

## **Courage to Act Webinar - “The Trouble With Girls In the Lab...”: The Unacceptable Costs of GBV in Science**

Transcription is provided in order to facilitate communication accessibility and may not be a totally verbatim record of the proceedings.

Anoodth: Hello everyone. And a warm welcome to the eighth webinar in our series. My name is Anoodth Naushan, project manager of Courage to Act.

Courage to Act is a two-year national initiative to address and prevent gender-based violence in post-secondary campuses in Canada. It builds on the key recommendations within Possibility Seeds’ vital report Courage to Act, developing a national framework to prevent and address gender-based violence at post-secondary institutions.

Our project is the first national collaborative of its kind to bring together experts and advocates from across Canada to end gender-based violence on campus.

A key feature of our project is our free professional webinar series where we invite leading experts to discuss key concepts and share common practise on ending gender-based violence on campus. Supported by caucus, these webinars are also recognized learning opportunities. Attendance at 10 or more webinars will count towards an online certificate.

Our project is made possible through generous support and funding from the Department for Women and Gender Equality, WAGE, federal government of Canada.

We begin today's webinar by acknowledging that this work is taking place on and across the traditional territories of many indigenous nations. We recognize that gender-based violence is one form of violence caused by colonization to marginalize and dispossess indigenous peoples from their lands and waters. Our project strives to honour this truth as we work towards decolonizing this work and actualizing justice from the same murdered indigenous women and girls across the country.

I want to pause now and invite everyone to take a deep breath. This work can be challenging and this topic is hard. Many of us may have our own experience of survivorship and of supporting those we love and care about who have experienced gender-based violence. A gentle reminder to be attentive to our wellbeing as we engage these difficult conversations.

And so before I introduce our speaker today, a brief note on the format. Dr. Coe will speak for 40 minutes and invite you to enter questions and comments into the question and answer box, and I will monitor this. And together we will pose these questions to Dr. Coe at the end of the presentation. This will happen in the last 15 minutes.

At the end of the webinar you will find a link to an evaluation form. We'd be grateful if you take a few minutes to share your feedback as it helps us improve. This is anonymous.

Following the webinar I will also email you the copy of the evaluation form and a link to the recording so you can view the webinar and share it with your networks.

And now I'd like to introduce our speaker today.

Dr. Imogen Coe was the founding dean of the Faculty of Science from 2012 to 2018, and is a professor of chemistry and biology at Ryerson University in Toronto. She is also an affiliate scientist at St. Michael's Hospital in Toronto, where her research group studies how certain drugs get into cells.

In addition to being an academic scientist, Dr. Coe is well known as an advocate for a more diverse and inclusive world of science in the post-secondary sector and beyond. She's very much in demand as a speaker and has received numerous awards for advocacy work.

It's my pleasure now to turn it over to Dr. Imogen Coe.

Dr. Coe: It's delightful to be here. I'm very thrilled to be working with the Courage to Act team and Possibility Seeds. This is very important work, and I think this particular conversation around science, gender-based violence, harassment in science is long overdue in Canada. We've got a lot of work to do and I'm happy to help shed some light on the issue.

So I want to go back to the title of the talk, The Trouble with Girls in the Lab because it's actually a quote that was made by a Nobel Prize winning scientist, a British biochemist, Dr. Tim Hunt, a very successful scientist, a very highly-awarded scientist who said, allegedly jokingly that the trouble with girls in the lab is you fall in love with them, they fall in love with you, and when you criticize them they cry.

There was a big – this is in 2015. There was a big outcry about this statement, he said it was just a joke, that he didn't really mean it, that he always ordered women, and I'm just wanting to hang onto that comment that it was just a joke, because this is really reflective of some of the issues that communities have to deal with in terms of exclusionary behaviour in the sciences.

I also want to introduce a couple of terms. We talk about science, but I'm also going to talk about STEM and STEM is an acronym that's used to describe science, technology, engineering and math, tends to be used in Canada and the US more so, and you'll hear the term STEMM in the UK and Australia which is adding medicine onto the end of that.

So we're really talking about the sciences including the applied sciences such as engineering. I don't know why math, the language of science is separated out here, and technology, I think was included as computer science really started to take off. This acronym has been around for a few decades now and it's widely used, although sometimes it's not the most useful acronym. But we do use it, so I'm introducing it here.

I also want to provide some information about myself in that I am an academic scientist. I have pursued my passion which is curiosity about the world around us. I'm very fortunate to have been able to pursue a career as a successful academic scientist and I think that's really important because when you may be dealing with scientists in your work, as student services professionals, you may come across this concept that somehow you're not a successful scientist if you've gone into this policy work, or you've gone into [science 00:06:22] communication, or you're some kind of failure as a scientist if you're talking about this diversity stuff.

And that's not the case. You can be a very successful, very accomplished scientist and also be able to understand how science sits within the bigger context of society. In fact we want scientists who are aware, aware of the world around them, and self-aware. So we want accomplished scientists, people like me, scientists like a president [unintelligible 00:06:49], all of the things that are the metrics and the measures of successful science.

But we also want scientists who are self-aware and can bring, for instance, their lived experience to that understanding of the way science is done and the questions we're asking and that kind of thing.

And so I've added here that I've also experienced sexual harassment as a scientist. It impacted my ability to do the work I was expected to be doing, particularly as a postdoc in a big American lab in that case. So I've also – I experienced it, I've seen it happening in science, and I've also experienced partner violence, domestic violence as a woman. So I bring that as a lived experience as well.

And I say that these days, this is a long time ago, but I say that because it's really important to understand that scientists, what goes on in science, science students are just human beings like the rest of the population, the rest of society, and things happen to scientists and within

the science disciplines like they do in other parts of the world, other parts of society.

So these are really important aspects to understand and to recognize that scientists are human beings and are fallible and flawed like everybody else.

I will also recognize here that I have tremendous white privilege. I have – while I've experienced challenges they are not on the basis of the colour of my skin. And when we look at things through an intersectional lens then we must really be aware that many of the issues are amplified if you are a woman of colour, a scientist of colour, a queer woman in science, an indigenous woman in science, then this is really, really important to apply that intersectional approach.

So in parallel with my passion for science I have an acquired expertise, a lived experience, and a deep training and scholarship on both science and the issues around the culture of science, and organizational culture, and organizational cultural change. And what is the culture of science, what does it look like, how can we understand it? So I have really a dual parallel career, particularly now in terms of having expertise in equity, diversity and inclusion in STEM, and I just want to remind everybody that just because you're a woman in STEM or a woman in science doesn't make you an expert on equity in science. And that's something that we're not very good at in Canada. We think that, you know, oh you're a woman in science so you must be an expert on this equity stuff. Or you're the only black woman in our department, so we'll put you on all of the committees around equity issues.

And that's not necessarily the case. You can have a very important lived experience and we must listen to those lived experiences but don't expect those individuals to be equity experts or have equity expertise.

And so scientists must go to the equity experts which are, you know, placed in all the universities and colleges across the – across Canada, to advance this kind of work.

So it's important to recognize just because you're a woman in science, particularly a white woman in science, it doesn't make you an expert. So just something to be aware of.

And we do know that the culture of STEM and medicine in many parts of the world is not conducive to equity. We can tell this. We know this. We've heard this. And we know that this is not a good thing. We're missing out on talent. We're missing out on questions. We have issues around the incredibly under-researched aspects of women's health.

All sorts of evidence and data that tell us that there is a lack of participation and that there is an exclusionary culture. So it's not even

the – you know, we often hear girls aren't interested. Girls, babies, kids are interested in all aspects of human creativity, but there's an exclusionary culture which eventually drives them out.

We have data on these issues. We have global data from organizations like the UN or UNESCO. And we have a lot of research on culture, on impact, on solutions towards changing cultures and increasing participation rates and increasing cultures of care. But acting on the research is challenging in Canada because we're actually not even talking about the fact that we have issues.

So if we look at some of the data which I've said that I will do, one of the biggest studies, and one of the most useful studies came out recently. And it came out of the US. And it is a massive study that was driven by three enormous academies of the disciplines of interest here.

So these are massive national organizations that represent the disciplines of science, of engineering and of medicine who did a massive study with a very prestigious committee that oversaw this, tons of data collection and they looked at the sexual harassment of women. This is 300 pages long, but it's a very sobering read. It's a very useful resource.

Bottom line is that this report found that 58, more than half of the women in science, engineering and medicine in the academy have experienced sexual harassment. That number is second only to the military, which is about 69 percent. So the number, proportion of women in these disciplines that have experienced sexual harassment is right up there at the top of the list of cultures that are exclusionary, or cultures of sexual harassment, second only to the military.

And just remember that this was written by and for STEM professionals and here are the categories that they describe of sexually harassing behaviour.

Gender harassment, so everything from abusive language to unwanted sexual coercion. So when I talk about this, the range of what we're talking about in terms of gender based violence it's everything from abusive, hostile language to rape. So. Harassing behaviour can be direct, or it can be ambient, it can be a culture of exclusion and this is what we're talking about. And the rates then are very high in science, engineering and medicine as measured in the US.

We have a public consciousness of what that might mean in terms of gender-based violence in these disciplines so we know that it can extend to issues around rape, sexual assault. But it's important to recognize that there are all sorts of other things happening in science. This is from the US report. Sexist insults, women don't belong in science. Insults to working mothers. You can't do this job with small kids at home. I actually received that in terms of an academic leadership position. You can't do

this. Wait till your kids have grown up. Not somebody else's whore. And so a nude image is posted at work, another thing that I've heard has actually happened.

So we know that these things are happening and these things I've described in this report.

If we take a look at the UK, again a couple of years ago, the Royal Society of Chemistry, so now a specific discipline, but again a leadership group, a group that said we've got an issue here, we'd better take a look at it, did a big survey and they looked at the retention of women in the pipeline. And some of the issues that were raised were things like bullying, discrimination and harassment. And they described these things as exhausting. These things were disincentive to stay in this discipline. Derogatory shaming in front of colleagues. And little help – little clear guidelines within the sector, within this discipline of where to go, what to do, and a lot of fear of retribution.

And these are very common themes that we hear over and over again.

There's not much reason to think that the disciplines are that different in Canada. And I can tell you anecdotally over many years I have heard and been told of stories of sexual assault, unwanted groping and stroking at conferences. Lab work. Unwanted sexual discussions. This could be undergraduate labs, it could be graduate level, I would say graduate level is deeply problematic. Field work, well-known to be a high risk area for sexual harassment of gender-based violence in the sciences. Classes and lectures, a number of stories of women being told that they don't belong. Examples being used in lectures, postdoctoral research, sabotage of women's equipment. I mean actually sabotaging the ability for women to do the work, and this is the one, academic leadership positions, I was told that yes I'd be great at this but not yet because my kids were small and therefore I had to – you know, I wasn't a good candidate.

So anecdotally we know that things are going on. And actually, thanks to the tremendous work of some NSERC women in science and engineering chairs across the country, Jennifer Dengate and colleagues, we now have some data to say yes, it's actually going on, and women are experiencing and seeing things like derogatory gender-related comments at much higher proportions to men.

So here are the female numbers, we can see a much higher proportion of experiencing or see this kind of harassment compared to men.

And this is quite a common theme as well that I will say I hear quite a lot is that I've heard even from a dean of science at one time was saying, I

had no idea. I had no idea there were these issues. I had no idea there was a problem.

And so there's this sense that if you don't see it or you don't experience it, it's actually not happening. But we can see that it is happening. This observed harassment discrimination going on, and this is another one for – describes derogatory comments – gender-related comments to instructors. Disrespectful behaviour towards female instructors. Look at this, it's almost three-quarters of female instructors. And this is a survey done in Atlantic Canada in universities in Atlantic Canada collecting feedback from women in science, natural science engineering in those areas.

So we can see that there is a much – that women see and experience gender-based violence, sexual harassment, everything from abusive language to physical abuse. They experience it at much higher rates. But they're often questioned as to the prevalence. Is it really true? Did you really see that? Maybe you misunderstood. I don't think that's happening. I think it was just a joke. I think you – you know, you're probably overreacting.

So this is certainly something that's going on that we need to be aware of.

And really, do we need to collect data? We know that gender-based violence in science, engineering and medicine has a long history in Canada. We need to name these women. We need to never, ever forget that these women were murdered on the basis of being women in engineering. Of being women in a place where the perpetrator felt they should not be, they did not belong.

And we must accept this. We must acknowledge this and we must remember that even though that was 30 years ago we're still dealing with the kind of culture and the kind of messaging that still says that women don't belong or they shouldn't be here.

So this is from a few years back at York University, progressive engineering school, had artwork commissioned for, in memory of – to commemorate this event. And it was vandalized. And so to their credit, a lot of work was done to bring in the people to help them understand why this was a problem, what's going on here? And we're still seeing it even at the 30 year anniversary of these events. We're still seeing misogynistic slurs written to say, yeah, women don't belong. You're not there, you shouldn't be there.

And it took 30 years. I mean this is appalling and shocking, it took 30 years for us to get to the point where we could go from naming it as a

tragic event, which is what the plaque says in Montreal, from a tragic event to a crime against feminism.

Call it what it is. So let's stop being passive aggressive, let's stop being so Canadian and polite, which hides a whole lot of things. Let's start being really honest and let's start having the conversations about the culture that we have here that says, what girls and boys – this disenfranchises boys as well – but let's start talking about what the culture is that says who can be where, and who can do what, and what they should look like.

So I have to recognize the culture and context are hugely influential. Just because you grow up with cats doesn't mean that, you know, it will influence the way you behave. Just because something has always been that way doesn't make it OK. It's the worst reason for keeping things the way they are is because they've always been that way.

And it is cultural context, because if you look at other parts of the world, people don't behave that way. If we look at Eastern Europe, when girls do physics it's just like doing cooking or sewing or whatever. It's nothing strange about physics and math and engineering for girls and women in other parts of the world. So cultures and contexts really make a difference.

And you can turn these truths, these fundamental truths into questions about your situation if you're working students, it's like well, you know, what is the context? So you have a women in science group. That's great. That creates community, but what is the culture they're actually working with? What are you trying to deal with? Because maybe what you need is a healthy masculinity group as well.

Casual sexism is pervasive in Canada like it is elsewhere in society. I have used this slide on the left here many times in talks and it's very interesting to see whether it elicits laughter, I'll sometimes have a bunch of guys in engineering who will laugh out loud, that's hilarious. And then I'll have other groups and other audiences who will just look stony faced and will relate to it, I think.

And so the culture and the casual sexism is that it's just a joke. Girls in the lab, they cry. Or it's just an internet, or it's just a TV show. Here is a great space astrophysicist who works for the European Space Agency, a whole team put a robot on an asteroid, a tremendous achievement, a tremendous technical achievement, he goes on global television for an interview and he has this shirt on which has these hypersexualized women, cartoon images. And obviously social media took him to task. But would you feel comfortable working with that kind of – projecting that kind of image in the lab.



It's just a shirt. It's just a shirt. But it's also just a toy. It's just a phrase. It's just everything.

And so it's the thousand tiny hiccups that can really create a culture that says, you know what? I don't belong here and I'm going to give up. And that is a problem. And it leads to a sort of a culture that says it's OK to be derogatory. It's OK to be abusive. It's OK to use sexually inappropriate language.

And the cultures can be persistent. So frosh week is a great example. And yeah, OK, it's a big party. but it's kind of over the top and you know, it's even more than over the top it's sexist and violent and degrading and some of the stuff I've heard engineering students say has been really problematic, and it just kind of leads to extremely serious, devastating life impacting kinds of events that some of which make the news, but many of which go underreported. And we know misogyny at work in Canada is extensive and loud. We know that these things are going on and often they don't reach levels where we can actually hold people accountable.

So we need to be addressing the culture. We need to be supporting our students in STEM, but we also need to be addressing the culture.

This is from Waterloo, the University of Waterloo. Just last year. I'm a first year female engineering student trying to help some guys with a math concept, but they didn't like the fact that I knew what I was doing and they turned their backs. So this student, looking for tips on putting up with being constantly dismissed and looked over for being a girl.

So you know, just a year ago on a Reddit thread.

Waterloo has actually tried to address this by addressing culture and looking at, for instance, what does it mean to be a young man in engineering? Why do we have this weird frosh culture in Canada? It doesn't exist where I come from. So what does it mean to be a young man in engineering? What does it mean to be a young woman in engineering? But particularly let's talk about social constructs of masculinity. And I really am a big proponent of addressing culture and context and bringing these people into the conversation and really helping people to develop self-awareness. To shift the focus from the deficit model of fixing girls, to developing healthy behaviours and attitudes in boys in STEM. That would really be a huge step forward.

And I pick on engineering a lot because we have a lot of data on engineering, but we've well established cultural bullying in medicine, long history in chemistry, to their credit now really beginning to address some of the kind of mean culture in chemistry.

And this is just an example in physics from a colleague at Carleton who reports that she heard respected scientists, so she overheard respected scientists who went Donna Strickland won her Nobel Prize for physics, his comment was, he's surprised because another world-class renowned male optics expert had been overlooked, maybe because he was not a woman. The implication being obviously she didn't deserve it. She only gets it because she's a woman. This sort of political correctness gone mad.

And so just this culture that says all the time, you're not good enough. You shouldn't be here.

Why is this a problem in science particularly? Well it's a problem in science because scientists base their professional identities on being objective and forgetting that we're human. And we looked to the social sciences. We looked at humanities. We looked at behavioural psychology and behavioural economics to understand how humans behave. And scientists are very resistant to accepting and believing the data and evidence in support of gender bias. They maintain a firm belief in meritocracy, which we all know is a myth. And despite the ample evidence that there is bias they hang on to this concept that they are objective.

So I've had many colleagues say, I never look at gender when I'm looking at a CV. If a student's going to come work in my lab for the summer, I just pick the best student.

Well they don't. We all are human beings so we all have biases. I've had lots of colleagues say, I don't see colour. Which you know, this lack of self-awareness is considered to be sort of a positive characteristic. It's we're objective as scientists. Well if you work understanding that you're human and you could actually calibrate against the biases that we all have, you'd actually truly be heading towards more objectivity.

So it's sometimes a real challenge to deal with scientists and engineers and science students who will pick this up as well, because this concept of objectivity and separateness from the world is something that defines them as being a scientist.

Scientists and engineers are products of their environment. Opinions, attitudes, political leanings will influence behaviours. This should not surprise any of us.

I collect stories. I have been giving talks across the country for many years now and every time I would go to give a talk at an institution, at the college, university, a division, a department, I – somebody would come up to me afterwards and they would tell me their story. And this page is just two years' worth, 2015-2017, of things people told me in Canada that they had experienced. Not always women, not – often they are white

women with a lot of privilege. White women in science can be incredibly bullying. White women in science can be part of the problem. There's a lot of internalized patriarchy amongst white women in science.

But there is a persistent culture that says, hmm, not sure you should be here. Maybe you should drop out and enrol in the arts and find a husband. I like you in the lab because you work harder and I can pay you less.

And I just want to focus on the last one here because this is actually the last couple of years. This is the last 12 months. Demeaning, belittling language by peers leading to personality clashes or breakdown which resulted in a graduate student leaving violent visual images on another student's desk. Male students harassing and leaving violent images on the desk.

The sexual harassment – persistent sexual harassment leading to limited time doing lab work. Coerced sexual activity in the lab facilities after hours. And sexual assault on field courses.

So you won't have heard of these, they don't make the press. But I think it's really clear that we need to be honest about what is going on and what the cultures are that some of our students and people are dealing with.

I'm aware that there are some people who have signed up and who may be on this call for whom this list of experiences may be very affecting. So Anoodth and I decided that at this point we would take a break just to let everybody maybe catch their breath, get a drink of water and just sit with some of those feelings because I know this can be very triggering and very difficult and painful for some people who may be listening in.

So I'm just going to take a short break here for people just to take a breath.

OK. So if I can bring everybody back. I also want to let you know that I'm available if you want to reach out, talk to me, DM me, I'm on Twitter, I'm on social media. There are people out there to support you and to listen to your experiences. Can't always find solutions but certainly there is a network that is very committed to supporting people in science, young people, trainees, students in particular in science.

OK. I want to move on a little bit to what can you do if, say, you're working in the student services professions, you're one of those individuals, what can you do in terms of actually addressing issues of gender-based violence in STEM?

And I think one of the first things is to acknowledge that it exists. This is a reality, my dean of science friend, who is a very good person, said to me, I had no idea any of this had happened. That's the first step.

Yeah, it happens. We like to think of Canada as being very progressive and very diverse as our strength. But the reality is we're still human beings and are flawed and fallible and we have a culture. We have an exclusionary societal culture for women in STEM. Just look at how we gender stereotype our children. Go into any clothing store, go into any toy store and look at the toys, look at the books, look at the clothes and how we gender stereotype our children. The message is that the girls and boys are getting – start before they're born.

I think it's also really important to recognize that the practice, the discipline of science across the different sciences is perhaps a little bit conducive to high risk or more riskier kinds of settings. So lab work can involve long hours in the lab, in – or you know, you need to go use a telescope or you need to go to a computer lab, there might be long hours there with small numbers of people. Some of those facilities might have restricted access. You need to go use the telescope, well it's not going to be hundreds of people there. You need to go use the microscope room.

And this can be problematic.

And so the lab work or the field work can be context that can be conducive to gender-based violence.

Summer internships is another place where those long hours, time out in the field might be a factor. And they are very heretical structures. So undergraduates working for graduate students. Graduate students working for postdocs. Postdocs working for professors. Hierarchical structures, enormous power imbalances and not very clear mechanisms of what to do when problems come up.

Science is full of opportunities for abuse. Dark rooms, microscope rooms, computer labs, field work. What is the department program? What are people putting in place to protect against gender-based violence in these kinds of situations?

Field stations locations can be very remote. You may be out there with one or two other people, maybe one other person, there could be extended time away from others. Students going up to the arctic to work, going out into remote locations, or even working in field locations close to home but in very isolated or in very small groups with very little in the way of training around what does gender-based violence, what does sexual harassment actually mean?

And this is for everybody. This is for men and women. And field sciences, the geosciences, the environmental sciences, the field biology

have a significant recorded history of abuse. Not so much in Canada because we don't keep track of it. But certainly the US and other parts of the world, lots and lots of recorded issues around field work.

Power imbalances. And the other one I put here is conferences. So not exclusive to science, but conferences are a place where I've worked really hard to get science to start paying attention to codes of conduct, and I know within the last couple of years of situations where alcohol and a mix of sort of demographics in terms of trainees, young people, students at risk have led to high-risk situations. I've had a colleague have to step in and actually physically extract a student who was being sexually harassed from a social function happening at a conference.

So these are situations that can be highly problematic. And science and engineering we do a lot of conferences. We love our conferences. So we need to be really aware about those things and make sure that people have the core competencies and the skill sets, and that the structures are set up to ensure that the cultures are cultures of care.

What can you do? Acknowledge it's real, acknowledge that there is precedent data. There's a ton of evidence. Believe those that share the stories. There's a lot of gas lighting that goes on. You must have misunderstood. I was told that. I was told I must have misunderstood what somebody meant when they continually kept asking me to go out for drinks and they would tell other people in the research institute where I was working what they wanted to do to me, where, and in what part of the research institute.

I don't think I misunderstood any of that, but I was told that by several people.

There's contradicting messaging. It's just a joke. You just misunderstood, you can't take a joke. People are always going to say nasty things, you need to get over it. That's a reality.

And I think particularly in Canada I would say be prepared for epic levels of ignorance on the topic of GBV in STEM. I mean we just are not talking about it. This is the first time I've talked about GBV in STEM in Canada and I've given 300 talks in the last many years on equity, diversity and inclusion.

So we really are not talking about it. And we don't have the skills. We're not – we're still building out the core competencies in both men and women in STEM.

Please be aware of the intersectional aspects. White women in STEM, a bit of a history of bullying. There can be sexual harassment from women

and white women in STEM need to be part of the solution just like the rest of the population.

Be prepared for the myth of objectivity by scientists and engineers. We're human beings. Not evil people. We're human beings, we're flawed and fallible.

And really work towards cultures of care. So there's quite a lot of scholarship around developing cultures of care. A lot of it's coming out of medicine. How can we develop cultures of care? What does that look like? What are the organizational structures that we need?

And I'm a big fan right now, and I get asked a lot about this, what can I do if I see something happening to my friend? Bystander training, allyship training. I've been asked a lot by young men in science, actually, around what can I do? How do I deal with a sexist comment? How do I deal with my friend being continually harassed? So I think there's a capacity there. Healthy masculinity training. Graduate school is a huge area of attention that I think we need to be looking at.

And core competencies for faculty. And expect resistance. Because people don't like to be told this is going on and they don't like to be told that they have to do some work.

We really need leadership, and I want to just make a shout-out to Kirsty Duncan who was the Minister of Science, who really put these issues and issues of equity in science on the radar when she was the Minister of Science. And I think we wouldn't be having some of these conversations had there not been leadership at the top that was backed by money. Universities were held accountable in terms of the research culture in STEM, because there was money at risk.

And so we need leadership from the top. We need leadership at the level – at all levels, but we definitely need leadership from academic leaders, we need university leaders, college leaders to say we're going to deal with this. And if we don't deal with it there are going to be consequences and accountability.

Thank you very much for your attention and finally be brave. Don't try to be perfect, just be brave.

So I'm going to hand it back to you now, OK?

Anoodth: Perfect. Thank you Dr. Coe. And now I'd like our attendees to ask any questions and comments and you can do so by typing these into the chat box or into the Q&A box at the bottom of the screen.

OK, wonderful. I can see that we have some already. So Dr. Coe your first question is, what if a department or faculty or another unit wants to

promote Women in Science types of events and asks for our help as student services professionals?

Dr. Coe: Yeah, that's a great question, and I get asked quite a lot for that kind of you know, to provide help or to have my input. And I think there's a lot of value in creating community. I think networking is really important in finding support amongst your peers, particularly if you're in perhaps physics or math where you may be one of very few women in a class or in a cohort.

So I think as a student services professional that's a really good idea to help that. I would also ask the question, though, what is it like? What is the culture like? What are your – you know, how are you treated in the lab? We saw in that slide from that student at Waterloo, when you're the only girl in the lab or the only girl in the class it can be quite isolating. And so creating community is a great thing.

But what else can we do? You know, maybe what else do you think we could do? What else would be useful in terms of improving the culture and the context?

So I think just asking that question and just raising that as an issue, because we spend so much time focusing on fixing girls or you know, women in science, and really we need to be talking about, you know, cultures of care in science for everybody. Queer men in science. Transgendered women in science. Students from different backgrounds in science. So I think it's – we can support communities but we can also make it broader.

Anoodth: Thank you. And thank you as well for the advice on how to build those cultures of care. So our next question is from a scientist in our audience, they are working in a new academic leadership EDI role in their faculty and they're interested in hearing more from you, Dr. Coe, how you acquired your EDI expertise and what you might suggest to a scientist interested in expanding their knowledge and expertise.

Dr. Coe: That's a great question. I get asked that a lot, actually. How come you're doing all this kind of social justice work, or sometimes it'll be what kind of feminaxi are you? You should be a scientist.

It goes back to being raised with a strong set of values around social justice. So I've never not been somebody who paid attention to the way structures were including people or excluding people.

So I can go back to as a child noticing that girls and boys were selected and sent to do different things. Sewing for me and woodworking for my brother. And that didn't make sense to me. So I became – I was always interested – I always want to know why.

So it comes from a curiosity. It comes from being a scientist and wanting to know why things are the way they are.

So I have done a lot of work. It takes work. You have to read into the social sciences. You have to study the experts. You have to take the courses. You have to actually do a lot of the work, do a lot of the reading. And I've done that over the last, you know, 30 or 40 years, to really try to educate myself on issues around bias. And more recently on issues around colonization and reconciliation and that kind of thing.

So I think it's a whole area of scholarship. I mean I think I could probably – I think I probably have done enough scholarship to create another PhD. Which is why I think it's really important to recognize that just because you're a woman in science doesn't make you an expert on gender-based violence in science.

So I think you have to do the work. Sign up for every course you can find and go to every seminar or webinar you can find. Do the work. Learn the language. Read the social scientists. Learn about intersectional, feminist, anti-racist theory. Read Roxane Gay. You know. Read Racheal Cargle. Follow her on Instagram. Really immerse yourself and do the work.

So it takes time, and the problem in science is there's no credit for this. You don't get any rewards for this. It's not part of the sort of traditional metrics so you have to be willing to do it in addition to a scientific academic career. Unless you're being hired as an EDI specialist. But then if you move out of being a credible scientist then you get caught between these two worlds.

So do the work.

Anoodth: Great. Thank you Dr. Coe. So our next question is from a postdoc student. And they've asked if there's any data about postdoctoral students being targeted by these violent experiences because postdoctoral students are even more vulnerable than other students because they're moving towards the job market and they may be in more precarious or vulnerable situations. And they may also have, sorry, less defensive institutions.

Dr. Coe: Yes. So postdoctoral fellows is a very vulnerable sector. I think graduate students are a vulnerable sector where I've heard a lot of stories. So postdoctoral – that postdoctoral sort of segment we have really very little data in science in Canada.

But I think if you look at the report, the big US report and if you look at some of the data that come out of the UK and still a bit of data of – out of Australia, you can see that yes, there is evidence particularly for abuses – hierarchical power imbalance based abuses at the postdoctoral level.



So the fear of retribution is very real. One of the first public things I did was actually respond to a letter in Science which said my postdoc advisor keeps looking down my shirt. What should I do? And the advice, this was an advice column in the Science journal, the advice that came back from Alice Wang, who is a very senior, very prominent, very celebrated Asian woman scientist was that's too bad but try and put up with it. And so I wrote a letter that took off around the world and – no, nobody should have to put up with that. But there's a great fear of retribution.

So I think again it comes back to the context and the culture. So institutions that are hiring postdocs have an obligation to be putting things in place that protect them.

And what are the structures in place? What are the policies in place? What is it that your institution or your particular area is doing that is protective? And if there isn't something happening then it needs to be raised.

It's hard for postdocs to do that. So that's why we need people trained with core competencies and expectations of leaders to be doing these things.

But yes we need to be looking at postdoctoral fellows because that is a vulnerable sector of society.

Anoodth: Wonderful. Thank you. We have a couple more questions. So what are your recommendations then for policy makers, particularly in terms of engaging men and boys in conversations around violence in STEM?

Dr. Coe: So I think there's some good work being done around engineering and frosh week. I don't know if University of Waterloo is still doing their healthy masculinities, but when they were running them those were – those were sort of programs, workshops that were led by experts. So bring in the masculinity – healthy masculinity experts. This is not something that a man in STEM is going to run. Bring in the experts, offer them for free, and last time I heard about them or talked about them with somebody was a couple of years ago they were oversubscribed and they had to bring in more.

So there's definitely interest in capacity. So I'm a big kind of fan of that kind of approach. There are a number of organizations. Promundo is very good. The White Ribbon Campaign also talks about healthy masculinity. Bring in people who are experts and make them available.

I would also encourage champions in your departments or in your institutions to actually say things out loud. And I'll give you an example of where this made a difference.

We had, at Ryerson, a nasty incident with computer science students who were quite abusive to women in computer science labs to the extent that they physically got up and left. There were also homophobic comments. I asked – and when I was dean I asked the chairs of computer science, chemistry and biology, and physics probably, to speak to their classes. I asked men specifically, would you speak to your classes and say we have a zero tolerance for this kind of behaviour in this faculty. We have a zero tolerance, we will not put up with it. Because I need a man to say that to a class that has male students in it.

My chemistry and biology professors, yeah, of course we'll do that. No problem. I would even give them a script if they need it. And they did, and for the most part the students in those classes kind of said, yeah, OK, we get that.

My computer science faculty really struggled with that. Couldn't do it. Even with a script, were uncomfortable, it was not something that was familiar to them. But you need to get men engaged in talking to men.

I'll also say that the Ontario Society for Professional Engineers, the professional engineers are really very engaged in this. And I will say that if the employers would come in and say we don't want computer science students that graduate who don't get this. We don't want engineers who graduate who don't understand societal issues. That would be really helpful.

So having potential future employers come back and say, this is a core competency you boys, you men need to have. We're looking for that just as much as we're looking for your technical skills. That would be really helpful as well.

Slow to do that in Canada.

Anoodth: Absolutely. Thank you. And so our next question is just a recognition that this is an issue that hasn't been researched very much and Dr. Coe can you give some other examples of perhaps actions that have been taken in other jurisdictions?

Dr. Coe: Actions of? Sorry. I missed the last part of what you said.

Anoodth: The question was around examples of actions in other jurisdictions. So I imagine those are probably resources aimed at tackling this.

Dr. Coe: Right. So I think – there's a couple of ways you can incentivize the behaviours you want, and – or and, you can have consequences for the behaviours you don't want.

So in the US there is a process called Title IX, which is a mechanism, a policy structure that says if an institution has been found guilty of

creating an environment that allows sexual harassment of gender-based violence to happen, they will lose money.

Title IX is not perfect, but it does work in some circumstances that it allows universities to actually hold people accountable for really bad behaviour.

We don't have – we don't have a Title IX in Canada, but we could have stronger policies in place to hold institutions accountable. And right now in sciences we're really doing that at the federal level, because the federal government will say, we'll withdraw your research money and scientists, engineers don't like that.

Institutions, universities sit under provincial jurisdiction, provincial mandate. They sit education as the provincial mandate. So between the provinces there can be all sorts of different kinds of approaches to dealing with this.

So, the – how you deal with these particular issues is going to be very jurisdiction dependent. Context dependent. What you can do at your institution may depend on what kind of union structure you have. It could be very, very difficult to hold faculty accountable because they are protected by collective agreement in terms of their employment. So it can be very difficult. Which is why we want to create cultures of care so we want to, you know, focus on preventive approaches.

In other jurisdictions it can be easier if somebody isn't protected by a particular, you know, type of agreement. Academic freedom is used as a cover for all sorts of bad behaviour, which is too bad because we need academic freedom.

So it's a – you know this toolkit – toolkit of incentives, consequences, accountability, core competencies really. If people had the skill set and knew how to behave then we'd be better off.

Anoodth: Thank you Dr. Coe. So Marina was wondering if you knew of any specific data around gender-based violence in STEM students.

Dr. Coe: In Canada, I don't think – I'm not aware of gender-based violence in science for students, I'm not aware of data that we have in Canada. There is some data in the US and there are some – there's some reporting in the UK. But we're – you know, we're very data poor in Canada. There's lots of anecdotal data. There's lots of qualitative reporting. There's some data that the NSERC team has put together that I can – I think I added it to the list of resources, much of that is kind of not student level.

So no, we don't have good data. Sorry.

Anoodth: Thank you. And I think we've time for one more question. So this question is from Lisa and Lisa was saying thank you for sharing your insights and there's a lot to do around learning and taking action. And noting too that it's challenging work. There's a lot of opportunities. So the question is how are we creating learning opportunities for STEM professionals in research institutions and what recommendations do you have about getting this learning started strategically within organizations.

So I think you might have touched upon it earlier as well.

Dr. Imogen: I think I talked about this a little bit. So hi Lisa. Nice to see you behind the screen there. I hope our paths pass in real life eventually one of these days.

So I think there's a lot of work going on but it's very uneven across the disciplines. So that's why STEM is often not somewhere where we hear a lot of stuff that's being led by the dean or the chairs or whatever around EDI initiatives. So a lot of it is being driven by students who want to learn more. Which is why I think the core competencies piece is really important. If we can get more educational opportunities through student societies, through graduate student societies, postdoctoral organizations, learning how to develop these skills around EDI, that's probably where we're going to get the biggest value for money.

It's – the faculty in science and engineering is very resistant to learning these things. There are some incentives being pushed by the research funding agencies, so NSERC and so on are now expecting much more awareness, and you have to demonstrate that awareness. So we're beginning to see some shifts there.

But I would – you know, as we continue to appoint middle aged, middle class straight white guys as our presidents and as our VPs and stuff it really has got to come from the top. And it's got to be that we're creating a culture of inclusive excellence. So it doesn't matter what discipline you are, but in terms of academia or the postsecondary sector, we have a culture of care and a culture of inclusive excellence that says, yeah you're going to be great at science, but you're also going to have these skill sets. You're going to be great at history, you're going to have these skill sets. You're going to be great at kinesiology and you're going to have these skill sets.

So it becomes the fabric of the organization. And we're really not there. We're seeing it as an add-on at the side. We're seeing it as something that you know, is nice to have, but not absolutely necessary to have.

And so I think you know, again it's the system's approach. You need inputs at all of the systems. Right now I would focus on the student – for student professionals I would focus on opportunities for learning amongst student societies, science student societies, by standard

training, allyship training, you know, even the vocabulary of GBV what does it mean? What does inclusive excellence mean in science? The history of sexism and racism in science. The decolonization of science. Indigenous science and ways of knowing. And how they are complementary and so valuable.

And I think those opportunities with the student level, graduate student postdoc are probably where we're going to see – we're going to be able to affect impact.

And really learning about intersectionality, you know, we've got a lot of work to do where a big chunk of the discipline around even what does intersectionality mean? And so lots of work to do.

Anoodth: Great. Thank you Dr. Coe. So I think that takes us to the end of our talk today. We've had a really good discussion. And as you've mentioned this is a big breaking conversation. It's one of the first conversations around addressing GBV and STEM in Canada. So thank you to Dr. Coe for joining us and for showing us how to build those cultures of care and those cultures of institutional excellence in STEM.

We've learned a lot so the recording and transcript will be available on our website in a few days.

And I also want to thank our participants for joining us and for sharing with us today. We really appreciate and take inspiration from your commitment to addressing and preventing gender-based violence on campus. And we feel very lucky to be able to work alongside each and every one of you.

So thank you everyone. And a gentle reminder to please complete the evaluation forms. And we will see you at the next webinar on Friday, September 25th.

Bye everyone. Take care.

Dr. Imogen: Thank you.