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**The Next 150 years of Science in Canada: Embedding Equity, Delivering Diversity**

Organized by: Imogen Coe, Professor; Dean, Faculty of Science, Ryerson University

Speakers: Shohini Ghose, Founding Director, Centre for Women in Science, Wilfrid Laurier University; Melanie Goodchild, Research Associate, Waterloo Institute for Social Innovation and Resilience (WISIR), University of Waterloo; Hilary Lappin-Scott, Senior Pro-Vice-Chancellor, Swansea University; Mahadeo Sukhai, Head of Research, CNIB; Luc Villeneuve, Canada Country Manager and General Manager, Red Hat Canada

Moderator: Imogen Coe, Professor; Dean, Faculty of Science, Ryerson University

**Takeaways and recommendations**

**Ideas to increase EDI in Canada**

* Canada needs a national strategy for EDI (Equity, Diversity and Inclusion).
* There should be more events where under-represented groups can share their stories and gain confidence (e.g. the Soapbox Science program).
* The UK Athena SWAN program is an excellent model for achieving real change when it comes to gender and diversity goals.
* It is not just about achieving EDI goals for their own sake; the program has been shown to lead to improved research outputs and other traditional measures of excellence.
* More Canadian data on diversity issues is needed to understand what is changing.

**Re-frame the dialogue**

* EDI is about more than “women in science” or gender equity– it’s about diversity and inclusion, broadly. It is an issue of human rights, not women’s rights.
* EDI is also an economic imperative – we need all minds at the table to be a creative, innovative and productive society.
* Men and people from majority groups need to participate in this culture change by showing leadership, supporting under-represented groups and engaging actively in the conversation (while knowing when to stop talking and listen).
* Disability is among a range of human variations and we should re-frame the conversation around functional limitations rather than pathologies.
* The humanities in science should be valued (i.e. STEM -> STEAM). Science gives us information and data, and the arts give us context and meaning.

**Increase the visibility of under-represented groups**

* All people, including women, minorities and people with disabilities, need to be viewed as belonging in STEM professions.
* The number of scientists from under-represented groups celebrated in the school curriculum and generally within the Canadian context should be increased to properly acknowledge their role (so often ignored and forgotten) and to normalize the notion that scientists are from everywhere and all backgrounds.
* Re-work the curriculum to include a more diverse history of science beyond the European and North American context.
* Institutions in Canada should participate in more international events and celebrations (e.g. Ada Lovelace Day and International Women in Engineering Day).

**Improve the education system**

* Consider the impact of unconscious bias in education and train teachers to recognize it.
* Teach kids about colonialism and its effects in school.
* Recognize the non-linear nature of science and adapt the curriculum to reflect this.
* Teach young people, especially those who don’t fit into the dominant culture, bravery and resilience. Feed their love of growth and discovery.
* Re-think the questions of “what is science” and “who is science for” and who this excludes (e.g. we currently teach science in very visually dependent way, so it is often perceived that those who are blind or partially sighted cannot be scientists).
* Value that people have different kinds of abilities to bring to STEM (e.g. sign language has been found to be very effective in teaching certain concepts).
* Educate teachers on the power they have on people’s careers. If they discourage children from pursuing certain subjects after a certain age, the student may become dissuaded from following any path and simply drop out.
* Consider Indigenous perspectives when attempting to design and implement STEM programming in Indigenous communities or it will not be successful. Some of the elements to consider:
	+ English as a language affects how we perceive and interact with our world and tends to alienate many Indigenous people from pursuing subjects like STEM.
	+ Classroom settings take students off the land and do not honour land-based knowledge.
	+ Spirituality is often left out of the classroom experience.
* Ideas to combat these issues can come from Indigenous knowledge and communities. They should be part of the development process from the beginning.

**Change the default thinking in organizations**

* Be intentional about all levels of hiring and programming – internships, management, staff, etc. – and embed EDI principles at all stages.
* Provide unconscious bias and EDI training to everyone – institution wide. Ensure ageism is also part of this conversation.
* Providing bystander training is important as it gives people the tools and skills to intervene in situations that may be targeting or triggering to certain groups.
* Be conscious of how language is used. For example, do not think of it as an accessibility plan, but rather an inclusiveness plan. The question should not be “how do we accommodate” but “how do we ensure everyone is engaged?”

**Change the institutional culture**

* A person working or studying in an institution should feel comfortable bringing their whole self. This allows them to work their hardest/best to greater economic and social benefit.
* Actively consider what it feels like to be in an institution:
	+ What normal behaviours might be excluding people (e.g. is it OK to talk about children)?
	+ What messages does the physical space send (e.g. are the hallways decorated with pictures of white men)?
* Institutions should be explicit about their values and include EDI commitments in those values.
* Institutions developing reconciliation approaches need to involve representatives from the appropriate Indigenous community from the beginning – it will not work to insert them in later or bring them on as experts when the development is already three—quarters done.
* These processes have to be trauma-informed and those who are creating them within institutions have to be ready for and respectful of anger, and ready to hear and listen to differing opinions and perspectives.

**Reduce the “minority tax”**

* People from under-represented groups often have many burdens on their time and it can be exhausting and stressful to be the “lone voice” of a community.
* To reduce overburdening the same individuals by repeatedly calling on them, develop a wide and diverse pool from which to choose for committees, panels, boards, etc. Cultivate a list of willing participants over time that you can draw from, and that you can share with others if they make the claim that “diversity is too difficult”.
* Ask people to participate based on what they know – i.e. their subject matter expertise – and not what you think they might be or be like based on labels or categories you are trying to fill.
* Value these extra efforts and/or roles with direct rewards like promotion, monetary compensation or awards.
* Train all committee/board members in EDI so that everyone shares the responsibility of ensuring any decisions or outcomes are diverse and equitable.

**Direct grant money to researchers engaging in EDI**

* Tri-councils must enact policies that ensure all grants promote the importance of EDI; explicitly include ranking and reward for researchers who embed them in their proposals.
* There has to accountability and consequences if reviewers are not properly ranking or respecting EDI criteria.
* Instruct grant committees that embedding EDI principles in a proposal is a sign of merit and strength in research, and not just the “politically correct” thing to do.
* Ensure reviewers take a module on respecting and rewarding EDI (NSERC currently offers this in some cases) and include unconscious bias training.
* Individuals must participate in EDI training to sit on review panels.

**Responsibilities of individuals within institutions**

* Acknowledge your relative privileges and actively consider how you can change the culture around you.
* Be empathetic to the situation of others and call out bad behavior if/when you feel safe doing so (be bold!).
* If you find yourself in a position of relative power, learn to share your platforms (professional and otherwise) with people who have different worldviews.
* Make space, move over, listen to differing voices and make room for others.
* Become a coach – give time intentionally and regularly to encourage people and, if relevant, help them become visible to those in positions of power (management, etc.)