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Allison Gonsalves & Dawn Wiseman Interview

I – interviewer

A – Allison Gonsalves

D – Dawn Wiseman

I: Hello, everyone. Today we're with Allison Gonsalves and Dawn Wiseman. We're in the Redpath Museum at ??? Lecture Hall, where the first women in Canada were educated in 1866, sitting in the same place that Dawn and Allison are sitting today. Dawn and Allison, please state your name and your affiliation.

A: I'm Allison Gonsalves. I'm an Assistant Professor in the Department of Integrated Studies in Education, in the Faculty of Education.

D: I'm Dawn Wiseman. I'm a Faculty Lecturer in science education in the Department of Integrated Studies in Education, in the Faculty of Education.

I: Could you each give us a summary of your research. Allison?

A: Well, I'm interested in how people talk about science, and what that talk reveals about their ideas around gender, particularly in science. But also their epistemology, so how they think the knowledge, the scientific knowledge, is made. And how that impacts how they participate in scientific practices. And also how they teach science.

D: So most of my work has occurred alongside indigenous people, peoples and communities for over 25 years now, and my primary line of research focusses on how it is we look at science education from kindergarten through Grade 12. So elementary and high school. And bring together indigenous and Western perspectives about how the world works. So I'm interested in that for elementary and high school, but also how is it that we support our pre-service teachers in understanding what that means in their classrooms.

I: And, with respect to your professional and personal work, how is diversity important to that?

(Dawn and Allison laugh.)

D: We were talking about this before. I think, I mean, I think we have this sense that science and pretty much everything we do within the Canadian context should reflect the society that we're in. And it doesn't necessarily do that. But we also have some tensions around it. Having gone through science programs ourselves, and watched —watching— other people go through science programs is… Are we inviting people into places that aren't welcoming for them? And is that setting them up for failure?

I: ?

A: Yeah, I would agree. I would say that that is a big tension in my own research, especially research in gender and physics, which is where I've focussed, where a lot of the stories I here are about students who are experiencing microaggressions in physics and feeling isolated from physics. And so my concern with this kind of work is are we just trying to shepherd people into a field where

they're ultimately going to feel alienated and isolated, and experience imposter syndrome and microaggressions. And so the work for me is really about how do we change the culture… not just how do we get more diverse people into science, but how do we change the culture of science so that people who do enter the field don't have those experiences? Or feel more welcome?

D: And I think also it's about… Right now, the way we approach science is really defined from a very Western perspective, and what is it that we're not understanding by not having those other voices present? Within our science departments, having our science teachers understand that, etcetera.

I: So you as women, you both were trained in the very traditional science sector. I know Allison was trained as a geneticist, Dawn as an engineer. Your journey through those educational -- those years of educational formation, how did your interest as a woman in those fields, and your interests in diversity and your interests in inclusivity, did they develop granularly, organically or was it a sudden realization?

A: Well, I think that my interest in particular in gender and science came out of my own Master's experience. Doing research in genetics, in a lab, where I was fairly isolated and definitely came up against a kind of Old Boys Club culture in the lab, where I would hear stories about cigar nights and other kinds of activities that the guys would engage in that I, you know, wasn't invited to. And so that was part of it, but then, I guess, also just starting to feel towards the end of my Master's degree that this wasn't really for me, and interrogating why. I started to realize that it was an identity thing, that I didn't really feel like I was part of that culture, and felt isolated from, say, laboratory culture. And so I wanted to explore that more, and learn more about, especially women's experiences, but diverse peoples' experiences.

D: Yeah, I think for me my undergraduate in engineering was actually a pretty positive experience most of the time. There were blips because, you know, it's in a faculty of education – sorry, I keep mixing those two up. Within a faculty of engineering in the 1980s. There were a small percentage of women, and I was in engineering when the shootings occurred at Polytechnique.

I: Yes.

D: So that certainly kind of raised the conversation more than it had been going on. I think it had been going on, but it brought it to the forefront. And in the aftermath of that we actually saw a fairly significant increase in the number of women in engineering, which has dropped off again. And so there is that question about, is it a welcoming place for women and others who are not sort of the majority of people represented there? But my undergraduate experience was really good; where I sort of ran up against… I guess I first ran up against it was when I entered the workforce and… But that was also during the recession and so I wasn't in the workforce really long, and I kind of talk about that as a really happy thing in retrospect, because it was what shifted my whole kind of career path. And I got hired back into the faculty of engineering where I had been an undergraduate and became involved in outreach to young women and to indigenous students and worked at the Native Access to Engineering program at Concordia, and then, well… and now I'm here. So that's how it happened.

I: Okay. So you've expressed some of the difficulties. What are some of the high points? Were there tremendous…

A: Oh, sure.

I: … openings?

A: I guess I also had a very positive undergraduate experience.

I: Yeah.

A: I did my degree, my undergraduate degree, in genetics. And the first year of my undergraduate was challenging. I think just because I didn't know what was gonna be expected. I found my marks were really low…

D: Yes (laughs).

A: … in my first year (laughs).

D: That was a shock.

A: But then when I started to discover the courses that I enjoyed – and they were genetics and molecular biology – and I just loved it. I was just fascinated by – every year I took more kind of specialized courses in an Honours genetics program, and I just became more and more excited by the science, and so that was extremely positive. I had really great professors who were super inspiring and made me think really big, you know. And I loved that. And that was sort of what spurred me on to do a Master's degree, is because I had these really big questions. And then I found as you go further along, like, those really big questions that you have get narrowed and narrowed, and so that you're focussing on this one tiny little thing that's a part of this really big question. But, no, I would say the early years in my experience in university-level science, anyway, were extremely exciting.

D: I would say the same thing about my experiences in undergraduate in engineering, you know, I've always been fascinated by "Why does that thing work or why doesn't it work right?", and kind of getting my hands my hands dirty and I was surrounded by people who were interested in the same kinds of things. And not just my peers, my professors as well, and I think that's actually one of the things – one of the places – where I learned one of the most important things I use as a teacher educator, which is to say "I don't know, but I know how to help you find out." Right? Because our professors would say, "Wow, that's really interesting, I didn't expect that to happen, let's see if we can figure out what's going on." So, I loved that, but it doesn't kind of translate into the workforce, I think, like going into a Master's degree, things narrow down and they're really specific and they're really, in some ways, instrumental. So when you still have these big ideas, you're thinking "Why am I focussed on this tiny little thing that doesn't really have much to do with anything except whether the company will be profitable or not next year?" So, yeah, it's sort of different motivations.

I: So you've described your early training, your formal training, your experiences as undergraduates and early, your early years in your careers. Have you seen significant improvement for women and/or people from diverse backgrounds in your work, in your practice?

A: Well, I'll start. I'll say that from what we know, statistically, participation in sciences is down, across the board, especially in Quebec. Also across Canada. We're seeing the number of students entering into science fields decreasing. Where we are seeing differences is in the life sciences and in the medical sciences, where there's parity and often even more women enrolled in undergraduate programs then men. Where we're not seeing any improvement is in the quote-unquote "hard

sciences." The physical sciences, so physics, engineering, math, computer science, where the numbers have stayed the same for decades.

D: Well, but even in engineering, it's really interesting, it depends on the department. So if you look at something like environmental engineering or chemical engineering, frequently there's more young women than young men. But if, it's right, if you go to electrical or mechanical, the numbers drop off really dramatically.

A: So there are these stark disciplinary differences, and that's not just for women, that's for people of color and indigenous students especially, yeah.

I: So, obviously, those are some things that you feel need to be improved on. We need to somehow, and how could that possibly, any ideas how that could be ameliorated?

D: That's the whole focus of our work.

A: One of the things that I'm working with right now is, in working with departments but also working in schools, is just exploring this idea that maybe just talking about issues of underrepresentation might somehow insulate students from the chilly climate that they might experience. Maybe they think less, "Oh, it's about me," and rather, "Oh, this is a cultural thing that people experience, it's normal if I feel isolated, it's not about me, I'm not strange or odd or doing this wrong. And so having those conversations might encourage students to start to identify with the sciences even more, and may change things for dominant populations as well, so that men or boys and white people start to see what the field is like for other people. And maybe that might encourage some cultural change.

D: Yeah. I think it's really important, that cultural change is so important because we used to run a series of workshops every couple of years when I was at Native Access. And one year a colleague of mine who's at one of the Atlantic universities brought a student of hers who was a young indigenous woman in science and just so in love with science but having a hard time within her department. And her professor had brought her with her to the conference, and she ran up to us one day and she said, "Oh my goodness, thank you for bringing me." She said, "These are my people." I think it's about also, like, that change in culture or being in a place where people understand what it is you're talking about or are at least open to listening to you when you speak. And I think maybe sometimes there isn't that openness, we do things this way and not this way. And there aren't necessarily good reasons that we do things this way. We could open it up to other ways of doing it, right? But it does involve asking uncomfortable questions, like, well, why do we always do it this way, and is that really the best way or is it just that way because that's the way we've been doing it for so long?

I: Here's an uncomfortable question. How do you balance the work and personal life divide?

D: I don't, do you?

A: No.

I: Everyone answers that way; all women answer that way.

D: I don't know. I think… I don't think being an academic is about having a balanced life, and I think…. This is a psychological analysis. I don't know if it attracts people who are good at balance, right? What you're good at is focussing on something and working, sort of working that through.

But that doesn't necessarily lead to balance. You could have my husband here, he would tell you the answer to that question is no.

A: I mean, I would be interested in exploring this further. Because, no, it's true that I often… Right now my life is very restricted because I have a young child, and so there are things that I have to do at home and I have to leave my office and go and take care of her. And in the evenings you don't feel like doing work, sometimes you have to. And I usually always work on the weekends, and that becomes a challenge then to, you know, to be torn between wanting to be successful in your job, but also wanting to spend time with your family. But I know that there are some people who do it, right? I know that there are very successful academics who have lots of children, and who probably have somehow figured out how to have balanced lives. But I'm not sure, maybe that's an interesting study.

D: I think one of the interesting things that just happened last week is one of my research partners, her father was in the hospital and there was WiFi in the hospital, so we were continuing to have meetings. And my father was also in the hospital here when I started at McGill. And the thing I was really happy about was he was over at the Neuro and there was WiFi there. And I noted to her, I've had this conversation with a number of women academics now, and I've never had it with men, about how grateful we are for hospitals with WiFi when we're attending to children or aging parents, because then it allows us to continue our work. But that's not balance, right? So…

A: No, it's not balance that I did a lot of work while I was on maternity leave, you know? So, yeah…

I: I'm gonna explore the idea of mentorship. Did you have mentors during your training, your formal education, and if so could you just elaborate on what the importance of that in your work, your career.

D: Absolutely. I've had, well, I've had a number of mentors, but two really amazing ones, and they're both indigenous women. One of them was the person that I worked with at Native Access to Engineering at Concordia, who was Queen ???. So Queen was Tuscarora from Six Nations of the Grand River or Oshweken, which is in Ontario, and she was an Associate Dean in the Faculty of Engineering at Concordia. And I worked with her for 16 years, and really she was the, she's the voice in my head that I hear when I'm doing my work, so. And my other great mentor is the woman who was my PhD supervisor, Florence Glanfield at the University of Alberta, who is Métis. So my mentors have been indigenous women. I'm a pasty white woman, but they have taught me so much about teaching and learning and being an academic, and, yeah, I really look out to them.

A: I have two, I guess, mentors. Someone how I think about a lot when I think about what really got me interested in science… I mean, I was always interested in science, but the person who really encouraged me to think big about science ideas was a professor named D. B. Walden at the University of Western Ontario. And he just used to ask really big questions that got me so excited about science, and, even, I remember his exams were just these very simple, like, one question, that you then had to write for pages and pages about to try and understand. And so he was sort of the first person to introduce me to the idea of big ideas of science, right? Which is so core, so central to our teaching. And then another person who was just a really significant mentor to me was here at McGill, and it was Professor Gale Seiler who introduced me to sociocultural studies, science education. And she introduced me to a wonderful community of science education researchers, she introduced me to all of the theoretical ideas that are so core and important to my work, and she demonstrated to me that learning really happens in what they call "communities of practice." And

that communities of practice aren't just an abstract idea – they're an actual thing – and that in order to really learn you need to participate in them and to try to talk about ideas with people. And that was extremely significant to my learning, and so I would count her among, yeah, the most influential people for me.

D: And I think that's the same thing with the mentors that I had, it's that it has foundationally formed the work that I do, right? My work is really grounded in this idea of deep relationship. With my students, with teaching being about relationships, and science, fundamentally, being about relationships. So, when I teach about science, what I teach about is looking for those relationships.

I: So here is our final round. What advice, what words of… of aspiration would you give to someone wanting to pursue, wanting to enter these fields?

D: You wanna go first?

A: I would say, find your people. Figure out who your people are and form your community of practice. Find the people that you wanna talk about science with, but also find the people that you want to talk about other things with, so how you're feeling in that community. And lean on them for support.

D: I think one of the things… I would echo what Allison has said, but also remember who you are and where you come from, because that was good enough to get you to where you are, and it's certainly more than good enough to get you to where you wanna go. And, also, it's okay to change your mind, and say, "Maybe this isn't for me," or "Maybe this precise thing isn't for me, that narrow question, I'm not interested in narrow questions, I want to look at big questions." And stick to your guns, because that's part of who you are and that's part of what keeps you going.