure that we're including community colleges, HBCUs, HSIs into the conversation.

Annelies Goger [01:00:14] Yeah, definitely. All right, Papia, how about you.

Papia Debroy [01:00:18] So plus one to Jacqui and Lili your recommendations. I would add to that, I would love to see funding for better data about our workforce. You know, we do need better longitudinal data about where workers are over time so that we can study how these skill investments are actually supporting our workforce over time. And I think, you know, ultimately, we want to be able to target our investments and our people with precision and with confidence. And it all starts with, with that, with that data collection effort.

Annelies Goger [01:00:47] Great point. And, Bryce, you're going to have the last word.

Bryce Jackson [01:00:50] Perfect. I appreciate it, I got two actually. My first one is that I say that you better incentivize large companies to appreciate their apprentice. Like, right now, you get to these smaller, like, you know, and you say even to deal with the world that we live in, you incentivize a large company to hire someone like me. Now I have the prestige, so I'm still in like I'm able to adapt currently right now. So I think, you know, giving a bunch of money to Airbnb for bringing so many people on might be a cool thing to do.

Secondly, I think that you need to, you know, start to, I don't know, with a lot of federal jobs and things like that, break down, you need to have this degree, these hard lines that are like like, you know, and I think that's part of the marginality. Like, you know, for me, like all my friends play basketball. That's what we're concerned about. And that's just kind of part of my culture. I don't know what like my background, where I come from. So because I don't get a degree now, I could never do blah, blah, blah, no matter how skilled I am. And that's the hard line that, you know, the government is starting to break those down so that you can really have, you know, diversity and inclusion of different backgrounds and different people, things like that. So those are my two. Thank you.

Annelies Goger [01:01:52] Thank you so much. And happy apprenticeship week, everyone, and thank you behind the scenes to Karen and our AV staff and everybody at the Kapor Center who also contributed to this event. I really thank you all for joining us and we welcome your comments and feedback after this event. Thank you very much. Have a great day.

Lili Gangas [01:02:13] Thank you so much.