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**Transitioning to University: Indigenous Perspectives on Post-Secondary Mathematics**  
**La transition vers l'université : Perspectives autochtones sur les mathématiques postsecondaires**  
(Org: **Darja Barr** (Manitoba), **Benoit Dionne** (Ottawa) and/et **Emily McKinnon** (Manitoba))

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**MELANIA ALVAREZ**, UBC Department of Mathematics/PIMS

*Addressing Mathematical Inequity in Indigenous Education:*

In order to positively narrow the educational gap between the Indigenous communities and the rest of the population, there needs to be a continuous and long-term intervention for change. In the case of schooling, we should be working with the Indigenous communities to look at a long-term continuum of choices and to present opportunities and positive interventions that provide students with a more affirmative outlook for life. The Pacific Institute for the Mathematical Sciences (PIMS) has recognized the challenges many students face if they lack the necessary prerequisites in math and science to pursue post-secondary studies (especially in STEM fields), specifically when it comes to Indigenous students and other students at risk. By leaving behind the philosophy of reduced expectations, mathematical scientists and educators associated with PIMS have introduced a variety of interesting and challenging programs. Our first step has been to build partnerships with elders and schools run by Indigenous communities, as well as with urban public schools with a high concentration of at-risk students. With their input and support, the PIMS outreach team has implemented a variety of programs, which will be described on this talk.

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**SHAWN DESAULNIERS**, University of Alberta

*Indigenization of Mathematics Courses for Teaching Candidates*

In this presentation, I will discuss a collaborative effort with the University of Alberta's Aboriginal Teacher Education Program (ATEP) to improve the math content knowledge of their teaching candidates.

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**ED DOOLITTLE**, University of Regina

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**MICHELLE HOGUE**, University of Lethbridge

*Indigenous Student Success Cohort Program: A Path to Enabling Indigenous Student Academic Success*

Traditionally, Indigenous ways of knowing and learning (IWKL) are relational, hands-on, and practical and knowledge is passed on orally through story, language, ceremony, and traditional practice. This way of learning often creates a challenge for Indigenous learners in the traditional Euro-Western system of compartmentalized, theory-first and written methodological approaches to teaching and learning. Nowhere is this truer than in the sciences and mathematics.

The Indigenous Student Success Cohort (ISSC) program at the University of Lethbridge (UofL) in Alberta, Canada is a well-recognized, successful first-year program that provides a solid academic foundation and skill set to enable Indigenous students to succeed in their degree of choice. Key to the success of the ISSC, is the bridging of Indigenous and Western cultures, the creation of community, a culturally relevant, highly interactive, learning, and supportive environment, and attention to Indigenous Ways of Knowing and Learning (IWKL). Our statistics show that Indigenous students who enter university through this program are retained to graduation at a 10% higher rate than any student (Indigenous or not) who enters through the traditional mainstream way. As such, the ISSC has become a model for other cohort programs at the UofL.

This presentation will be a sharing of our journey the ups and downs, and lessons learned.

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**VESELIN JUNGIC & ANTONIETA MAR-Y-PAZ RIVERA**, Simon Fraser University

*SFU Indigenous University Preparation Program: Past, Present, and Future*

Since 2007 the SFU Indigenous University Preparation Program has been welcoming First Nations, Métis and Inuit students to a university learning environment that affirms and integrates Indigenous knowledge and perspectives.

In this presentation we will briefly describe the program and list its main goals. We will also, discuss some of the past and present successes and challenges that students, instructors, and administrators involved in the program have experienced.

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**DIANA KLASSEN**, University of Manitoba  
*Mathematics in an Indigenous Engineering Program*

This session will introduce you to the Engineering Access Program (ENGAP) at the University of Manitoba. ENGAP provides academic and personal supports to First Nations, Non-status, Metis and Inuit students. Since mathematics forms an integral part of engineering studies, weaknesses in grade school and high school mathematics are examined, and solutions implemented by ENGAP will be shared.

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**VICTORIA MCINTOSH**,  
*The Connections with Indigenous Art/Math/Story/Creating*

This course will review the connection with Indigenous Art, Math, Story and Creations using the 4 r's of Indigenous learnings. The circles and dots within an Indigenous Art form connect with Math, story and creations, meaning the painting itself that will be created by the learners.

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**GORDON NAYLOR**, Maskwacis Education Schools Commission  
*Indigenous Students and High School Mathematics*

Tansi kahkiyaw, kitatamiskatinawaw (Hello everyone, I greet you all).

I am a proud member of the Muskoday First Nation and have been a math teacher in reserve schools for the past 8 years. I currently teach in Neyaskweyahk (Ermineskin Cree Nation, in Maskwacis, Alberta). I look to share some of my experiences and find out how to improve my practice to help give my students the best chance at accomplishing their dreams.

This presentation will look at historical and contemporary issues affecting Indigenous People's and western education, particularly issues surrounding mathematics education.

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**SAMAR SAFI-HARB**, University of Manitoba  
*Transitioning to University Life in Pursuit of Science: Barriers and Pathways to Indigenous Achievement*

Indigenous peoples are severely under-represented in STEM and this under-representation gets more enhanced as we go up the ladder in education. In this talk, I will highlight some of the barriers encountered by Indigenous students in Science education, and particularly in the Mathematical and Physical Sciences. I will then describe recent efforts led at the University of Manitoba (UofM) and in the Faculty of Science committed to creating pathways to Indigenous achievement. In particular, I highlight 'Wawatay', a new initiative in Science aimed at creating a supportive (academic, research, social and personal) path for Indigenous students in pursuit of a degree in Science at the UofM.

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**WANBDI WAKITA**,  
*Introduction and Elder Prayer*

Elder Wanbdi Wakita will offer some thoughts and a prayer following a brief introduction to the speakers, Art session, and panel discussion.

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**ANDERSON-SACKANEY, NAYLOR, KLASSEN, DOOLITTLE, WANBDI**,  
*Panel Discussion on Supporting Indigenous Students in their transition to University math*

How can university and high school instructors, administrators, and other stakeholders help to support Indigenous students to success in first-year university mathematics courses? This transition is arguably one of the most difficult in many students' university careers and outcomes in first year math courses may impact students' decisions to continue in science or or science-related fields (i.e. professional health programs). In this panel we will hear from some experts in helping Indigenous students to manage this transition. We can discuss specific challenges that Indigenous students might face, as well as ways to help engage them and motivate them in first-year math courses.