[Music by Molly Joyce 00:00:00 – 00:00:15]

Bonnie: Welcome to *Included: The Disability Equity Podcast*, brought to you by the Johns Hopkins University Disability Health Research Center. This podcast challenges stereotypes of disability by sharing stories, data, and news. Each season digs deep into topics offering multiple perspectives and will expand your view of disability. We are your hosts. I'm Bonnielin Swenor, director of the Johns Hopkins Disability Health Research Center.

Nick: I'm Nick Reed, assistant professor at Johns Hopkins University Bloomberg School of Public Health. On this episode of *Included*, we are talking with Miché Aaron, a PhD student in the Department of Earth and Planetary Sciences at Johns Hopkins University about her grassroots efforts to diversify science. Her research focuses on carbon-bearing materials on Mars using remote spectroscopy and uses Martian spectroscopic data to analyze the surface of Mars. Miché is a fierce advocate for diversity in STEM. In 2019, she created a list of resources to support students of color in STEM, including information about fellowships, scholarships, internships, and mentoring opportunities. She also supports diversity in STEM by serving as a member and contributor for the Women+ of Color Project, which provides an open platform for women of color to communicate about best practices for applying to graduate school, surviving graduate school, maintaining research productivity, and growing their academic careers.

[Music 00:01:49 – 00:01:56]

Miché, thank you so much for making time to be our guest.

Miché: Absolutely, thank you so much for inviting me.

Bonnie: Miché, we are very excited to be talking with you today, a fellow Blue Jay and member of the Johns Hopkins community. We'd love to start by asking you to talk a little bit more about your research, and share with our audience.

Miché: Absolutely. It was mentioned that I study carbon minerals on Mars, but not just carbon ones too, carbon-bearing minerals, I also study sulfur-bearing minerals on Mars too. More specifically, within Martian craters. When you think of Mars geologically, you have to look at the geological time scale, which is broken up into three eras: the Noachian, Hesperian, and Amazonian. There's one before called the pre-Noachian, but I'm just gonna break it up into three. In the Noachian Era, we typically see a lot of minerals that are mostly related to water, so they form as secondary minerals through water. We call these clays. They can be considered as phyllosilicates, carbonates, a lot of those different types of minerals. That's where we typically see those types of minerals. This is because during that era it was more of an aqueous environment, it had the conditions for liquid water to survive on the surface. Then, as we move into the next era, the Hesperian, that's where we start seeing this particular minerals called sulfates and they have, as the name states, sulfur in them. The sulfur typically comes from a lot of volcanic activity, some vulcanism, and moreover, this typical environment is very acidic. The acidity does matter for rocks because there are certain minerals, like carbonates, that can't really survive in very acidic environments, so if there were like large amounts of carbonates on Mars, the Hesperian Era is where you would most likely see their depletion as the acidic environment starts to roll in, but still pretty aqueous of an environment.

Then the next era is the Amazonian, and this is where we start seeing more of our iron oxides, so why is Mars red? There you go, it's the ferric oxide environment, so that's just basically rust because it's iron and oxygen. Now that you know the geologic time scale, what I'm studying, or our research is, these sulfur-bearing minerals, these sulfates that are in Martian craters. Well, why should we care? Well, remember when I mentioned the geologic time scale, we see sulfates in the Hesperian Era, we know which areas of Mars are considered Hesperian geological units from the lack of many craters. This goes back to how our solar system formed, we had this event called the Late Heavy Bombardment Period, where we were seeing an influx of the leftovers from when our solar system was forming, and we basically have a free-for-all. There's a lot of—it's like a water balloon fight, except there's giant rocks and we were left with giant holes. Basically that event is how we are able to determine the age of a surface. With Mercury and with Mars, well, yeah, Mercury, Mars, and also, with the Moon, we see a lot of craters.

We know that these areas with a lot of craters are the oldest regions, but whenever we look at Mars we see that there's some regions that are heavily cratered and then we see some areas that have even smaller craters and there's not that many. We also see other geologic features too, so anything that looks like the remnants of volcanic activity, and of course, volcanos, they fill in these holes, these craters, and so we know that this typically happened in Hesperian as well as the bits of the Amazonian Era, so we are able to determine the age of the surface. The fact that we're seeing these sulfates in these craters is—it’s a bit weird. It’s like how did these sulfates get here? It’s not that it’s weird to find sulfates in Noachian crust, but we know based on the law of superposition that older things are on the bottom and younger things are on top. When we look at Noachian geologic units and we see minerals that are more associated to the time afterwards we have to make sure that it’s not there because it came after. Even more so, we need to understand what this means with regards to the mixture of the Martian crust. We’re still trying to figure out the heterogeneity. It’s like, think about it like a parfait, so is it just layered with the nice, delicious of strawberries and then your nice layer of yogurt and then granola? Or did you put all the things together and took your spoon and mix it all up? This is basically the gist of my research.

Nick: I really appreciate that parfait analogy. That really helped me. We were totally gonna call you out, by the way, on only talking about three eras instead of four. I mean, 'cause Bonnie and I clearly know so much about this, kidding.

Miché: Yeah, I know, no, that’s fine, I'm just thinking back to when I was just like talking about it to someone who knew about it and they’re like, well, what about the pre-Noachian? I'm like, okay, we can, but it’s still the same stuff.

Nick: That was phenomenal.

Bonnie: I do wanna say, Miché, that is really interesting. You’re essentially trying to figure out how old Mars is?

Miché: Not necessarily. There’s a geologic era where we would find a particular mineral, but we’re seeing that it’s in the previous era that it shouldn’t be in.

Bonnie: You’re trying to understand why that is? Is that right?

Miché: Yes, yeah. You’re supposed to be in the era after the one that you’re currently in geologically. How did you get in this crater before you were supposed to have formed?

Bonnie: Can I ask a follow-up question? Sorry, I know this isn’t the main focus of our conversation, I'm interesting, how do you get this material to study, from Mars? Do you have samples? This may be a really naïve question.

Miché: Oh my goodness. I wish I had samples.

Bonnie:	How do you do this work?
Miché:	That would make my whole world.
Bonnie:	That's probably the most naïve question you've ever had, but, yeah, I'm so curious.
Miché:	No, no, no, it's not naïve. It's not, not, not, not, not. It's. not like this is a part of anyone's core curriculum in like, elementary or middle or high school. I didn't get introduced to this method till I was in college, like undergrad. I use remote sensing and remote sensing is just the study of certain regions from far away, so, remotely. This is typically done through satellite imagery, and you might be familiar with it if you've used—is Google Earth still around? I'm sorry, I don't use that anymore. I remember it used to be the big thing when I was in high school. Like Google Earth is a good example of remote sensing. Even though we're not really—like, we're using some type of radiation just to see something, so we're using the visible light, so that's how we're able to see the ground. Or we can use rovers, so remote sensing is just studying things from afar using various instruments to study various things, could be like vegetation. It would be geology, like what I do. Another thing that uses remote sensing is like the military, so the military would oftentimes utilize remote sensing to study different regions, of course that explains why a lot of information from the military is considered classified because some of these cameras that they use for remote sensing are really, really, really, really, really, really high resolution and basically, exposes a lot of information. Remote sensing is a very invaluable tool for planetary sciences because we actually can't really go to Mars or Mercury or even Venus, but we can still study it from afar, and if we understanding or identify what exactly we want to study based on Earth geology or Earth atmospheric science, then we can apply these methods that we do for Earth to our instruments to study other planets geology, interior, or even the atmosphere. Which is basically the premise of planetary science.
Bonnie:	Thank you.
Miché:	Sorry, I *[crosstalk 00:10:37]*
Nick:	That's awesome.

Bonnie: Thank you. No, no, I know, I know, I know that's not our main conversation, but I was genuinely curious.

Miché: One other thing I forgot to mention with regards to that. Within remote sensing, I specifically study spectroscopy, which is the study of how light interacts with matter, that's how I'm able to study all of these rocks using remote sensing. I could talk about that all day long 'cause spectroscopy is amazing no matter what wavelength that you're looking at.

Nick: That's awesome. It's so clear that you have a lot of passion for this, you're also explaining it at a level, I don't—I mean, you're doing a really good job of making this understandable for Bonnie and I 'cause we have no idea what you're talking about.

Miché: It's, yeah, I actually do this pretty often. I have plenty of practice 'cause on the weekends I actually teach a space class to like, little kids, like second grade to eighth grade. Since there's a huge age gap there, I try to keep it as fundamental as possible, and if I have to use a slightly high level word, I try to make sure that I get the definition right because that's all a part of sci-con, we have to make sure that your audience can understand. It's not like I'm trying to show you that I'm smart, I'm trying to make sure that you understand and that you can be as smart and be happy and excited, like I am, 'cause there's no sense in me just speaking jargon.

Nick: Well said, I love it. I wanna shift a little bit from the focus of your work to some of the things you've done through your work. I'd like you to tell us more, if you can, what was your motivation behind all of the effort and work you put into increasing inclusion of people of color, specifically women of color, in STEM?

Miché: That's a very good question. My motivation behind wanting to increase more women of color in STEM, by women of color more underrepresented racial minority women of color, was the lack of numbers. It may seem like well, why is that a big deal? Well, representation is key. Like, growing up as a kid, I, honestly I didn't even know about Mae Jemison for a while, even when I was going to Space Camp every summer as a kid, like, I still wasn't introduced to her existence, which would have been great because me wanting to be an astronomer, at the time, I was really excited and wanted to do it, but then, would have these various moments of pushback by my peers or by teachers or professors or anybody else that felt that they needed to give me an opinion about, like if they think I should do this or not, and quite frankly, I was too bigheaded to listen to them. That's not gonna be the case for everybody. I know there's this huge push for there to be more underrepresented racial minority women in STEM, but that's kind of not really—it's great, it's great, but it's that we need more, we need to keep them there. Keep us there, and it's kind of like pouring water into a very leaky bucket, the bucket's leaking because people keep drilling holes because they don't want the bucket full. Moreover, STEM is just inherently male-dominated and because of that fact alone, a lot of problems arise from URMs in STEM. One of them, like one of many of them, our expertise being taken seriously. For some reason, like I know this happens with women too, but it happens even more so with underrepresented racial minority women in STEM.

There's less forgiveness for fallacies, like mistakes do happen, especially while you're a student. You're learning how to be a scientist, you're learning how to be more effective, but make a small mistake, there's so much grief over it. There's no forgiveness, but our white male colleagues, it's pushed aside, water off a ducks back. Being talked over in meetings, it's aggravating just being able to get a word out showing that you know something, which is kind of weird because we don't, like, they don't take us seriously and yet, they don't give us the opportunity to prove that we should be taken seriously. Or, even better yet, intentionally not, quote/unquote, being heard in meetings, it's like you'll say an idea of something that could be—like that will contribute to what we're working on, no one cares, and no one comments, but then you have another colleague say the same exact thing and it's praised. You know that you said the exact same thing, or even worse, unnecessary gate keeping. Just constant goal posting moving. This happens so often for underrepresented racial minority women in STEM. Again, happens with women, but it happens even more so with underrepresented racial minority women in STEM. That's actually one of the main reasons why we have the Women of Color Project. We started itback in 2019, it was our first workshop, and our workshop is devoted towards helping underrepresented racial minority women in STEM who are undergrads or post-baccalaureate, so they're like in-between, they wanna get into grad school.

They don't know a lot of the things that are necessary for you to succeed in grad school. Matter of fact, when I got into grad school, there were a lot of things that I was lacking too. Like, for example, how to write a scientific paper, they kind of expect you to know how to do that coming in, but it's weird that they expect everyone to come from the same university. It's odd. Like, they think everyone's learning the same thing and then, when they get into their PhD program, they're confused as to why we don't know it, but then they use that as a way to add more gatekeeping. Again, there are a lot of things that are necessary that we need to within STEM to lessen these things. It's adding more underrepresented minority women staff members, like professors, people who can be the representation. People who can speak up for these students and there's a lot of need for that internally, but, on the student side, there are a lot of things that we can get prepared for, how to write scientific papers, how to do presentations, how to secure fellowships, applying to grad school, that's a big one. They don't even know that—many of these students don't know that you can go to grad school and not pay for it and then have a stipend too. We're so used to having to pay for undergrad, but for master's or PhD, did you know that you can get paid for that? Or, even better, how to survive grad school. Like grad school's gonna take up the majority of your time, how do you manage to balance schoolwork, research, study, and then also, bills, doing taxes. Doing taxes as a grad school is another issue in itself, but it's these many things that hinder a lot of women of color whenever they get into grad school.

A lot of things that they're lacking, and because of that lack of information, it's another reason why the additional gatekeeping is placed upon them. That's my motivation, is to not only get us there, but keep us there, and once you go through our workshop, we still stay in contact. We have our private group, and we do yearly reunions and talk about how's everyone doing? Ways to keep in contact because we want to keep this and foster this type of initiative. We want to help build up our numbers, and I'm hoping that this continues on. This is our third year doing this, but it's really important that we have representation in STEM. It's very important that we see underrepresented minority professors and staff members in research institutions there, to show that we do belong there.

Bonnie: Yeah, thank you so much for sharing that and for your work, which is, I just wanna honor and acknowledge, is in addition to all of the things you just described, and is not insignificant work I am certain of. Thank you for that, and has already had big impacts on many people. Really grateful for all of that work. Critical, right, to change the game. We initially contacted you after we saw a really great article in *The Washington Post* titled "Black Women With ADHD Start Health, With a Diagnosis at Last." In this story, you share your personal journey to getting an ADHD diagnosis, can you share some of that perspective with our audience?

Miché: What do you mean by share some of that perspective?

Bonnie: Can you share a little bit about that journey to getting your ADHD diagnosis?

Miché: Right. Since the diagnosis and me working with it, not against it, I've had plenty of time to really think about this because I really didn't know where it began, I thought I was—like I was just lazy. I just needed to work harder, that's why things are just falling apart, but I wanna say it kind of started back when I first got into college. My grandparents, like they were huge components of making sure that I was educated, that I had everything I need, and I stayed on top of my studies. That structure was actually what kept me so academically strong up until I graduated and then went to college. Didn't have that structure, didn't know I needed the structure, couldn't really put it on myself, and that's where things started, like highs and lows, even though, like academically, I struggled big. I don't even wanna say how low my GPA was by the time I graduated undergrad, but it was enough for me to receive my degree, but one thing that kept me strong was my research and the thing that I was working on, and I had a lot of these coping mechanisms that definitely helped me retain some of the information that I was learning through reading papers and just not really following—like, I had difficulty with matching what I was learning in the classroom to my field. I was just more focused on, oh, I'm doing remote sensing and I really loved it, and even with classes that were like my passion, that I was really excited about, I still had—I'd still struggle with that one, mostly because I was turning in my assignments late.

Going through that, I know that that was not good of me, I needed to do better. I knew I wanted to get my PhD, but decided to opt for my master's in geographic information systems, or GIS, that one surprisingly turned out very well, mostly because half of the time, the majority of the time, I was doing my classes remotely and I didn't have such strict deadlines, and I was able to re-watch things and re-read things and it turned out great for me. Again, didn't know it was related to an issue, but kept on trucking, knew I was gonna—I wanted to get my PhD. Got into my program, but I worked really hard to make sure that I could make up for the bad GPA I had undergrad by taking additional classes online, working really hard to bring up my GRE score, and I was so happy that I got in. I was like, I'm not gonna ever do this—I'm not gonna do whatever happened in undergrad again, but I went back to, not so much exactly what was happening then, but I noticed that I had a hard time with juggling multiple things. As a first-year grad student, I'm expected to attend classes, turn in my homework assignments on time, also work on my research, and while at the same time, study for my qualifying exam. It was kind of like I had like one bucket of water, and I can only pour it into one cup, and if I try to pour that bucket into one cup, someone would say, hey, you’re not pouring it in this cup, and so I would run over to that cup and then it’s like, hey, not this cup. Basically, I was told that I'm not putting in—like I need to evenly divide all of my time 100 percent to all those three things. It was difficult, it was so difficult.

My grades weren’t the best, they weren’t, and I was—like I was told by my advisor, she wanted me to succeed, she knew that I could do it, and she really did believe in me. I was seeing that things were not going so great again, and so, my fall semester of my second year, I really put my all into it, or I thought was my all, but then, it turned out it was the same situation again. It was getting to the point where I was on the verge of not being able to pass my qualifying exam or show that I could demonstrate the knowledge. My advisor recommended that I go to Student Disability Office, but she knew that there was some sort of disconnect based on certain things that I would do, like whenever I’d give presentations, I would say the logic correctly, but then, when I get to the result, it’s the opposite. Or I said the opposite result that didn’t match with the logic of everything else that I was saying that was correct. My writing had a lot of grammar mistakes, I was turning things in late, or half done. That ultimately got me—that sent me towards getting tested for ADHD. After the so many hour long test, I was diagnosed with moderate to severe inattentive ADHD. That prompted me to go on my medical leave and that was actually at the start of the pandemic too, which, I'm laughing because it was just weird timing because, as a part of my leave, I had to see a therapist and therapists were trying to scramble on how they were going to accommodate for the pandemic, so I didn’t have a therapist. The first few weeks of my leave, I was feeling really sad and like thought that this was the end, I’ll never be a planetary scientist, and I didn’t know where to go from there.

I was very fortunate to have found this group, it’s called Unicorn Squad For Black People of Marginalized Genders with ADHD. I followed the page, they have weekly meetings every Monday. I didn’t go the first few weeks 'cause I didn’t know what to do or say, but then, one evening I was just like, I need to go, I need to go. I went, I walked into the meeting, the lady who runs it, her name is Renee Brooks, she’s very kind and warm and she greeted me. She’s like, oh, a new face, hi. I was like hi and everything, and I just broke down, started crying and telling them about what was happening with me academically, the diagnosis, and how I just thought I was lazy, and I couldn’t do it. I don’t think I can ever be a planetary scientist. I was very fortunate that night to have gone because that’s where, apparently a lot of the grad students, PhDs or master’s students that also were black with ADHD, were also there too. They were like, girl, I was in the same boat as you last year, or five years ago, and started telling me their journey and they were just giving me words of encouragement and saying like, it’s gonna get better, it’s gonna get better. Like these helpful tips and then, I would go to those meetings like every Monday night, and like, I felt heard and seen and confident, and it gave me the confidence to keep going. To make sure that I could stay in this program and get the help that I need, get on any medication that was necessary, and also learn more about my ADHD and how I can work with it instead of against it like I have been this entire time.

Bonnie: Yeah, I just really wanna thank you for sharing that. I know it is hard to be vulnerable and share personal stories like that, so thank you. I also know how important it is to share these kinds of stories because, as you indicated, so many people think they’re alone in this and are trying to make sense of life feeling different, feeling othered in lots of ways, and I just have to say that hearing you express your feelings that you couldn’t be a scientist because of your ADHD makes me emotional. I have felt that for my own disability, but I hear that all the time. That is the one thing we are working so hard to change. Just thank you so much for sharing that.

Nick: That was powerful, and thank you for taking—it takes a lot to be comfortable in that space and actually share all that. Bonnie talks about this a lot. I now the episodes where we talked about our own journey’s, it’s a lot to do that, so thank you. I wanna jump to, you told us a lot about the journey, and you even mentioned this in your journey, and you said this in your piece, that you started to think of yourself as a lazy student who just has to try harder. Is it okay with you if we dig deeper there a little bit? Why do you think your first thought was that you were lazy?

Miché: I was just always conditioned to believe that if you don’t put in 100 percent, which is just you meeting all the expectations, then it’s considered laziness. Even more so was related to a symptom that was attributed to the ADHD, which is this constant fatigue. I had a very strong passion what I was doing. I love spectroscopy, I love Martian geology, I'm really passionate about it, but my body was just overwhelmingly tired constantly. I could get eight hours of sleep and just be tired. Even when I—I would put in so many hours of like completing my homework, writing papers and even when I have nothing to do, I was still tired all the time. That tiredness that I would experience, I would just contribute it to laziness 'cause I would take two, three naps a day. It was ridiculous and I would just say, no, I cannot take naps, I need to drink some coffee, I need to drink a Red Bull, anything I need to drink, energy drink, to get myself going so I can complete this assignment, it’s not that hard. Just send this email, just do the thing, it’s not that hard. It takes like two minutes, but, for some reason, my brain registered as this is a mountain that you have to climb and it’s not even a small mountain, it’s a big mountain. That’s why I thought it was just—I thought I was just lazy because, one, I was experiencing my symptoms of ADHD, and, two, I was conditioned to believe that if I'm not able to perform like I'm supposed to, then I'm just lazy. Even today, after the diagnosis and me working with it, I still hear that tiny little voice in the back of my head whenever I—even if I can only do 97 percent, I still hear that little voice saying, lazy. I have to do everything in my power to just ignore it and just be like, if I can just get the most important stuff done, then that’s good. If it’s great—if I can do 100 percent, that’s great, but, quite understandably, and actually, humans don’t always produce 100 percent, they do like—what’s that rule, 80/20? I thought everyone was doing 100 and I was just doing like 20 percent.

Bonnie: I am certain that what you just shared will resonate with so many people. This idea for a lot of individuals, whether it’s ADHD or another type of disability, are, for lots of reasons, this notion that it is laziness, that there’s something about you that means you think about things differently so you’re working harder to fit into social norms or you’re trying to work within a culture or a system that isn’t working for you, it’s working against you. This idea of exhaustion and fatigue is so common in the disability community. It is one of the most common things that I talk to people about and this culture of science doesn’t understand that I think. We are a grind culture, right? How do we become inclusive and recognize that that attitude is very exclusionary for lots of people for lots of reasons, disability or otherwise, so just thank you so much for sharing that. I really think that what you—the way you gave that example in your experience, and, again, I know it’s a vulnerable place to be, I am certain it is striking chords with so many people who are our listeners. Thank you.

Miché: Absolutely. Absolutely.

Bonnie: Thank you.

Miché: One other analogy I wanna use with this is, you know those carnival games where you throw the little dart at the balloon, and it pops? Sometimes the balloon's worth like 100 points and some of them are worth 10 points, obviously, you want the 100 point balloons. Neurotypicals, they see the point difference, they see the differences and they know to pop those 100 point balloons, but the ADHD mind it's like, they're all worth 100 points. It's like, no, they're not. Yes, they are. They are all 100 points, I need to hit every single last one of them. That adds even more tiredness to like ourselves, it's so hard—there's so many components that add to the tiredness of it, we really do work really, really, really, really, really hard. We stay up late to complete tasks, we put in long hours, and yet, it's still a leaky bucket.

Bonnie: Thank you, that is a very—that's a great example. I assure you, you are not lazy. Please get that thought out of your brain. I know that it's hard. Can you talk a little bit about, now that you have this diagnosis, and I am a little bit careful here because in the space of disability we talk about diagnosis is one thing and sort of the lived experience in the culture and the society really is what matters in this space, on this podcast. There's also an empowering experience sometimes for individuals with having a name or understanding more what's going on with your body. To work with it, not against it, as you described. Kind of from that framework, once you understood that, what has changed for you? What impact has that diagnosis had on your life?

Miché: Well, it actually, there's actually like a few really. The first one being that during like the first few months of my diagnosis, and reading these many different books about ADHD, I started to see that it wasn't just ADHD, right? The inattentiveness, there were some comorbid stuff attached to it, which is actually pretty common with people with ADHD. It actually led me to go get another assessment for learning differences, specifically it was for language processing disorder, and the reason why I thought that one, reading the description of it, it matched a lot with what issues I was having overall, that I've had for many years. I was aware of that issue, but I just thought that was just me being lazy, again. Also, my little sister, she was diagnosed with that when she was, I think she was eight or nine years old, one of those, and I had to read the description to my mom because she's legally blind. Reading the description, I was like, oh, wow, that sounds just like me, but then I was like, nah, that's not me. That's just for little kids, like, I'm not a little kid, I'm an adult. I can do things. Fast-forward, going to the assessment and mentioning to the lady about I wanted to get assessed for language processing disorder specifically because I thought that that was the thing that I have, and only that.

Then, she asked me about, well, how’s your reading? I was like, how’s my reading? Like, I'm a PhD student, I can read, I can see words, I can process the information, I can read. I was like, yeah, I can read, but sometimes whenever I'm reading the words kind of change on me a bit and it’s just because I need new glasses, that’s all. It’s something that I've been telling myself, like, I feel like I say this every year, in fact, it’s one of the things that I’ve said to my committee members when they were talking about how I wasn’t writing at a PhD level because I had a lot of grammar mistakes. I was like, oh, I just new glasses. Well, after my assessment, turns out that I also have, I did have language processing disorder, and for those who don’t know what that is, best description of it that I heard is it’s like dyslexia for your ears. There’s like receptive and then expressive, the receptive part if someone talking, you receiving the information and it’s kind of like you may hear some parts of the conversation, you may not hear the whole thing of it. Like if you’re like talking to someone over the phone, they have a bad cell reception, cuts in and out like that, so that’s the receptive side and the expressive part is being able to say what’s on your mind in the right syntax, using the proper prepositions and stuff, or even pulling out a simple word.

Sometimes I’ll say another word when I mean—I’ll say a word, but I’ll actually mean something else. I won't even realize that I said the other, the wrong word. My boyfriend was like, don’t you mean this? I was like, yeah, I said that. He said, no you didn’t. I’ll have to like really think about it, I'm like, did I say that? That’s the language processing part. Then, also, dyslexia and that one kind of took me for a loop. Turns out the words aren’t supposed to change when you’re reading. Go figure. I would get words mixed up, like different and difficult, they both start with the same syllable, but for some reason, my brain changes some of the words at the end, and so, when I read out loud, I’ll say the wrong word. I'm still kind of working through those two, but basically, getting back to the—like how has it impact everything? It has actually help me become a bit more effective with my learning. I use transcribers now and this one transcriber that I use is Otter.AI, and absolutely just love it so much because it takes all the words. I don’t have to focus on both taking notes and paying attention. Now the transcriber just takes my notes for me. I can make little comments on the side or add little screenshots or photos if I want to. I can also go back and like re-read everything. It’s been like the best thing ever. I use a graphic organizer to help take notes and conceptualize all the connections to things that exist within my field and has made me a bit more of an effective scientist because I can say, hey, this paper, this information in this paper is connected to this information in this paper, and that's related to this huge point that I'm trying to make with regards to these sulfur-bearing minerals on Mars. I can visualize it, I can see how it's all connected.

Even more so, since the ADHD diagnosis, and really finally getting the right help with, like getting medicated, I'm not as sleepy anymore. I don't take several naps, I take zero naps. I don't need to take naps anymore, it's not a necessity. Also, I'm more organized too with my calendar. I don't live like off my calendar, like that sounds like workaholic-like, but more like I'm able to see how much time I have in between things and make sure I don't have back-to-back-to-back-to-back, otherwise, mental fatigue. I organize like my time, still working on the time organization, but as far as like my environment, I've gotten a lot better with that. Organizing my work, organizing how like the materials that I collect from reading papers and taking notes. I color code things whenever I take notes. I have a mind notebook that if I have a thought, that I write it down immediately. I know that there's a small task that takes like no time, I do it immediately because I know that if I don't, then it'll fall apart. I have all these safety nets prepared for myself just in case something falls apart. It kind of, I'll try not to ramble about this too much further, but I was able to get back into my program like in fall 2020, and being remote and having everything, like using my transcriber, like has been a huge saving grace for me because switching from one task to the next is aggravating for people with ADHD 'cause you have to disengage from the one task and then turn on the brain for the next task, and that being hopping into your car and then driving, and then parking, and then walking to the class, and then finding said class, and then sitting at the desk of said class, and that all requires like just many, many steps to it. It will be interesting to, when everything is going back to in-person, to recalibrate my brain for in-person now that I've figured out how to work my brain or work with my ADHD virtually. Ultimately, the diagnosis has helped me with improving a lot of things that were actually considered like huge hiccups in my progress as a PhD student.

Nick: Thank you so much for sharing all of that. I would love to ask you a little bit more about your article. In the article, it states, "For many black women like Aaron, finally having the answer comes with both relief and grief after years of suffering and being misunderstood," and, at the same time, we've seen recent data published in JAMA indicating that there are disparities in the diagnosis and treatment of ADHD by race in the United States. Putting this all in context of what you're sharing with us, can you share your insight on the bias that occurs at the intersection of gender, race, and ADHD?

Miché: Okay. Yes, I can. All right. I don't even know where to begin. I guess I can start with the whole getting diagnosed process. ADHD isn't necessarily a new thing that has cropped up with humans. It's been around for decades, even before I was even born, but the stereotype with ADHD always stems around the notion of it happens to little boys and they're always hyper. Going down this journey I learned so, so much about ADHD that a lot of people get absolutely wrong. First and foremost, there's different ways of like—ADHD manifests itself in many different ways: hyperactivity, which is the common one everyone knows about, inattentiveness, then there's like the combination. The inattentive part mostly happens with girls, and girls that had the inattentive ADHD are often looked over because we don't have the in your face hyperactive rawr, rawr that is associated with boys with ADHD. The first hurdle is you don't have ADHD, it's like you don't have the stereotypical one, and so, then that basically prevents a lot of black women from getting diagnosed. Then, let's say you do have, like you do have a doctor that's like, oh, okay, they know about ADHD. They know that there's inattentive and then there's—all of that, they know the different types, and they know what the symptoms look like. Then there's this other bias that is, oh, black people are just trying to get drugs, and so, they'll make up something just so they can get high off of these medicines.

By the way, like, as far as like going to a doctor about this, it has not happened to me, but going to a pharmacy there was an experience where I was trying to fill my prescription and the pharmacist took one look at the prescription, and split second said we don't have it, and then didn't engage with me any further. I'm like, okay, so like what do, like, when, will, it's like I can't tell you that. Like, okay, I understand that there's a law about informing—if there is a law about it. I have a prescription, it's legitimate, if you need to call somebody, like, what do? That just resulted in me going to another pharmacy. Essentially, like this preconceived notion that black people are just trying to get high off of stuff and that we cannot give them any medicine. There's also this other notion too about, with little kids, little black kids, and actually, this like, this article that I read awhile back about black children are, I forgot the number, but it was a fairly large number, are extremely less likely to be diagnosed with ADHD because of that preconceived notion of this black child is acting up and is just doing this because that’s just how they are. For white children, there is a problem, oh, no, we need to get this fixed. What we end up seeing is that for white children or for white women or for white people in general, like they have a disorder, but whenever we look at underrepresented racial minorities, they are the disorder. It’s alarming because this actually feeds into this other side of whenever we’re in academia or even just trying to be productive citizens and we have the debilitating symptoms of ADHD that prevent us from succeeding, it adds another thing for them to gatekeep about. It’s like, oh, you don’t work hard, oh, you’re being lazy. Oh, you’re acting irrational. It breaks my heart and like, whenever I go to my group meetings, I often hear these stories about the hurdles that the other women have to go through just to get their prescription filled, just to get a prescription. Psychiatrists just giving them the runaround, not answering any of their phone calls. Giving them medicine that they’ve said that doesn’t work for them, but they just simply brush them off and just ignore them about it. It’s like, why would you do that? It’s annoying and I don’t know, I can't even really put into words how aggravating this is, given that it’s already known that in the medical field black people are already treated like trash.

There are so many statistics out there that talk about how black women are more likely to die in childbirth than any other racial minority. There’s so many statistics out there that talk about how black women are statistically at more risk for other things medically, and there’s so much bias. I can't even get—I can't even probably fathom it for black men in general 'cause black men do get ADHD too, and one other thing that I do wanna bring up is like, even within our own community, like we have this stigma that ADHD is only for white children. It’s like, you don’t have that. Whenever, and this I've heard from like friends and other black women with ADHD, they talk to their family about it and it’s—they don’t believe that that’s something that they have, that it’s just, oh, no, you just being lazy, or like you didn’t have that before. Or they’ll just come up with everything to disregard them stating, hey, I do have this issue. It exists and it’s not something that came out of nowhere, guess where I got it from? They just don’t wanna acknowledge it. In fact, I'm not gonna name drop or anything, but I have a friend who had a family member reach out to her about getting information about ADHD because her daughter, my friends family members daughter, was diagnosed with ADHD, but she did not want that friend to say anything at all to the family because they’re gonna act some type of way. They’re gonna feel—they’re gonna be opinionated. They’re gonna say, oh, no, no, no, no, she doesn’t have that. She doesn’t have that. She doesn’t have that issue. Not with just ADHD, with any other mental illness too, with anxiety and depression, nope, you don’t have that. It’s like, okay, so me ignoring it’s not going to make it go away. Medication, therapy, that helps, but, no, facing it and then just working with it, no, that’s completely out of the question. There’s so much out there with regards to being a black woman with ADHD, with a mental illness, with anything out there, and it’s a shame that these many barriers are out there just for us to get to the point where everything is manageable for us and that we can actually be productive and actually function and not have to be hindered by a lot of our symptoms.

Bonnie: Yeah. I am, the work that we do is very focused on trying to understand how to dismantle some of those barriers, right, and so, thank you for sharing that. That is such important depth of detail that I'm glad you’re sharing with our audience.

Miché: One thing I absolutely do wanna say, and I need to say this, is that not all black families are like that, though, they’re not. Like I'm very fortunate that my family has been very supportive about this and, even more so, I think it’s because of my little sister. She was the one who got diagnosed with all this stuff first, and so, I guess, she crossed so I could walk—so I could run and everything—or she walked so I could run, and it be accepted with my immediate family. I know a lot of other black families, they accept their children and recognize that, hey, my child has ADHD, my child has anxiety and depression, my child needs help. I know it’s a very touchy subject, so I just wanna make sure that—that this doesn’t happen with all underrepresented racial minority families. There are a lot of families out there that actually do listen to their kids, but I do wanna acknowledge that it does happen within our community as well, where there’s another hurdle that exists that prevents us from getting properly diagnosed and getting the help that we need.

Bonnie: I understand. No, thank you. I wanna reflect that nuance and appreciate the care you take to explain that. What I take away from that is something that I hear often, which is a need for community. Right? We all need a community and in these instances where you have a disability or you’re different really in any way, if you feel excluded from your community that is a barrier, right? Whatever your community is, quite honestly, that is a barrier. Whether it’s in science or in your family or in your friend group or your peer group, we need that. That is something we’ve discussed even in other episodes on this podcast, I discuss with my students about, is making sure you have that community, wherever that is, however we can get there. I think that is not too be undervalued is the importance of that, right? I think relatedly, I always imagined that the interconnection between how society views ADHD, disability, and the gaps in inclusion of people with these experiences and identities, is not happenstance, right? That if we can do a better job in promoting and including people with disabilities, people with ADHD, in science, whatever that science may be, that is going to be helpful in leading the way for societal change by showing the reality of what can be and what those people are, instead of perpetuating the stereotypes that have historically been in place. Relatedly, my question to you is, what do you think we can do for STEM, is the we here, science, to be more inclusive of people with ADHD, and particularly, people with intersecting identities, underrepresented racial minorities, women from those underrepresented groups, what can we do better?

Miché: Well, the first thing that you can—that STEM can do is be well-informed. One thing that's pretty prominent in STEM is that we are, like, people in STEM are the most informative people because we study, study, study to know a lot of things so we can make connections to other things to make discoveries. It's not too far-fetched to say, hey, STEM community, instead of shaming people with ADHD, especially when you're aware of it, why don't you learn about what it is instead of going off of some stereotypical notion that you developed through some 10-second video or some short scene from some show that was giving you the stereotypical air of ADHD. Why don't you learn a little bit about the struggles and the experiences that people with ADHD have to go through? Not so much like be an expert, not asking you to be an expert, we just asking you to be empathetic because that's where the real help comes from. That's where you can actually—that's where the next thing that can happen begins, which is really listen to people with ADHD when they tell you about their accommodations and then, be true to making them happen.

If someone with ADHD needs extra time, who are you hurting by giving us extra time? Now, we do know that there are some instances that are time-sensitive, then let us know ahead of time. Or offer us a way to help facilitate the entire process that can make the thing that needs to be submitted done in a timely manner. Another thing would be adding transcriptions or imagery to what you're talking about 'cause, quite frankly, hearing someone talk for excessive, long periods of time, you need something to like get us engaged because you talking, standing there, is not gonna always be the best thing ever. Show us stuff, and that's one cool thing about, like about presentations, there's a slide. The slide, we're not gonna look at that slide forever, but there's stuff to look at and it keeps me engaged and I really wanna know what's gonna be on the next slide. There are some people that will talk without imagery. Draw if you must, captioning would be the hugest one. I can't tell you how many times I just love—whenever I go to a presentation and see captioning, I almost wanna cry 'cause I'm like, thank you, now I can understand what you're talking about. I can ask questions and engage.

Bonnie: I just, I've got to interject here, because thank you for saying that. It's a battle that I personally fight. So many people think captioning, and Nick can speak to this more than I probably can, captioning is only for people in the crowd who are deaf or have hearing, who are hard of hearing or have hearing loss. Thank you for saying that.

Miché: Yes, like that drives me crazy. It's like, okay, let's talk about hearing works, all right, so how do you hear? With your ears. Okay, cool, so the ears take the sound and then you just suddenly know, or is there like a process for which the language to go through this facility called your brain, right? Oh, right. There's another step after hearing the words that involves your brain, so it's not just hearing loss people, it's also people who have difficulty with paying attention as well, or even processing language mentally. Oh, yes, that's why we need captioning. It's aggravating, it really is. It's like, but I've not had anyone like pushback with regards to me requesting captioning, but I know that it exists out there. In fact, when I was trying to set up for—I was setting up for something one day and I requested that we have captioning, and then someone said, well, what if it's annoying to someone?

I'm like, I'm sorry, are wheelchair ramps annoying? I don't understand. Are elevators annoying? Like, who says that? What if this is annoying to people who don't need it? Like, I don't care. I know this sounds really mean, but like, quite frankly, why are we thinking about the people who don't need it and making that a priority? Yeah. There are a lot of—like, honestly, I guess the biggest thing would be to really listen to people with ADHD and honor their wishes and really believe them when they say that they have difficulty with XY and Z. Or maybe they don't even wanna share the difficulties in detail, maybe you should just truly understand like, this is uncomfortable for them to share with you, but they know what they need, and the discussion should just end right there and then you should just abide by it because, really, no one's trying to cheat the system by just being able to be on an even playing ground with everybody else.

Nick: Yeah. Absolutely. I mean, we talk on this podcast about so many things and this topic sort of exhausts me when you said it right there, nobody's trying to cheat the system. This concept that seems to be pervasive in so many peoples mind that you're just trying to one up the rest of us, is absolutely insane to me. I just cannot handle it. Miché, you have shared so much information with us. This has been amazing. Where can people who wanna know more find out about your advocacy work, even about your research? There's so much—there's clearly so much that you're doing, where can people learn more?

Miché: One place would be Twitter. I have a Twitter account, I know I haven't been posting there lately 'cause I've been super busy with studying for my qualifying exam, but like my Twitter handle, which is like, Astrenome, that's how I pronounce it, A-S-T-R-E-N-O-M-E, on Twitter. Also, I have a website too, but you can find the website on my Twitter page if you look at the link there. It's just my name Miché Aaron, M-I-C-H-E-A-A-R-O-N, dot.com. It's not fully filled with any of the research stuff as of yet, 'cause I've been really busy and stuff like that, but I've made a page for like talking about spectroscopy and like going to the basics of it because it's actually really cool learning about that. Also, talking about, still working on that page about like my journey too because I do wanna help other people too that have like, who are late diagnosed, 'cause it's a struggle and you really wanna succeed, but it's holding you back just not having the right things that you need, and some of the right things that you need require a diagnosis, but other times, it's just here's a really cool tool, so every now and then I kind of post stuff on my Twitter page of, hey, you need a transcriber? Here's some right here that are free. Like, hey, use this cool trick to like—in fact, as the school year's about to start for many college students, I'm gonna post something very soon about some useful tools that have helped me with like being able to learn, survive academically, and also, be a well—like better organized, 'cause you can't cure ADHD, you can't hack it, it's just something that you have to find ways to like work with it, and sometimes the same thing may not work forever. You may have to switch it up every now and thing, so just having safety nets will be the way. That's where you can learn more about my research, advocacy: Twitter and my website.

Bonnie:	Well, Miché, thank you so much for being our guest. I am grateful for your time and your willingness to share, and I am very grateful that you are part of our Hopkins community. Thank you so much.
Miché:	Thank you very much.
Bonnie:	You have been listening to *Included: The Disability Equity Podcast*, brought to you by the Johns Hopkins Disability Health Research Center.
Nick:	Thank you to our *Included* podcast team and everyone that made this podcast possible. Especially Prateek Gajwani, Curtis Nichimoto, and our guests. Music is by Molly Joyce. This podcast is supported by a Johns Hopkins Ten by Twenty Challenge grant.

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