

TW for “How to get a paying job in STEM- Dr. C. Prescod-Weinstein”:

Slavery

Institutional Racism

Mental Health

Academic Drinking Culture

Pruthvi Mehta 0:00

Hello, welcome to the POCSquared podcast. This week's episode is going to be part of a special series of episodes with one episode a week for the month of August 2020. These episodes are interviews with people of color who hold PhDs in the STEM field about what it's like to get a paying job in STEM after graduating. This week's guest is Dr. Chanda Prescod-Weinstein, an American and Barbadian cosmologist, science writer and equality activist, based at the University of New Hampshire. Prescod-Weinstein's research has focused on various topics on cosmology and theoretical physics, including the axion as a dark matter candidate, inflation and classical and quantum fields in the early universe. Prescod-Weinstein is an advocate for increasing the diversity within science by considering intersectionality and proper celebration of the underrepresented groups to contribute to scientific knowledge. She maintains a wonderful decolonizing science reading list, which you can find on the media page of the POCSquared website. She's also the author of *The Disordered Cosmos: From Dark Matter to Black Lives Matter*. A book which draws her experience and knowledge as a black woman, theoretical physicist. Please be aware that the episode will contain mentions of the following topics: slavery and institutional racism, academic drinking culture and mental health. As usual, the transcripts and show notes for this and all episodes can be found on our website www.poc2.co.uk. That's www.poc2.co.uk. And if you have any comments or questions we can be found on Twitter and Instagram at POCSquared. That's POC then the word squared, no spaces. You can also contact us by email at pocsquared@gmail.com. That's POC and the word squared@gmail.com. With all that said, we hope you enjoy the episode.

Karel Green 1:46

If you wouldn't mind introducing yourself and what you work on in science.

Dr. Chanda Prescod-Weinstein 1:51

So, I am Dr. Chanda Prescod-Weinstein. I am an assistant professor of Physics and Astronomy and core faculty in Women's and Gender Studies at the University of New Hampshire, in Durham, New Hampshire in the US.

Karel Green 2:03

So yeah, so you said that you are a assistant professor at the university that work at. So like, Can you explain to us like what that means in terms of academia?

Dr. Chanda Prescod-Weinstein 2:16

Yeah, so, I guess... My guess is that folks in the UK are more familiar with American terms than vice versa. But just to be clear, so my level is essentially like at the most junior lecturer level. I just started in my faculty position last January, and my tenure clock started in August. So I'm basically baby, I'm faculty at this point. And I'm... So yes, so I'm an assistant professor in Physics and Astronomy. So my tenure appointment is entirely in the physics department. My core faculty status in Women's and Gender Studies means that I have certain rights and Women's and Gender Studies and they will probably make a contribution to my tenure file but I don't have to teach classes there, and they don't actually get to vote when I go up for tenure.

Karel Green 3:06

So you have clearly stayed in academia. And yeah, so we wanted to ask, especially because you've stayed in academia, like presumably you did postdocs before you got a actual like lectureship at a University. So we wanted to, like ask about those. And so generally, well, first of all, generally, like how did you use your PhD skills in any postdocs you did? Do you think that your PhD personally like, accurately prepared you for like becoming a postdoc? And you know, what were your experiences going from finishing a PhD and becoming a doctor and then actually, you know, doing science on your own?

Dr. Chanda Prescod-Weinstein 3:52

Yeah, so this is of course gonna vary from subfield to subfield, like I even think it's pretty different... So I guess I didn't mention before that I'm a theoretical particle physicist and cosmologist. And so in my particular field things, I think, are quite different than, for example, experimental condensed matter and solid state physics. And, to me those differences, because I also do like sociology of science stuff, these differences are actually super interesting, like, why why there are cultural differences. So in particle physics, when you when you get to the point of applying for postdocs, you have to submit an application, there is a place where all of the jobs are announced, and you choose which jobs you want to apply to. There are a few fellowships that you have to be nominated to apply for. So there's one at MIT, there's one at Harvard where you have to convince your advisor to nominate you. But generally speaking, if you want to apply, you can just apply. My understanding in condensed matter experiment is that often you are reliant on your advisor to seek out positions for you and so it's a lot more what is your advisors network and is your advisor the kind of person who will seek out positions for you and it gives people actually a lot of control over who even gets put up for a postdoc. And I guess I highlight this partly to just point out that the disparities that we see in physics in terms of who participates are fairly nonlinear, that even in a field where, for example, you see more black women, like condensed matter experiment, that actually the transition from PhD to postdoc can really be dependent on who your advisor is. That's generally true, because you need a letter of recommendation from your advisor. And so I guess, this doesn't really necessarily recount my experience, but I think it's the context in which all of these experiences happen, right, is that we're dependent on our advisors. We're asking our advisors to write letters of

recommendation, we're asking them to get them in on time. My application process was a little bit bumpy because one of my advisors didn't turn in all of the letters on time. I've actually heard I actually heard from a couple of places that they never got one of his letters. And so, so that was definitely so I, I think the first time I went on the job market, I was coming from I did my PhD at the University of Waterloo in Ontario, Canada. And I did my PhD work at Perimeter Institute, which is an independent theoretical physics research institute there. I was really their first cosmology graduate. And so we had no idea how I would do on the market. And so I basically threw darts at everything, just to see like, if I would hit anything, I think I applied for almost 100 jobs that first round. And, and so in some sense, like what skills get used, etc, that being permitted by who gives you an offer. So I was offered two different postdocs. I was offered one at a theoretical physics Institute and Trieste, Italy. That would have involved me basically continuing on exactly the research path I was on as a PhD student, doing things involving both cosmology and quantum gravity, kind of from a non traditional perspective. And then I also won a prestigious fellowship to go to NASA to work at Goddard Space Flight Center in the observational cosmology lab. And that would have involved me making a different turn. How I made the decision, I ended up choosing the position at NASA. And actually, a lot of it had to do with me being tired of being black in a foreign country and wanting to go home, because at least I understood the racism in the United States, and how to negotiate it. And I didn't want to learn about racism in another country all over again. That is, that was a big piece of it for me. Yeah, I was thinking I was just going to add like in terms of like that what ended up happening is that the guy that I wrote the fellowship, proposal to work with ended up taking a faculty position in Canada, on the other side of the continent, in fact, and he left NASA, almost as I arrived, we had like a couple of months of crossover. And so I ended up having nobody to work with and nobody to supervise me and support me in executing the project. So I ended up spending a lot of that year learning about observational astronomy, which was like not at all what my dissertation work was, and it was not what I was prepared to do. So what I learned during that year has subsequently been useful, but it took a long time for it to translate into being useful. And that was actually a very dangerous moment for me professionally, because I could have just washed out and ended up not having a career after that. And I guess like the the comment that I would make about that is that going back in time, the kind of advice that I wish I'd gotten as a PhD student is that your PhD is supposed to prepare you to be an independent thinker, someone who can pick a project and execute it. And I am not sure that I was there, when I finished my PhD, I certainly knew how to do the work. I had written up the dissertation. But I am not sure that my advisors had done what was needed. And so I ended up being a postdoc for a long time. And that was part of why I had a very bumpy beginning.

Pruthvi Mehta 9:27

Looks like you've hit on like so many points with regards to like our own experiences and what we've sort of thought about like going on in academia, like you've mentioned, the whole um not like the whole idea of, especially if you're like a person

of color, especially if you're black, you know, going out of like, your comfort zone and you're in your country to experience to possibly open up to racism in another country. You know what a lot of academia just makes you travel because you don't like you don't know where you're going to end up basically, and how like sort of unsettling sort of that must definitely be if you're trying to think about where to sort of pick your next position. Um, and you also touched on the whole networking, like the whole like, idea behind networking how fundamental it is to academic progression. You were... like we've talked about a lot in like other podcast episodes about how if you're a PhD student, the if you're if your undergraduate student he wants to be... who wants to go into a PhD in lots of it relies on like, relies on who you know and who you're comfortable like talking to you and stuff and a lot of socialization in this in this country happens in balls and plays for alcohol served and how that really like... You know, I have a lot of friends who can't enter a pub and bar for like religious reasons, and it sort of automatically cut them off from being able to take that next step and make that connection with a potential supervisor or something? Um, and yeah, I just it just you, you've hit on loads of good points like you basically like talked so much that we're in a weakened sort of, we can sort of understand.

Dr. Chanda Prescod-Weinstein 11:11

The drinking culture. And I do think we can call it a drinking culture in physics is really problematic. I am sure... So I can really speak about physics, but I think physicists are probably not special on this point. I think it's probably academia in general. But particularly at perimeter there was this really big culture of "Okay, we've had journal club for cosmology for an hour. Let's now go to the Jane Bond, which was the bar that everybody frequented and continue the conversations over some beers". And I experienced, like, multiple like racist incidents, and definitely some people being handsy with me um during these moments, there was one friend of mine, a woman who was a hijabi, who, for whom, like, this was not an option to continue conversations in the bars. And people were totally insensitive and basically suggested it was her fault for being in hijab, which is like completely inappropriate. And I think, frankly, illegal. But...

Pruthvi Mehta 12:18

Yeah.

Dr. Chanda Prescod-Weinstein 12:18

People don't really care about the law. And I guess I will just make the comment that one of the commitments I've made to myself, and anybody who works with me as a junior faculty member, is that we don't do that. I don't drink with people in my group. Like maybe, you know, if they're graduating and I'm throwing them a celebratory dinner, they can order wine if they want to whatever, but that is not going to be a regular feature of how my group interact socially, or um certainly not part of our scientific conversations. And actually, I don't participate in some members of my department have drinks together once a week and I've just made it a policy that I don't drink with colleagues.

Pruthvi Mehta 13:00

Yeah that's something I think that if I carry on I'd probably have to do as well because I just the entire the drinking culture is just it's just so there's just so much of it and there was a point especially in first year I think I think it's calmed down but first year my PhD, where the predominantly like white male core cohort in our PhD or office just sort of went out for a drink at lunchtime and also after like after work at 5pm every single day. This isn't like why? I just it's just it's just it's just really bad. It's really exclusionary. I will end up having to like just not... I just didn't want to be there like pubs are just sticky and gross and I don't like them. Yeah, they're just they're just really exclusionary me like places to be in, it's not pleasant a lot of the time.

Karel Green 13:54

I wanted to like pick up on the point because like, again, I like basically agree with everything you've just said, that everyone's just said, like thinking about when you said that you applied for 100 postdocs, and that went back to me because I applied for like 30 PhD positions across the entirety of the UK because I was screaming. Um did... Well first of all, you said you got one in Italy? Did you like apply all across the world? Or were they like majority in the States or something like that? And then yeah, just more of your thoughts on like, from what we saw, gathered to continue past a PhD and even at some point during, well, maybe before that, you know, to get a PhD, like having to sort of like pick up and move to sometimes to a new continent, just to continue on in doing the job that you may or may not want to do. Like...

Dr. Chanda Prescod-Weinstein 14:48

I definitely think that this is something that people talk about, and see it as a problem. The fact that you have to be very geographically flexible. I also think it's not an easy problem to solve. This is really something that I've thought about. And it clearly particularly, is challenging for people who have caring responsibilities, whether that's to children or other members of their family or other members of their community. And yeah, so I applied, I applied everywhere. So I applied to jobs in Korea, I applied to jobs in Japan. And I am... I think that all of my job applications were either in North America, Europe, generally speaking Western Europe, um Western Southern Europe, or, I think Korea, Japan. So I don't think that I applied to jobs like central Eastern Europe, or um anywhere in south or Southeast Asia and a lot of that has to do with what jobs get advertised to whom. And where there is many to support research in theoretical physics, which often theoretical physics is treated... I have complicated feelings about this, the theoretical part like particle theory, high energy theory is considered kind of luxurious, right? So even here in the United States, and very few of the historically black colleges and universities have people who think about dark matter or string theory or cosmology on the faculty, which is really a shame, because we're cheap, we don't cost money. And but there are lots of sort of social and political forces that work to encourage places like that to, for example, focus on research that benefits the military, and I don't do that kind of work.

Pruthvi Mehta 16:48

Hmm.

Dr. Chanda Prescod-Weinstein 16:49

Yeah, we can we can have like a whole podcast episode right about historically black colleges, STEM and the military um for example. But, so my applications were in some sense shaped by who's hiring in my field, right? And who's hiring in your field is really dependent on, you know, in the United States who got an NSF grant, who got a Department of Energy grant and can hire a postdoc on a grant, which University is cozy with whatever giant foundation that's handing out money, and has so like the fellowship at MIT that's very prestigious, it's the Pappalardo fellowship. Neil Pappalardo gave them a bunch of money for that. Right? So the University of New Hampshire can't hire people like that because we don't have Neil Pappalardo who's like giving lots of money to the department. So then when we talk about the problem of like geography, um it's easy to say, well, someone should have should be able to get a job in a place that makes sense for them and their family. But it could be that the place that it makes sense for you and your family is, you know, somewhere in the middle of like now I have to try and pick, like maybe Alaska is the place for you and your family, right? Because that's where your people are but then the University of Alaska doesn't have a robust research program in your field. Or if you're in a a two academic partnership, then maybe the university that has robust programs and your partner's field doesn't have robust programs in your field. And that's not an easy structural problem to solve. And it's not entirely rooted in bias. A lot of it just has to do with you have to build up groups. And different places have built up different specialties for a variety of reasons. It's definitely easier as a person, I don't have children. I didn't have children back then. And I had just gone through a divorce. And so I didn't have to worry about my ex wife coming with me. I had before we separated I had actually been very worried about coming to the United States because this was before gay marriage was legal in the United States. And so she didn't have a right to immigrate to the US with me to come back. And so I thought, if I can't get a job in Canada, I'm gonna have to quit Physics because she can't actually go anywhere with me. And so actually, like, getting a divorce, and not being in a relationship with a woman actually made it easier for me to not worry about that. And not worry about being in a long distance relationship. So also like, yeah, not being in a queer relationship was helpful at that point.

Karel Green 19:37

We talk to know of loads of different people who are like worried about their relationships and how that can affect where they work. Was it the you said that people could the two body problem which is...

Pruthvi Mehta 19:50

Yeah, yeah, yeah... My supervisor was like, yeah, so that's a problem that there's no real like, there's no real solution to not sure if there will be. The profession itself doesn't help with that.

Karel Green 20:06

We just wanted to talk about in general because I really resonate when you said you didn't want to learn about racism in another country because I think about that a lot. I only speak English I, I, you know, I'm just not willing to do that. And like even little things like I mostly I think about it because I've got a bunch of like food allergies and just, you know, I'm from London, which is a very, you know, ethnically diverse, sort of like part of a first world country, whatever else and it's hard enough to get food here like that... And it's just, it's just so many little things. So if I can't with a food allergy, not really wants to move to another country, or like you said, like, people in LGBT plus relationships, people who are actually disabled things like that are expected to move and we we thought we just try and talk about it because like literally nobody does. And that's a lot of the problems that we have in STEM and getting a job in STEM and staying in, you know, a scientific research job if you want, because it's what is so much more than just research trying to, like you said, get grant money to pay your bills, which is the worst. As far as I can tell. Nobody likes doing it.

Pruthvi Mehta 21:21

I've got a question about before you started your like, postdoc, so first postdoc, did you ever consider sort of not staying in academia? Did you consider maybe other career paths? Was that ever an option?

Karel Green 21:39

So did you take a break? If you didn't that what are your thoughts on taking a break? What are your thoughts on people may be leaving academia, I don't like the idea of leaving academia but like, getting a job for like, five years somewhere else because again, paying our bills comes first then trying to get an academic job.

Dr. Chanda Prescod-Weinstein 21:58

Yeah. So I didn't take breaks. And that was... Yeah, for me it felt like so I should say like when I went to college My mom always says you have to say that you were poor... I'm laughing about it because I often I have traditionally said that I was working class. And I have complicated feelings about using poor as an identity moniker largely because I had unusual access to like social capital and things that poor people don't usually have. Like, I had a passport as a kid and was shuttled back and forth between my grandmother's place in London and my my home in Los Angeles. And so like, I I know how to walk around Kilburn just as well as I knew how to walk around East LA, right and so, I am, but but part of that certainly was that you know, going home and just hanging out at home for a year wasn't an option for me as it was for, like some of my classmates at Harvard after college, like I couldn't just be like, oh, I'll just hang around and see what I want to do. I also didn't have someone in the family who was going to hook me up with some like cool paying job.

Um even if it didn't like pay well, a job that like I might not hate doing for a year or two. And so for me going into graduate school made the most sense financially. And I also I'm one of those people who knew what she wanted to do. And I want to be really clear that I don't think you have to be like me in order to be successful as a physicist, so I don't want to like sort of reinscribe that idea that I figured out what I that I wanted to do particle theory when I was 10 years old, and I pushed and I kept going and I followed that path. Totally okay, if that's not you, if you're not sure if you're taking time to work it out. I mean, you know, homogeny is not good for physics. So I know don't want everybody in physics to be like me. So I think that taking time off can be good if you can make it work for me coming out of my degree with like, you know, with a physics and astronomy major, the kinds of options that were really available to me were going to work in the military industrial complex, which for ethical reasons, was a non starter with me. Teach for America, which I think is like a really like not great organization was something that a lot of people I was graduating from university in 2003. Like 60% of my class went into like management consulting, I got recruited pretty heavily by management consultants, but for ethical reasons, again, a non starter for me. So I would say that a lot of the things that other people might feel like were an option, were just like, not an option for me because of my political position. And so going to graduate school immediately also made sense in that way. It is also the case in my field that once you have the PhD, you have to keep working in the field or you can't even come back. I think that that's different depending on what you're like... I think if you're doing a material science, there's a lot more kind of freedom in there. But I guess the other comment I will make for people who are thinking about doing this, I think taking time off can be really great if you can afford it, and coming to graduate school, into your post grad programs, as someone who's more mature emotionally and intellectually can really serve you and help you focus and get through the program. But the other thing is, is that means that you're more likely to be in graduate school with kids, surrounded by people who don't have kids. There are trade offs in there. I'm not saying that they're fair trade offs, right. But there they just are. And the other thing is, is that you know, if you want a tenure track position, you have to decide do I want to be chasing tenure at 50. As it is for me, I am turning 38 in a little bit over a month, and I will be chasing tenure halfway through my 40s, basically. And for me that's already like, I would have liked to be done with that by now if I could have. So those are the those are the kinds of things that I encourage people to think about. I think it's fine if you don't care that you're chasing tenure at 60. I actually heard someone like recently like that their mom just got tenure. And I was like, that's awesome. Um it's just not what I wanted. But if that's if you have other priorities, like you want to spend some time, get your kids into, you know, first second year primary school and then go back to graduate school. Like you only have one life. And so you kind of have to think about what do I want to do with the time that I have?

Pruthvi Mehta 26:48

Yeah, that's, that's true. Um, I think something else that I sort of wanted to ask is that, I mean, as I like, as you know, a current PhD student, you get a lot of people saying

stuff like, Oh, you know, everyone wants to quit at some point in their PhD. And like that was one of the first things like one of the first things you hear when you're like, you know, told about what a PhD is, you hear that a lot of people feel like they want to leave it at some point. And I just, I want to get your thoughts on. Like, what do you feel about that? Whether it ever occurred to you or like anyone you knew doing a PhD? Or, like, what do you think about the whole sort of, I'll say, a defeatist attitude that people have when it comes to a PhD, because most people do graduate and do well. It's just this feeling that you put under so much pressure that you want to like leave. And that's, that's something that to be expected. Like, that's sort of the idea that that's something that's very natural, as part as part of being a PhD student is sort of, kind of not great in terms of like the outlook so I just wanted to get your opinion on what that's like. And if you've ever been doing it yourself or know about it.

Dr. Chanda Prescod-Weinstein 28:04

Yeah. So I, your question makes me realize that there is maybe a part of a previous question that I didn't, didn't really answer, which is that and in terms of like thinking about leaving, there were multiple times when I thought that I was going to be pushed out of the field or I was actually experiencing people trying to push me out of things like I originally went to Perimeter Institute to work in quantum gravity. And in fact, the one time I visited the University of Nottingham was for a quantum gravity conference. And I'm for social reasons involving people who were racist, it became clear to me that I couldn't focus entirely on doing loops and that was actually what made me come back to cosmology as an area of interest and focus. I am... I do think it is the case that nearly every graduate student, at least all of the students I have ever talked to you have a moment where they feel like "I can't do this". "This is hard". "I don't want to be here". "The pay is garbage", right? It's actually particularly bad in Canada compared to the US like Americans think it's bad, but I took like, um like a 60% pay cut when I moved PhD programs. I started my PhD in the United States and transferred to the one in Canada and it was a 60% pay cut.

Pruthvi Mehta 29:31

Oh my God.

Dr. Chanda Prescod-Weinstein 29:34

yeah. And people were all like, yeah, but like free health care, but actually, the medical needs that I had were not covered by the Ontario health system. And so I went into debt paying for physical therapy for years. So um and also people were like, oh, but you know, um food isn't like grocery food isn't taxed but also a lot of times the food was more expensive than what I was used to paying in California where a lot of the produce was actually picked. And so like I wasn't paying for the cost of transporting it and all of these other things, right? So um, it can be really hard on you psychologically and even physically, sometimes depending on what the nature of your work is. And there is a whole conversation to be had in there about ableism and the expectations of what you can put your body through or should put your body through regardless of what you're able to tolerate. And but I will also say

that I think even if we were to resolve a lot of the issues around disabling people, and, um, you know, the feelings that the particular feelings of isolation that you have, as a black woman or as an Asian woman, um etc. My friend Monica Huerta, who's a professor at Princeton, who she does like Media Studies and Latino Americano studies, she was saying that graduate school is a psychological process, as much as it as an intellectual one. When I used to describe it to people, and I think I kind of stopped this because I feel as someone who's like more a little more senior now, it's my job not to freak people out. But I felt it was psychological warfare a lot of the time. I think a lot of that has to do with like, the isms that I was describing and the phobias and stuff. Yeah. But I think that even in the ideal scenario, part of what you're doing is convincing yourself. Like when you're doing research, you're at the boundary of what we know. And you're also when you're in academia, you're one of the people who has always been really good at school. And so you're used to knowing things and being able to work them out. And doing research challenges, everything you know about yourself intellectually. And I think that that's often like, even if you took away all of the crappy stuff, you would still have that which is like getting comfortable with not knowing and getting comfortable with being uncomfortable as the Mennonites in Waterloo used to say in church.

Pruthvi Mehta 32:11

Yeah, I think getting, getting comfortable with being uncomfortable is like literally how I'd sum it up. Yeah. Like we've talked a lot about, like how, a lot of the time, at least, at least in universities, where like, we feel like a lot of the like undergraduate and master's programs don't really prepare you for how different research is compared to like sitting in a lecture theatre and learning, um, especially with a nice in my opinion with like, the whole coding and computing aspect, which was very, like not new to me, but something I definitely wasn't prepared for. And I just think that's, it's something that really needs to be like, changed, maybe maybe including more computing, which is like, like less. weird, long derivations. I just won't need to know my experimental, particle physics PhD.

Karel Green 33:02

Six page derivations we had to do for like, courseworks. And why would I ever need those? I don't know, but I did them. we've, we've said it to each other before, like, there are days where we were just like we could literally not done our degree or master's, and then went into a PhD in like known the exact same amount, because I just don't use any of it.

Dr. Chanda Prescod-Weinstein 33:24

I think like I was actually just tweeting about this a couple of nights ago that as much as I try and describe it to people, it's very hard to describe to people what it feels like until you've actually been in it. I think you're right, that the way that undergraduate programs are structured, don't particularly prepare you for it. But also, at least for the kind of research that I do, you really do need all of these undergraduate courses.

And so it's not like they're not useful, but they are not necessarily a good psychological preparation.

Pruthvi Mehta 33:57

Yeah. Yeah, yeah. That's a good way of putting it. Yeah, like I get it obviously depends on like the field like, I mean, something I've been thinking about is how maybe some undergrad courses in physics here how this all theory, not bias but like there was at least a lack of trainings with regards to the experimental side of particle physics. Like we had like one module on radiation detectors and particle physics like particle detectors. And it's like, I don't know what CMOS chip is, I meant to be doing a PhD in experimental particle physics. Like, How did this happen? It's just yeah. I feel like that might be like a factor. I don't know.

Dr. Chanda Prescod-Weinstein 34:39

We tend to think about like places like Oxbridge and Harvard and all of these kind of like sheshe institutions is like, the way they're talked about is like, this is the cream of the crop. But I should actually tell you, at least, you know, at Harvard, I never took a class that you really covered through stats. Like it was in my introductory sequence at all, and I managed to graduate without having taken a class that really pushed me to do any proper any serious statistics in any way. And even though I did a lab course, and I actually think that I didn't, I did an astrophysics lab course, which was easier than the physics lab course. And maybe if I had taken the physics lab course, I would have gotten more statistics. And I was, I guess I'm now old enough that I was in university before people thought everyone had to learn how to code. So I graduated with like an ability to code in Fortran, because that's what my senior thesis advisor knew. But I hadn't done it in like any systematic way. And I hadn't taken a coding class or anything like that. So I agree with you. There's, there's actually, you know, the funny thing is the way that introductory physics is taught in the US is oriented towards scientists and engineers. That's what all of the textbooks are. And so they're not those classes are not taught with theorists in mind at all. And I actually think I would have done better in a class that was oriented towards theorists, because I have like, zero physical intuition, like my spouse, who is a lawyer and public health professional is definitely better with his hands than I am. Like, I'm just figuring out how to put things together. Because he's like, better intuition of like, what will happen next, if you do something in a certain way, I would have been better off in a class that started with lagrangians as a first year university student, but not everybody's like that. Right. I do think that we need to think more about like, what is a good starting point for different groups of people and how can we kind of create the opportunity to learn that way?

Pruthvi Mehta 36:47

Yeah, yeah, it's definitely it's very true. It's very true. Um, I think you may have even had mentioned this before, but um so after your PhD, I think you have mentioned how when you were applying for postdocs, you said that there were um standardized processes least or maybe like there was a place where you could

apply to and it was known about, do you think there should be more standardization in general for applying for postdocs?

Dr. Chanda Prescod-Weinstein 37:17

Like I think like one of the worst things about being on the job market, and this doesn't get better at the Faculty stage, at least in the US, anyway, is that like, every place has their own this is what we want the application to be. And it's like, completely maddening to have to do 50 like variations on the same thing, and by this, I mean, like even small things, like some places will ask for your CV and then a list of publications separately. And I'm like, why not? Just ask for a CV with a list of publications on it. Why do I need to give you another document?

Karel Green 37:51

Yeah.

Dr. Chanda Prescod-Weinstein 37:52

Why not just say this is the order in which things should be listed on your CV so you know where to go. Um another one is some places will ask you to make, to write a research statement that includes like your past and planned research. And then other places will ask you to write two separate documents. And that means that you have to think about craft twice instead of craft once. And that doesn't seem like a big deal. If you're doing like five applications although actually even for five, that's a lot. But then suddenly, if you're doing it for like, upwards of 20, or 30, it just becomes your full time job filling out these applications, but all of them sort of saying the same things. So why not just have a common application. And then you you there's no way around the fact that you have to personalize the cover letters for each institution, if you... it makes a difference. Um the cover letter, you really shouldn't say to whom it is concerned, and then send something generic to everywhere. You really should seem like you thought about the place because they're getting so many applications that that's one of the ways they can be like, "oh, this person isn't even actually excited about working with me", easy to put in the discard pile. They're looking for reasons to put you in the discard pile because they have too many applications to read. So you don't want to give them one with the cover letter. Right?

Pruthvi Mehta 39:13

Yeah. Yeah, that makes sense. Um,

Dr. Chanda Prescod-Weinstein 39:16

It's a lot of work.

Pruthvi Mehta 39:17

Yeah.

Karel Green 39:18

Oh, yes. Oh, like, especially in the UK, at least from again, from what we've heard, like, postdocs aren't even that long. Like, some are like some postdocs, which I think is very unethical are like a year long. So people that can move crazy amounts to do and then, you know, spend three months moving in somewhere, do see you know, six months of work vaguely comfortably and then have to, you know, apply for new jobs. And, yeah, I just wanted to ask, like, what are the general length of postdocs or like what, from what you've known and experienced in the States and do you think that that like impacts, especially with like these said the very tedious application process where you have to, frankly, you just have to sit down and spend time on every single one. And there's no real way to sort of, like, get out your like applications in any kind of like, mass efficient way.

Dr. Chanda Prescod-Weinstein 40:16

So I think it's fairly standard in my field that postdocs are generally at least two years.

Karel Green 40:23

That's good.

Dr. Chanda Prescod-Weinstein 40:24

I was very lucky that the three postdocs that I had, so I left the NASA postdoc after 11 months, but I could have stayed for up to three years. The third year would have had to have been funded by the lab that I was in but they were generally financially okay and probably would have given me the extension. And then the fellowship that I had at MIT and the research position that I had at University of Washington, both came with a guaranteed three years and then actually MIT added to so I ended up staying there for four and a half years I think. Um... But again, part of this was driven by the fact that they were institutions that could afford to do this. Yeah, it would be harder to find the kind of money to extend someone for two years at the University of New Hampshire, for example, although I'm I hired a postdoc who COVID... But he was supposed start with me in November. He's currently in a country that doesn't have COVID anymore, so there's no incentive for him to come here. Um he's in New Zealand right now. And so he's like, why would I go from the place with no COVID to the place with all of the COVID. I was able to guarantee him three years but that's because I negotiated for that as part of my startup money. I do generally think when your postdocs are unethical unless like there are very special circumstances like someone couldn't get a job, you have some money lying around and you can give them a little bit of breathing time this to go on the market one more time then I actually think that's like a highly ethical thing to do. But I would say hiring someone for only a year um, is generally speaking, and not very caring thing to do because it takes a while to get settled into starting research with your new group. And as we were just talking about applying for jobs is a full time job. So it's hard to get settled and beyond the job market and actually get any research done, right.

Pruthvi Mehta 42:26

Definitely. On the topic of sort of like, like unethical, sort of hiring practices in academia, what are you what are your opinions on like self funded PhDs? Um just in general, like, because in like, from what I've sort of experienced are they're sort of offered as the sort of like, you know, oh, yeah, it's the same as sort of like, you know, a funded PhD but you know, you're gonna get all the same opportunities and stuff like that, but I feel like the people I know who are doing self funded PhDs are sort of like, even like there's an extra layer of isolation because there's no, there's no funding and sometimes no contact with like, being part of like a bigger collaboration for you or something like that. So have you ever had an experience with self funded PhDs or...?

Dr. Chanda Prescod-Weinstein 43:10

So self funded PhDs are not a thing in physics in the United States?

Pruthvi Mehta 43:16

Okay. That's interesting.

Dr. Chanda Prescod-Weinstein 43:18

I mean, so I guess, let me caveat that but sometimes we have international students who come in with a fellowship from their government. But that's different from self funded, where it's just like, hey, my parents are rich, and they're paying for the PhD, or I've gone into horrendous levels of debt to pay for this PhD. That's not a thing. We won't... We won't accept someone who doesn't have a source of funding support of some kind, I guess like the other caveat, though, is that students sometimes end up going the summer without any kind of income. And so sometimes people get second jobs and then in the humanities, it's a completely different discussion where there's less funding support in general at the government level, there are no grants or very few grants. And so people end up TA-ing a lot and when there aren't TAs available, then maybe they're taking out loans and in some sense that is self funded PhD, right?

Pruthvi Mehta 44:14

Yeah.

Dr. Chanda Prescod-Weinstein 44:14

Like I'm still like emotionally not over the fact that there are fees for university in the UK now because I am old enough that actually when I went to university there were still no fees and...

Karel Green 44:30

Very jealous.

Dr. Chanda Prescod-Weinstein 44:31

I mean like I didn't go to university in the UK so I didn't benefit from it. But actually at one point, one of the discussions in my family was where I should go to high school

like whether I should stay in Los Angeles or whether I had a spot at Hampstead High School. Um and part of that discussion was about like, you know, what would be affordable for the family that if I stayed in the UK that I would have a better chance at getting an edu... a good education.

Pruthvi Mehta 44:59

Yeah.

Dr. Chanda Prescod-Weinstein 45:00

I was also treated like... So the racism when I was at primary school in London was so bad that I was again, actually really happy to go home to the US. And, and so there would have I actually made the decision that I didn't want to go to high school there because I was having such bad experiences in primary school. Um like, I guess I will just say that, like, I don't, I think education should be free. I think that it's a public good and it's a social good, and that it should be funded accordingly. I think there is some, I don't know, maybe some complication here if you just have like people wandering around being like, I want to get a PhD and I don't really want to do anything with it. I think like even that situation... Like that's better than like, I don't know... shooting people in the street and calling it public safety or like kneeling on people's necks and calling it public safety. I'd much rather they're like sitting in a classroom reading a book that I personally don't care about. And I would be happy for my tax money to pay for that rather. So I think sometimes like we think like oh, but it's wasting money, but like, I don't want my money paying for like what the police are doing to my community. So... This is me. People won't to see the video but I'm shrugging

Karel Green 46:37

Yeah. Yeah. In just... didn't ask but just so you know, in the UK, you could literally just be like, I have money, give me work to do and because every lecturer is just collapsing as far as I can tell, they'll be like, yes, please go through this data, and then they can get a PhD out of it. So you can like quite literally just buy yourself PhD in the UK. If you... if anyone's listening and wants to buy themselves a PhD do it in the UK. That just happens here and it's crazy. But yes so of course we have you on this podcast because you are a great source of information, you're very lovely but you know, what would be an interview with you without talking about like the isms that we have sort of mentioned and sort of working as a as a like you said an underrepresented minority in STEM and stuff like that. So yeah, I wanted to ask about your about your experiences doing like decolonial work and stuff like that in universities because it you... the work you've done it's been very excellent and everyone who's like even when we were starting everybody talked about you and it's just really good and we love it and stuff.

Pruthvi Mehta 47:54

Oh, yeah. Like when did you When did you get like started with the decolonial work? Or was it always just part of you and you want to do it?

Karel Green 48:01

Because I think we agree that if we decide to like, say in academia and do stuff like this, like I wouldn't want to be a scientist and not continue to try and do decolonial work as part of, you know, whatever institution I'm in, even if it is just like screaming on Twitter, which is why...

Dr. Chanda Prescod-Weinstein 48:22

I think it's great that you have that commitment. And I actually think this is a really important thing to note that I think for those of us who are from communities that have been on the receiving end of settler colonial and imperia- imperialism, right, um that sometimes becoming a scientist and staying a scientist and staying in academia requires being allowed and having the freedom to also do this work. Um so that becomes part of who we are as scientists and the scientific identities that makes doing this work liveable. And so when people talk about, like, you know, I'm like so over equity, diversity and inclusion, um so when you talk about what it means to include people, that means you have to include people's whole selves. And this is you're articulating in my mind, this is part of who I am, is that these are things that I am against and that's part of who I am as a scientist. And these are the things that I am for and that's part of who I am as a scientist. And so that means making room for Pruthvi and Karel in the field means making room for you all to articulate that and not be punished for it and to be celebrated for for the the way that it positively impacts what happens in the field. Um and and I think that the way that I kind of ended up doing this work in kind of, like a serious formal way, was partly me being like that as well, which for me, it wasn't like, as I said, I've wanted to be a particle theorist since I was 10. Also, when I was 10, I didn't had like no real understanding of what it meant to like intellectually of what it meant to experience structural racism. I had like experienced it, I had witnessed it. My mom, I remember was spit on by a Bobby on a horse once, just because he could right? And and so I had experienced it, but I didn't have like an articulation of it.

Karel Green 50:26

Yeah.

Dr. Chanda Prescod-Weinstein 50:26

And I certainly didn't have an articulation of what it was like in science. I believed all of the propaganda that science was different because it's objective. And I think like, I was really excited about particle physics in particular, because I it was my parents are activists, everybody in my family is an activist. And I think I was compelled by the idea that there was something beyond how horrible humans can be to each other and the bad things that were happening to people and I wanted to be part of something more wonderful and wondrous than bad things happening. But it's also the case that I don't live in the version of the world where you get to just do that as a black scientist even as like a light skinned. thin woman um, there are ways in which I am touched by structural racism, structural misogyny, patriarchy. And I found it was

not livable for me to stay in science unless I attended to those things. And I think part of part of my blackness is a commitment to my community. And that meant that I had to leave things better for people, than the way they were when I showed up, and that it was not an option for me to be like, I'm just going to keep my head down. I'm going to get my work done. I'm not going to worry about how bad it is for me, and I'm just going to get through the bad stuff for me and try and get to the good stuff for me and screw anybody else behind me? Right? Like I'm going to ignore emails when say someone writes to me from the UK and says, here's some data that I'm looking for. I'm just gonna like through these emails out, instead of I think it took me forever to respond to you, but I did eventually, right?

Karel Green 52:10

It wasn't that long. It was lovely, it was fine.

Dr. Chanda Prescod-Weinstein 52:13

Okay, good, I can take a really long time because I actually do get like a lot of emails like reaching out for help, assistance, support, etc. Um but I do try and respond to all of these emails at some point when I can. Um so the way that I formally got into it is basically um I got asked to give some speeches and the debate about the 30 meter telescope was happening. And I needed to better formally understand what is this conversation that we're having. And then historians of science who turned out to be really cool people found me and were like, you seem to be drawing really cool connections and started inviting me to give talks and it kind of snowballed from there that I found it Intellectual home in a way that I hadn't found in physics. And so that was actually in some ways hard. I feel much more supported and respected and cared about, and upheld by people in black studies and feminist Science, Technology and Society studies than I have on the whole by people in physics.

Pruthvi Mehta 53:21

Yeah I know, like, that... That's a really, that's a really powerful thing. Like, I've never really thought about it before, but like in terms of how, how, how comfortable I am, in terms like expressing myself my thoughts, when I'm in a sort of space and sort of activist space or like space with people especially people of colour like, you feel more comfortable talking than if I were like, just like even talking about non physics stuff with professors, I'd be like, you know, and that's something that I don't feel when I'm just talking people of colour about stuff I'm really passionate about. That's a really good point.

Karel Green 53:57

Even EDI teams in physics which are staffed exclusively by white women, as far as I can tell, are just as terrible as the rest of it. Yeah. Yeah, no, I am I definitely agree. And yeah, like you said before that I would not, if I decide to stay in academia or whatever that means I would not do it without continuing doing EDI work. I'd just be too angry to do anything else.

Dr. Chanda Prescod-Weinstein 54:25

I kind of glossed over the 30 meter telescope and the struggle of the Kanaka Maoli um Native Hawaiian people around 30 meter telescope. But I think it's important to point out that I think a lot of people in the astronomy community thought I was just being a big pain in the butt and getting on some kind of like moral high horse about I'm supporting people who oppose the verdict building the 30 meter telescope under kind of the political conditions that it's currently happening. Um and this was another way of not seeing someone's identity, which is that my mother's from Barbados, and my dad, he's white, but he primarily grew up in Trinidad, and then in Brixton, in London. So he grew up in black Caribbean communities.

Um I'm an island person, even though I was born in Los Angeles, and I looked at what was happening there and I thought, if this was my island, what would I want? If this was my island, I would want people to stand with me. So who am I to not stand with other island people as they challenged colonialism? And so for me, this was about opposing the forces that have done such enormous damage to my own family, in the places where I see them at work. And to ask me not to do that was to ask me to not be me and to not support my family and not speak against the forces that have harmed my family. And so again, I just want to say like this is about if you're gonna welcome people like us into the sciences, if you take that seriously, then that means you have to take on the challenge of our political positionality. And why we speak differently on some of these issues than people who traditionally been welcomed in the field. And that that means that the way things are done has to change. And that colonialism has to stop being one of our scientific tools.

Karel Green 56:34

Hmm. Yeah. I cannot express how many times people have like asked me to stop politicizing science and things like that and...

Dr. Chanda Prescod-Weinstein 56:47

You know, it would be okay to not feel fine about it too. Right. I just like... Like that would be a reasonable reaction. Whether it's like whether it gets you through the day is another thing but to not feel fine about it... I would say like the one time I really thought like I am just quitting because screw these people was the month, the height of the debate about the 30 meter telescope in 2015, when like emails were flying around about like Angry hordes of natives and these people who run diversity programs, were saying things like, these people just don't know what's good for them. And I was like, oh, guess what, being in the astrophysics community is then screw this... That was maybe I really had to kind of sit back and be like, what am I doing here? And how am I going to stay?

Karel Green 57:36

Hmmm

Pruthvi Mehta 57:36

Yeah.

Dr. Chanda Prescod-Weinstein 57:37

I was not okay. So I'll just say I was like not okay.

Karel Green 57:41

I am I personally am glad that you decided to stay because you really are an excellent scientist.

Pruthvi Mehta 57:55

And that's about it for a guest episode with Dr. Chanda Prescod-Weinstein. Be sure to follow her on Twitter @IBJIYONGI. That's at IBJIYONGI. And check out her upcoming book *The Disordered Cosmos*. The POCSquared podcast was written, recorded, edited and posted by the POCSquared team. It will always be available for free in some form. If you wish to support us, please consider becoming a Patron at Patreon. Patrons get special perks like having a shout out at the end of the podcast or getting episodes weekly. There are other perks and these can be found on our website www.poc2.co.uk. That's www.POCtheNumberTwo.co.uk. Please share the podcast and tweet about it and email us. Our intro and outro music is called Blippy Trance by Kevin Macleod. Find it at incompetech.com licensed CC by creativecommons.org Thanks for listening.

Dr. Chanda Prescod-Weinstein 58:54

If you do want to ask me the other question, I do have a few minutes so you should... but I'm not gonna make you

Karel Green 59:00

Oh, okay, well yeah, this has nothing to do with anything that we've said today... So yeah you know we're going from this really, actual good and um you know I'm cutting this out. Nobody can know. It's a really good, profound ending and now I'm just going to ruin it because that's what I like to do. But yeah, and it also you don't have to answer because I don't know anything about this, but like we've been speaking about this for ages but like, I must know the origin of your Twitter handle.

Dr. Chanda Prescod-Weinstein 59:27

Oh, I hope you do include this. So my favorite like sort of contemporary KPop star is a guy named G Dragon and he's in a group called Big Bang. Total coincidence. Total coincidence. So, his given name is Ji-yong, which means dragon.

Karel Green 59:52

Oh nice.

Dr. Chanda Prescod-Weinstein 59:53

And so Ji Yong, G-Dragon and his Twitter handle is IBG um basically pronounced is pronounced IBGDragon. So IBJIYONGI is like a diminutive like in Spanish I to you add it to say like um like as a term of affection so IBJIYONGI. I definitely I think that like if I was a Kpop Star, I would be G-Dragon. I really want to be G-Dragon one day like so badly. The only like the only thing that makes me actually want to be famous is like that maybe one day G-Dragon would know who I was I want to talk to me

Pruthvi Mehta 1:00:37
Let's set it up, let's do it.

Karel Green 1:00:39
Like we're working towards it now.

Dr. Chanda Prescod-Weinstein 1:00:41
I should say like, like, unfortunately like his group has been like sort of subject to controversy because one of the members of the group turned out to be like involved in some really like bad stuff that was like harming women. Yeah, um. So as far as I know, um G-Dragon wasn't involved in any of that stuff. And actually he was doing his military service when all of all of it went down, um so we'll see what happens to the group now that they're all done with their military service. But yeah, um, I'm a first generation Kpop listener. I've been listening since like I had a poster of a member of H.O.T. my bedroom door when I was in high school back in like 1988. I'm an old school kpop fan. Like I was so interested by H.O.T.

Karel Green 1:01:29
What has happened in the last five years is like Kpop stans has been gained so much power when the internet.

Pruthvi Mehta 1:01:36
They're dictating everything.

Dr. Chanda Prescod-Weinstein 1:01:39
Stan culture is I mean, like I actually don't talk about Kpop a lot anymore because I find Stan culture to be kind of terrifying. And so I actually I used to tweet about it, but like, it's Stan culture is very scary. Anyway, we could have like another podcast about stan culture.

We're gonna have a Kpop episode one day.

You have to have me on if you do that.

Pruthvi Mehta 1:02:05
We're gonna have our own fancams like...

Dr. Chanda Prescod-Weinstein 1:02:10

I actually have fancam stuff from like Big Bang concerts. In Japan and New Jersey. I went to a concert in Tokyo and I've also been to a couple in New Jersey. So

Karel Green 1:02:30

I will tell you, I was not expecting that, when you said, like when you started explaining where it came from. So that was really cool. So yes, ok.

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