

The Ontario Colleges
Mathematics Association
38th Annual Conference



TOOLS OF THE TRADE



CONFERENCE PROGRAM

Fern Resort
Orillia, Ontario
May 23 to 25, 2018

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Vretta

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Wednesday, May 23

TIME	ACTIVITY	LOCATION
11 - 12:45	Registration and Light Lunch	Fireside 108
12:50	Welcome and Opening Remarks from the Executive	Bergwens
1:00 – 2:30 Speaker Session 1	<p style="text-align: center;">KEYNOTE SPEAKER</p> <p>Solving the Problem of Equality: How to Use Evidence-based Methods of Teaching to Close the Achievement Gap in Mathematics</p> <p>Wide differences in achievement among students appear to be natural in mathematics. In every school, in every country, only a minority of students are ever expected to excel at or love learning mathematics. But new research in cognitive science suggests that virtually every student is capable of learning math at a high level. I will discuss this research and its implications for our schools and our society. I will also present some methods of teaching mathematics (which can be applied in college classrooms) that have been shown to help all students become engaged and proficient learners. In a randomized controlled trial the mathematical knowledge of students taught by these methods grew twice as much as that of students in the control group.</p> <p><i>John Mighton, JUMP Math</i></p>	Bergwens
2:30 – 3:45 Speaker Session 2	<p>CONVERSATION CAFÉ</p> <p>Check out the presentations for the conference. Meet the presenters. Talk to poster presenters.</p>	Bergwens Lobby
3:55 – 4:25 These are repeated again for 4:30 – 5:00 Speaker Session 3 – 4	<i>Nelson</i>	Simcoe
	<i>Pearson</i>	Huronia
	<i>McGraw Hill</i>	Room 420
	<i>Vretta</i>	Bergwens
5:10 – 6:10	<p>Hospitality Suite (sponsored by McGraw-Hill Education)</p> 	Fireside 108
6:20 – 8:00	Dinner	Dining Room
8:00 – ???	<p>PUB(lisher) Night (sponsored by Pearson)</p> <p>Come on over to check out the publishers and vendors. The bar will be open!</p> 	Mary Lou's
9:30 – ???	<p>The Great OCMA Karaoke Challenge (sponsored by Pearson)</p> <p>Listen to some fantastic (and terrible) singing! Vote for your favourites! Get up and show off your talents! (And, yes, there are prizes!!)</p> 	Bergwens



Thursday, May 24

TIME	ACTIVITY	LOCATION
7:00 – 7:30	Walk/Run Activity Start the day with a walk/run! Meet at the Gazebo located at the front of the main lobby.	Gazebo
7:30 – 8:45	Breakfast	Dining Room
8:50 – 9:50 Speaker Session 5	<p>Technology tricks for Preparing Mathematics Materials: LaTeX, Wolfram Alpha, Mail-Merge and Word Fields</p> <p>This talk will focus on how technology can be used to enhance your productivity in preparing automated and robust course outlines, tests, and solutions. Several tools will be discussed: (1) Cloud-based "Share LaTeX" to write mathematical documents, including tests and presentations; (2) Wolfram Alpha and its capability to decode and solve LaTeX code; (3) Word's Mail-merge and fields to generate automated tests together with solutions. The beauty of these tools is that they do not require any sophisticated knowledge of coding. Everybody has access to them, and they are easy to use.</p> <p><i>Maksim Sokolov, Seneca College</i></p>	Simcoe
	<p>Remedial Mathematics Tools for Integrating Students</p> <p>There have been various approaches and tools that have been used to address the challenges for first-year college students who have been identified as at risk of not completing their first-year math course without additional support. We would like to host a discussion session on the topic of using different tools and approaches to increase the rate of success for this group of students. We look forward to discussing the efficacy of different math tools in integrating these students successfully into business, tech, trades & health programs.</p> <p><i>Erin Kox, Fanshawe College; Betty Pratt, Seneca College</i></p>	Huron
	<p>Reducing Math Anxiety: a look at resources for your classroom</p> <p>Join a group in this workshop to review and assess resources that can be used to help reduce students' math anxiety. We will discuss various topics, including myths of learning mathematics, working memory, mindfulness, positive affirmations, and expressive writing. This is a more hands-on facilitation compared to the OCMA February PD workshop. I hope you join me in trying to demystify this complex cognitive phenomenon!</p> <p><i>Stephanie McKean, George Brown College</i></p>	Room 420

Thursday, May 24, continues

10 – 11 Speaker Session 6	<p>Abacus to Spreadsheets</p> <p>The workplace is continually adapting to accept new technologies and our classrooms need to reflect these changes to remain relevant in the post-secondary education sector. In addition to using financial calculators to tackle finance math problems, we use spreadsheets as part of the Tools of the Trade for our business and finance math students. Through this session, we would like to invite business/finance math faculty to join us for a discussion on the creative applications of integrating technology and using spreadsheets, in class and online, to prepare students for success in the workforce.</p> <p><i>Lisa MacKay and Paul Obour, Southern Alberta Institute of Technology</i></p>	Simcoe
	<p>The Physics of Martial Arts</p> <p>This session is about practical examples of mathematical and physics principles used in the martial arts, including the physics of striking, throwing and breaking.</p> <p><i>Trevor Warren, Confederation College</i></p>	Huronia
	<p>Implementing Technologies in the Mathematics Classroom in Ontario Colleges</p> <p>While integrating technology into the classroom has its challenges, some educators believe that using technology creates opportunities for enhancing students' processing and retaining information. This presentation is about a study on how technology was integrated into college mathematics classrooms. The study used a qualitative methodology to investigate the perspectives of 65 mathematics instructors and 18 academic administrators at 17 Ontario colleges. It investigated what technologies were effective and what can be better used. The research findings may help develop more practical curricula which could be incorporated into multimedia, interactive models, web based technology, simulations, and practical tutoring and homework systems.</p> <p><i>Christine Tsou, University of Windsor; Emily Brown, Sheridan College</i></p>	Room 420

Thursday, May 24, continues

11:10 – 12:10 Speaker Session 7	<p>The Eye of Mathematics ... A Follow-Up</p> <p>Last conference I introduced “The Eye of Mathematics”, a course that challenged students to demonstrate a foundational understanding of the origins, derivation, and utility of some key building blocks in mathematics. Two semesters and four sections later, this session is about what happened – successes, student reaction, time and logistics, outcomes, failures.</p> <p><i>Josh Schneider, Sheridan College</i></p>	Simcoe
	<p>Update on the Progress of the OCMT-Math Assessment for Student Success in Ontario</p> <p>Over the past year, the OCMT has continued to be used as a placement system to diagnose and stream students into math courses and raise their level of numeracy in academic upgrading courses. However, the OCMT is more than just a placement tool. Since its official launch, a parallel assessment item database: the informal OCMT, has been developed through collaboration with Ontario college math faculty. In the fall of 2017, this database became available for use in preparing students for success in their college math courses. Also, a series of technology developments has allowed the OCMT to evolve and better meet the needs of faculty as they support their students. This session provides an update on all this.</p> <p><i>Paula Gouveia and Mona Nouroozifar, Humber College; Anand Karat, Vretta</i></p>	Huronia
	<p>Building the Infinite Staircase and Other Absurd Mathematical Constructions</p> <p>What tools are needed to build an infinite staircase? An infinitely-durable hammer? Infinitely many nails? An infinite quantity of wood from infinitely many trees? As it turns out, we only need a fraction of one tree - a single sheet of paper - along with a little math... and some perspective. In fact, the tools of mathematics are so fantastic they allow us to construct every manner of absurdity, from infinite balls to bounce down the infinite staircase, to an infinite hotel at the bottom of the infinite staircase, to an infinite casino in the lobby of the infinite hotel (of course!), to the saxophone with infinite surface area (but finite volume!) belonging to the infinite casino's lounge musician, and so on and so forth... ad infinitum! Come explore the absurdly-artistic, beautifully-bizarre, and conundrumous creations of the mathematical masons of the infinite!</p> <p><i>Sean Saunders, Sheridan College</i></p>	Room 420
12:15 – 1:45	Lunch	Dining Room
2:00 – 5:00	<p>Inter-Active Activities : See the <i>sign-up</i> sheets for activities, including: <i>Golf / Walking / Biking Trail/ Badminton/ Tennis/ Table Tennis/ Archery /Canoes / Kayaks / Paddle-boats/Mini-golf/Bocce / Horseshoes / Shuffleboard/ Archery</i> Complete the Math Problem Challenge</p> <p>PRIZES!!!!</p>	Outdoors
5:00 – 6:10	<p>Hospitality Suite (sponsored by McGraw-Hill Education)</p> <div style="text-align: right;">  </div>	Fireside 108
6:15 – 6:30	Group Photo	Gazebo
6:30 – 8:30	DINNER/ Annual General Meeting/ Reports from OAME, AMATYC	Dining Room
8:45 - ???	<p>The Grand Illusion – A Magical Presentation!</p> <p>Come on out to be mystified, puzzled, bewildered, baffled, confounded, floored, and amazed!!</p> <div style="text-align: right;">  </div>	Bergwens

Friday, May 25

TIME	ACTIVITY	LOCATION
7:00 – 7:30	Walk/Run Activity Start the day with a walk/run! Meet at the Gazebo located at the front of the main lobby.	Gazebo
7:30 – 8:45	Breakfast	Dining Room
8:50 – 9:50 Speaker Session 8	Research Possibilities This presentation is in response to questions about theoretical frameworks from an OCMA presentation last year. An overview of research methods used in education will be presented. The presentation will assume very little background in research and is intended to provide an understanding of the scope of options, major features of different approaches, and the connection of findings to theory. <i>Tim Sibbald, Nipissing University</i>	Room 420
	Strategies for Immediate Math Help In today's fast paced world, students engage in mathematics everywhere, and we as educators have to be ready to answer questions anywhere, at any time, and on any topic. Math Learning Centres are no stranger to this type of help. In this presentation, we will discuss training, techniques and apps that we arm our tutors with to be successful in this environment. Bring your device to interact in the presentation and try some of the apps yourself. <i>Cameron Redsell- Montgomerie and Srishta Chopra, Centennial College</i>	Simcoe
	Statistics for Health Sciences - A Custom Hybrid Resource for Ontario Colleges Following the standard and advanced Ontario College System Exemplar outlines for Mathematics for Health Sciences, Vretta has collaborated with Ontario college educators to design and develop a customized hybrid resource for Health Sciences students in statistics courses. In this presentation, we will showcase key features of this resource that have been created to help students connect abstract concepts to practical applications through real-world scenarios and simulations. <i>Elisa Romeo, Vretta; Sean Saunders, Sheridan College; Irene Lee, Humber College</i>	Huron

Friday, May 25, continues

TIME	ACTIVITY	LOCATION
10:00 – 11:00 Speaker Session 9	<p>Death to the Sage -- A Truly Flipped Learning Experience</p> <p>Modern pedagogies point to engaged learning being the single biggest way we can help our students succeed. In this session, we'll share a 'truly flipped' classroom experience with you, and discuss some of the practical do's and don'ts of encouraging independence and problem solving among our learners. Elizabeth will present one of her modules based on a 'real' course redesign in quality engineering. The 'online' component will be showing at Learning Café ahead of the session.</p> <p><i>Elizabeth Martin, Mohawk College</i></p>	Simcoe
	<p>Expanding Your Toolkit - Building Projects into Statistics Courses</p> <p>The incorporation of projects into introductory statistics courses has become a popular trend. But is it beneficial to students? Does it help students achieve the learning outcomes in the course more so than traditional instructor-led assignments? And if so, what are the parameters that maximize their effectiveness? In this session, we will unpack some of the findings of the research literature in this area and examine the success of a trial implementation of cumulative projects in the first-year statistics course in the pre-health sciences pathway program at Sheridan College. We will include some specific tips and strategies for optimizing the use of projects in your course, and how you can use them to support and enhance the assignments and evaluation tools you are already using in class. This session will also include time for discussion, so please come ready to discuss your successes (and failures) with the group!</p> <p><i>Sean Saunders, Sheridan College; Irene Lee, Humber College</i></p>	Huronia
	<p>Learning from the Outdoor Mathematics Project</p> <p>Together with Jill Lazarus, Tiberius Veres, and Carmen Wehrstedt, we worked on finding mathematics outdoors. In general, this was developing mathematics curriculum from our environment rather starting with mathematics concepts and units common for a high school to college curriculum progression. Is this approach valuable? Does this approach result in more meaningful mathematics curriculum in college programs? In this session, we will start with this project and then consider more general questions.</p> <p><i>Tim Sibbald, Nipissing University; Alan Warren, Lambton College</i></p>	Room 420
11:10 – 12:25 Speaker Session 10	<p>DISCUSSION KEYNOTE</p> <p>Let's Wrap Up</p> <p>What inspired you in this conference? What will you implement in the next classes you teach? What tools are you adding to your toolbox? Discuss and share with the rest of us your thoughts and insights.</p>	Bergwens
12:30 – 2:00	Lunch and Closing	Dining Room