

## TW for “How to get a paying job in STEM- Dr. H. Crogman”:

**Racism**

**Exclusion in academia**

**Racist microaggressions**

Pruthvi Mehta 0:00

Hello and 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 colour 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. Horace Crogman, assistant professor of physics at California State University, Dominguez Hills. His research is on theoretical physics, biophysics, and atomic molecular and optical physics. Please be aware that the episode will contain discussion about racism and exclusion in academia and racist microaggressions. As usual transcripts and show notes for this and all episodes can be found on our website [www.pocsquared.co.uk](http://www.pocsquared.co.uk), That's [www dot POC and the number two.co.uk](http://www.pocandthenword.com) and if you have any comments or questions we can be found on Twitter and Instagram at POCsquared. That is POC and then the word squared no spaces. You can also contact us via email [POCsquared@gmail.com](mailto:POCsquared@gmail.com). That's POC and the word squared@gmail.com. With all that said, we hope you enjoy the episode.

Karel Green 1:09

So if you wouldn't mind just introducing yourself to everybody who's listening.

Dr. Horace Crogman 1:13

My name is Horace Crogman. I'm an assistant professor at California State University, Dominguez Hills

Karel Green 1:21

And what do you research?

Dr. Horace Crogman 1:23

So, I was trained in molecular, high resolution molecular spectroscopy. And I focus more on looking on the high excited state of tetrahedral molecules. But in my current job, I am doing biophysical research. Where we basic... We do optical trapping and looking, working with cancer cells.

Pruthvi Mehta 1:54

Nice, that's really cool.

Karel Green 1:55

Yeah. Such a big range of different types, as well.

Pruthvi Mehta 2:01

There is a lot of overlap. So just out of curiosity, so your PhD did you do at the same place, or did you do it elsewhere?

Dr. Horace Crogman 2:10

I did my PhD at the University of Arkansas. That's in the Midwest of United States. And then I did a postdoc... doctorate work in Dijon, France that's in Europe.

Pruthvi Mehta 2:24

Oh, nice.

Karel Green 2:25

Yeah...

Pruthvi Mehta 2:25

That's a lot of... That's a lot of traveling round. That's really cool.

Karel Green 2:28

So one thing we really are interested in was finding out about how, when you finished your PhD and moved into the postdoc, did you feel that your PhD had given you like adequate skills to be a postdoctoral researcher? Because we found a lot from finishing a degree into going into a PhD, a lot of people find that gap quite a struggle to get used to doing PhD work, and we wanted to see if the same is true when you go to higher levels of academia.

Dr. Horace Crogman 3:02

I don't think there was much of a gap going from PhD into a postdoctoral work. I'm one I'm of the belief that when one do a PhD, it is not so much what you do the PhD in that matter matters. But it is the skill that you gain the ability in order to investigate a problem and finding the right tools that will help. And I think if that's what you take away from your PhD work, then you can go into other fields and work remarkably well. I also do research in educational research, educational research, which is new for me and I started this in 2015 and have already published over 8, 8 publication in the field. So I do think that you when you learn... when you actually go through the tedious work of getting your PhD, you're actually developing a set of skill that can be applicable not only in postdoc, but in industry, in government or in academia.

Pruthvi Mehta 4:18

So your educational research what is that comprised of?

Karel Green 4:23

Yeah, cuz that's really interesting because again, like your educational research is...

Dr. Horace Crogman 4:28

So I'm more interested in how human beings learn, at least from an educational point of view. So, one of the things I looked at a lot is curiosity. And by the question is

how do you engage the human brain that it could become critical thinking? The thing I focus on is question asking and I go back from the point view of a child, a child learn and explore the environment to question. So the goal is to create what I call multi sensory sensory stimuli, which is a wow factor that will cause people to mind the brain to engage and draw out the curiosity. And when that happen, the human tends to ask a lot more questions. So we try to start students for one with the basic questions. So, in this model, no question is ever condemned, all questions are accepted. And because we look at question as being the key to unlock the brain to unlock confusion within the brain. And then we are applying this model also to a dyslexic brain and wonder if that through question asking if we could, if we could develop a way to engage the brain that it will become interested and then the reading difficulty that is experienced in dyslexia would then not become such a hurdle for an individual.

Karel Green 6:26

There is a lot there and it's very interesting.

Pruthvi Mehta 6:29

Um, so like you mentioned, I think one really good point that you brought up is that there's like no such thing as like a stupid question as being a really important factor in like getting people interested in getting people motivated to learn. I think that's really important because the least in my in my least my, the way I felt in academia, especially recently like I'm just a second year PhD student, but a lot of the time, a lot of PhD students seem like a little reticent to the To like shy to ask questions, especially in conferences, and in like sort of big meetings and presentations with like professors, they're often like across a whole bunch of different universities. How would you sort of having sort of felt that there's a sort of presence in academia where there's a little bit of a little bit of a sort of intimidatory sort of feel for like younger students, like anything there that could like possibly, like prevent them from asking a question or maybe being a bit shy to like ask something like a big conference?

Dr. Horace Crogman 7:40

I don't necessarily think it's shyness because I have not I have not met a shy toddler.

Karel Green 7:48

Oh!

Dr. Horace Crogman 7:49

They're just very inquisitive.

Karel Green 7:52

Yeah.

Dr. Horace Crogman 7:52

The problem is, is what society has done to us. And as we go into to adolescence and adulthood, we have been made ashamed to ask question. We have developed an educational system about right answers, and not necessarily about the journey of exploration. So a lot of times we have this idea about intelligent IQ and all these things and it is a tendency, when I'm sitting in the presence of a person who is a PhD, who have published, who have written a book, to have this sort of moment of that... I have to be careful of the question I asked, I can't ask a stupid question. I am afraid that the question would be so beneath the person so then and therefore I think it's better to close my mouth. Now what I tell student is simply this, if you find a human being that is not stupid, I'll give you beachfront land in Kansas. And as you know, Kansas has no beaches. The idea is that we all learn from our stupidity. So you know, all human beings are stupid. And in that case, I said, I'm the most I am, I am at the highest level of my stupidity. It is always trying to engage the student that they be calm and create a zone that they become comfortable to ask even the most basic question and never shut down a question. When a student walks into that environment. You see, you see all the question that that that comes from the student is just because we have created a system that does that.

Pruthvi Mehta 9:53

Definitely that's really beautifully put. I also feel that way in the way of the hierarchy going academia, there's a sort of toxicity where people are more afraid of looking stupid and in doing so, hamper the research that's done. And I think I think you put it absolutely wonderfully that we all we all learning that is the whole point of being a researcher. That is the whole point of being in academia. I think that was absolutely beautifully put.

Karel Green 10:20

Yes. So I am wanted to ask a bit more before I before I forget about because you I'm just really interested because you mentioned how you did like a postdoc in France, which is so far away from the States and going from like, so going from finishing a PhD in the States and then deciding to do a postdoc in France like what was that like? Was it a very different or was the the work the same, but like in a different country, I guess. And yeah, like, how did that come about as well? How did you decide to move so far? To do work?

Dr. Horace Crogman 11:01

Well, I think it comes about from the fact of my advisor, my advisor, encouraged encouraged me to participate in many different conferences. And it is true networking at the conferences at a at one of these conferences that I met someone from Europe and they were interested in the type of things that I was presenting. So I think having the opportunity to go to a conference first. First of all, even so, if you do not have a research, if you can go to a conference, it's a, it's a good start and basically meet people network, bounce ideas off of different people, and then go back to your lab and come up with something to present at a conference and then people would be exposed to you as a presenter and also as a person that that is

friendly and interesting to talk to. And I think the more questions you ask people, show that you're interested in what they do, they will also have a similar type of response to you and that's how those dialogues begin from moving from the United States to to Europe was not much of a problem for me because I was always moving I originally was born in the islands and, and we traveled back and forth to the United States, even though I have family members that were born here. So I was always traveling. I think, for me, the biggest hurdle in moving to funds was to try to learn the language. That's the greatest hurdle but inside the lab itself, everybody spoke English. So, in terms of doing work and communicating, it was that was very easy, but it was going out into the culture there is where I face the most difficulty and dealing a lot with the French bureaucracy was a problem for me. But erm in the lab itself it was an amazing place to be. And I and I also had the opportunity to travel all over Europe. I have even been into England and so forth. So I like the place.

Karel Green 13:35

Nice, yeah, did you find England? Yeah.

Dr. Horace Crogman 13:41

My my my impression of England it's that it's it's cold. However, the few times have been there, I did not see the sun.

Karel Green 13:58

Wow. Yes. That's pretty much it.

Pruthvi Mehta 14:03

on the hair and it's been warm for like the last couple of days it started hailstoning randomly this morning. What on Earth is that, it's June. It's literally June. Why is it hailstoning.

Karel Green 14:15

It's so messy here.

Pruthvi Mehta 14:21

Yeah. Yeah, we'd like to apologize this country's weather and the lack of vitamin D.

Karel Green 14:25

Yes. I can see why a lot of people go to the rest of Europe and not England.

Pruthvi Mehta 14:36

So you mentioned bureaucracy being sort of a problem. In what in what kind of way was it sort of a problem?

Dr. Horace Crogman 14:43

Well, so one of the thing that for me, because the first problem I have is when I just moved to France, I was supposed to get a stamp in my passport. And some instruction to go to the, to the to the prefecture office in order to get a carte de sejour and I did not know that and my boss did not know that. So I was leaving for a conference and I was told I, is either I stay in France and get the carte de sejour. Or if I leave France, I would have to do all the paperwork all over again.

Karel Green 15:30

Oh no.

Dr. Horace Crogman 15:31

And that caused me to stay outside of France for an extra two months trying to get back in because I couldn't miss the conference. And it's like I remember in the, when I when I had finished my postdoc my boss wanted to keep me a little bit longer and there was a situation where you had to show that you have certain amount of money in the bank in order to stay, and you have a address and the university's support. And I showed I had like four times the amount of money. And one lady made a decision and gave me 24 hours to leave the country.

Karel Green 16:25

Oh...

Dr. Horace Crogman 16:26

And I had to go to the mayor. And the mayor tried to step in and the lady told them this is not not his business. And then the mayor sent me back to the prefecture and then I spoke to someone else, and they could not believe and believe the foolishness that I went through and then they took it to the person in charge and they stamp it and say you can stay here as long as you want. But that was a lot of headache for...

Karel Green 16:59

That's that's like, Well, obviously it is terrible that you had to go through that. But that is, like I'm so thank you... thankful you told us because that's something that I hadn't even thought about. Because, you know, you just assumed that when you get a postdoc that they would have had, you know, people from wherever, whatever country you are coming from before and will have like streamlined the process, so you'd be able to work for them, because that's what they want you to do. But now knowing that that's not always the case, it's good to know to like, make sure that like whichever lab you're going to or wherever it may be, or whichever research group, there we go that's what I was looking for, actually knows the ins and outs of international travel and stuff like that, leaving you I guess, to do all that work on your own to, before even doing your actual job.

Pruthvi Mehta 17:51

Yeah, that must have been super hard. Like... We've got sort of another question related to postdocs, which is the sort of, instability involved in a postdoc. The idea that it's so short term in terms of the contract, it's not massively stable. Do you have any thoughts on that? Like, would you like postdocs to be longer or are you okay with them as they are?

Dr. Horace Crogman 18:15

I think a postdoc should be two years really no more. Because I think postdoc for me is where you basically is for the first time is honing in on in your skills. So then and therefore and it is a good time to even switch over into a new area. So I don't necessarily want a drawn out postdoc because at that point, you're still not really doing... a lot of postdoc may not give you the opportunity to do the things you really want to do. You're still doing someone else's work and it's good too do that for short term. And... but on the long term, you're supposed to be thinking about your interests, what type of contribution you would like to, to make, and I think a postdoc does gives you the opportunity to set the foundation to do that. But I don't think you should want to be long term. I think what you want to do is to have a postdoc no more than two I would suggest and then from there, you want to go into a long term career.

Pruthvi Mehta 19:37

Okay, that's quite... Yeah, that's quite interesting.

Karel Green 19:39

Yes... That is yeah, cuz I think that's the first time I've heard I've heard quite a few people who do like the travel of a post doc, but I think that makes a lot more sense because it is so transitional period.

Pruthvi Mehta 19:57

Yeah, yeah. Um, Do you like when you were deciding on what you wanted to do after your PhD did you always know you wanted to be a postdoc? Or did you consider a career in industry or elsewhere?

Dr. Horace Crogman 20:14

I actually didn't consider anything. For me, it was, for me it was whatever opportunity that comes, I will step into. I thought there was an opportunity, someone that was working in the military, and they were, basically showing interest in recruiting me where you do research there and while I was talking to those people, then I had this opportunity. I thought about that. I knew I wanted to be in academia. So if I could have gone straight to academia I would have done that. So I didn't, I didn't really have a, a particular strict career path. It was just for me that whatever door open, I will step through.

Pruthvi Mehta 21:13

It's a good way of approaching it.

Karel Green 21:14

Yeah exactly. Instead of getting too stressed about what you're going to do, I think that's a good attitude to have. One last question I wanted to ask, unless Pruthvi has anything else, is that just generally if you had, like a third year PhD student, like you might do, I don't know. But if you had a third year PhD student, or if you were like, looking back at yourself when you are at the end of your third year, and you're thinking, Oh, like, Is there any advice you would give to a PhD student when looking for like, a job in STEM so like, perhaps to stay in academia or not like, things that you'd say that you should do during your PhD or even things that you say you shouldn't do?

Dr. Horace Crogman 21:55

I think advice... We have to understand when it comes to STEM, there are two worlds. There's the world of for those who were born in privilege, and there is the world of those who comes from minority background.

Karel Green 22:13

Yeah.

Dr. Horace Crogman 22:13

The advice can't be the same. Because, um, as you know, as you look on the face of academia, the face of academia is basically reflective of the white majority in the Western nations. And, and in America particularly, is Asians and whites. And you see very little, little impact of minorities in academia. So, the the point is, it's easy to guide a white person or Asian person and give advice about networking and all that, all these things that are important, but when it comes to the the African, giving African American or Hispanic advice, it's a lot more difficult because no matter how good you are, you you'll still find that you're not good enough. And you will know that as you look around your community that you don't see much of any representation of you in in STEM. So the advice I would give such a person, that it's going to be difficult, but you just you, you need not to give up. You have to push forward, you have to take every opportunity that comes. You also have to work twice as hard as everybody else. If you really want this because if you don't have that type of courage you will give up and not to and do not compete, live in competition with others, you have to run your way race, because the field is already stacked against you. And you and it's gonna take also luck because uh, one of the thing that is, it's easy for me as a minority to get my PhD. That was not a problem. But when you... it was easy for me to even at least from my experience for me to go into a postdoc, where I had difficulties when I came from France, I thought I was going to have a job in any and every place from the lab I was coming from. That was not the case. I ended up had to work many years in part time position before I actually had a full time position. And I thought I would be very easy to hire because they were not a lot of people in academia that looked like me. And I thought a lot of

university would snatch me up in order to become more diverse. But that was not the case.

Karel Green 25:18  
Mmmm.

Pruthvi Mehta 25:19  
Hmm. Yep.

Karel Green 25:21  
Basically, that was really lovely. And that really, like struck a chord. We, we wrote these questions, trying to not put any of our biases in there and to let the interviewee say what they said, and which I'm just really happy that you brought that up, because it's the truth.

Pruthvi Mehta 25:39  
Yeah.

Karel Green 25:40  
And it's just it's nice to know that you're not going crazy and that like other people have had the same issues. So I just wanted to thank you very much for that. That was really, really lovely answer.

Pruthvi Mehta 25:51  
Yeah, I think I think it is, you know, very, like it's sometimes you do sort of like think about, you know, I'm going to be the only you know, person of color or, you know, minority person in this department and therefore they'll definitely snap me up when in reality you've got to think about the whole, you know, systemic racism in built into that department. And then remember, they might not do that, in fact, yeah, it's it's not something that you should like always like, yeah, keep keep in, in your mind because you know, the odds, like you said are stacked against you from the get go. And yeah that is something that has to be fought against. Do you have any sort of suggestions on how the system could be improved to be more accommodating to minority students?

Karel Green 26:40  
Yeah. If you have like infinite time, money in power,

Pruthvi Mehta 26:44  
Yes.

Karel Green 26:44  
If there's anything you'd change?

Dr. Horace Crogman 26:47

If I have all the power in the world and the money I would destroy the system and rebuild it.

Pruthvi Mehta 26:55

I love it.

Karel Green 26:56

This is great.

Dr. Horace Crogman 27:01

Because the problem is not just for I'm, I'm a male, and I'm African American, but not only do I have problem women also have problem in this society. In academia, you see that woman get most of the stem degrees, but they're not hired as much as the male counterpart. So the system really need fixing. And we need to have a system where we value everybody's humanity.

Pruthvi Mehta 27:37

Yeah.

Dr. Horace Crogman 27:38

And all this basically start from from birth where you have, let's say, you have a boy and a girl. Why do you give the girl a doll and the boy a car? Right there, you're creating a distinction that's going to impact them for the rest of their life. You're sending a message. And so what research have shown us that kids see no difference with each other. What is true, what parenting and school has done that different comes out. So you have girls start believing that they're not good at science and boys are believing they're better at science. And we all know this is foolishness. We allow it by the tools we give them from the very get go we're basically telling a girl from the very beginning that all you're good for is having children. And we are telling a boy Oh you can change the world and those type of things is unfair. We see the study when they that was done in the 60s and repeated 2012, where they give dolls to to black kids and the black kids thought the white doll was always beautiful, right? Yeah, why these things happen, because racism is not something that we are born with, it is learned. So it's a society that create that. And it is time that we break that society. And sometimes a lot of times in academics, we do not understand that it is much better and even in STEM to have representation of everyone in there. So, I don't see a way forward unless we don't revamp the system. I have hope. Like for instance, I'm looking now on the news. And I'm looking and seeing the the protests and protests here is beautiful, because it is not just blacks that are protesting. It is... It is young people of all shade and they're saying we want a new America, we want a different America. And I think that's a beautiful thing. And I think that gives me hope in the future. So then maybe through them a new, a new system, would arrive. But today is just that the system, their systematic racism that continue to happen and I'm one who does not necessarily call individual racists, but I think the system allow people to behave a certain way and the system then

differentiate between colors because like I said once that, you know, the problem is not so much what the cops did, but is how the system responds. Because the system did not say, well if you do certain thing, here is the punishment Because if there were a fear of punishment, I think cops wouldn't behave the way they behave.

Karel Green 31:08

Yeah.

Dr. Horace Crogman 31:08

And it's because the the system make this distinction because we see when an African American cop commits something, how strongly the system comes down. So you see these behavior are very unlikely in African American cops, we asked in other cops, you see it, because the system gives them a lead way. And I think we have to create a system where everyone is treated fair and only when that happen, we can have a place where we can say that discrimination is not in it by race and all these things. And the only discrimination we'll have is by those who have actually done the work. And now I'm looking at your your merit, your criteria and sat and then finding the best fit for the job.

Pruthvi Mehta 32:08

And that was it for our guest episode with Dr. Horace Crogman. 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 on Patreon. Patrons get special perks like having a shout out at the end of the podcast by me or getting episodes a week early. There are other perks and these can be found on our website [www.poc2.co.uk](http://www.poc2.co.uk). That's [www dot POC the number two.co.uk](http://www.poc2.co.uk). Please share the podcast, tweet and email us. Our intro and outro music is called Kevin Macleod you can find it on [incompetech.com](http://incompetech.com) licensed CC BY [creativecommons.org](http://creativecommons.org). Thanks for listening