# 9E PROGRAMME ANNUEL DE

# SALTISE

## 9TH ANNUAL PROGRAM


## LES TRANSFORMATIONS EN ENSEIGNEMENT:

Petits changements, grands impacts

## TEACHING TRANSFORMATIONS:

Small changes, big impact

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# About SALTISE

SALTISE - SUPPORTING ACTIVE LEARNING & TECHNOLOGICAL INNOVATION IN STUDIES OF EDUCATION is a professional learning community made up of educators from both English and French institutions within the Greater Montreal area, and beyond. Our community of post-secondary instructors, educational researchers, educational/faculty developers and instructional designers are brought together because of our shared goals of advancing evidence-based pedagogies and educational technologies to promote deeper learning, which in turn closes achievement gaps, supports students' academic success and perseverance through the post-secondary levels.

SALTISE owes its development and expansion to the financial support of the Entente Canada-Québec (ECQ), funded through the Ministre de l'Éducation et de l'Enseignement supérieur. It extends its resource development, knowledge mobilization innovations and community-based efforts to over 1500 educators. Its expanding website (https://www.saltise.ca/) consists of dozens of resources and tools that support the implementation of instructional innovations; as well as aims to provide a venue for our community to make connections and engage in conversations around topics of educational research and practice. The SALTISE annual conference hosts international and national scholars, and provides opportunities for local experts to share best practices in the area of active learning pedagogy and the use of technology. To learn more, go to https://www.saltise.ca/about/about-us/

# À propos de SALTISE

SALTISE - SUPPORTING ACTIVE LEARNING & TECHNOLOGICAL INNOVATION IN STUDIES OF EDUCATION (SOUTENIR L'APPRENTISSAGE ACTIF ET L'INNOVATION TECHNOPÉDAGOGIQUE PAR LA RECHERCHE EN ÉDUCATION) est une communauté d'apprentissage professionnelle composée d'éducateurs provenant d'établissements d'enseignement supérieurs francophones et anglophones originaires de la grande région de Montréal ainsi que d'autres régions du Québec. Cette communauté d'enseignants, de chercheurs en éducation et de concepteurs de matériel didactique se rassemble autour d'objectifs communs : mettre en œuvre des innovations pédagogiques reconnues et des technologies éducatives afin de promouvoir un apprentissage profond, tout en soutenant la réussite des étudiants et leur motivation durant leurs études post-secondaires.

SALTISE doit sa création et son développement à une subvention d'Entente Canada-Québec, relative à l'enseignement dans la langue de la minorité et à l'enseignement des langues secondes (ECQ), Ministre de l'Éducation et de l'Enseignement supérieur. Par son développement de ressources, ses innovations en matière de partage des connaissances et ses efforts communautaires, SALTISE rejoint plus de 1500 éducateurs. Son site web qui ne cesse de se développer (https://www.saltise.ca/) offre à présent une douzaine de ressources et d'outils pour mettre en œuvre des innovations pédagogiques. Le site héberge la communauté SALTISE lui permettant d'établir des liens, d'échanger des pratiques pédagogiques et de partager des recherches en éducation. Dans le cadre de sa conférence annuelle, SALTISE accueille des chercheurs canadiens et internationaux, offrant ainsi aux spécialistes locaux l'occasion de discuter et d'échanger des pratiques exemplaires en pédagogie active et concernant l'utilisation des technologies éducatives. Pour plus d'information concernant SALTISE, voir le site https://www.saltise.ca/about/about-us/

# SALTISE Conference Committee
# Comité organisateur de la conférence SALTISE

## *Conference Chair*

Alicia Cundell (Concordia University) and
Suéli Bonafim (SALTISE)

## *Conference Planning Committee*

Sarah Anthony (McGill University), Chris Bailey (McGill University), Pascale Blanc (VTE), John Bentley (Concordia University), Valerie Bourassa (McGill University), Jonathan Brassard (McGill University), Murray Bronet (John Abbott College), Eva Bures (Bishop's University), Philippe Caignon (Concordia University), Robert Cassidy (Concordia University), Elizabeth Charles (SALTISE), Lorraine Chiarelli (SALTISE), Michael Dugdale (John Abbott College), Mohamed Elkhodiry Aboelella Mohamed (McGill University), Eric Francoeur (ETS), Victoria Glynn (McGill University), Carol Hawthorne (Concordia University), Azra Khan (Dawson College), Brenda Lamb (John Abbott College), Nathaniel Lasry (John Abbott College), Helen Martin (McGill University), Jennifer Mitchell (Vanier College), Maria Orjuela-Laverde (McGill University), Dan Petrescu (McGill University), Victoria Pickering (McGill University), Diane Querrien (Concordia University), Ken Ragan (McGill University), Florence Sedaminou (VTE), Roberta Silerova (John Abbott College)

## *Teacher Awards Selection Sub-Committee*

Carol Hawthorne (Chair, Concordia University), Murray Bronet (John Abbott College), Ying Li (Concordia University), Liz Charles (SALTISE/Dawson College), Sarah Anthony (McGill University), Azra Khan (Dawson College)

## *Student Awards Selection Sub-Committee*

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## *Program Sub-Committee*

Michael Dugdale (Chair, John Abbott College),
Elizabeth Charles (SALTISE), Lorraine Chiarelli (SALTISE)

## *Proposal Selection Sub-Committee*

Ken Ragan (Chair, McGill University), Susan Ajersch (John Abbott College), Silvia d'Apollonia (Dawson College), Chris Bailey, Valerie Bourassa, Jonathan Brassard, Eva Mary Bures (Bishop's University), Hannah Renée Chestnutt, Lorraine Chiarelli (SALTISE), Mohamed Elkhodiry (McGill University), Alina Gutierrez (Concordia University), Victoria Glynn (McGill University), Selma Hamdani (Dawson College), Anastassis Kozanitis (UQAM), Helen Martin, Maria Orjuela, Dan Petrescu (McGill University), Dalia Radwan (Concordia University), Marcy Slapcoff (McGill University), Oulin Yu, Chao Zhang (McGill University)

## *Technical and Logistics Support / Support technique et logistique*

Isabelle Kalekas (program and poster),
Rebecca Goodine (poster)

Web Support at Dawson College: Jonathan Perlman & Chris Georgieff

Web Developer: Littlebox

Translation: Florence Sedaminou and Dan Petrescu

# Welcome from SALTISE

Each year the SALTISE Conference gets better and better. The 2020 event had the earmark of being one of our strongest events in terms of the keynotes (Scott Freeman & Kimberly Tanner) and the numbers and quality of submissions. In March, like everyone else, we held our breath and hoped that the novel coronavirus (COVID-19) was a passing disruption. By April all hope was dashed as we realized that the world was facing a pandemic, the likes of which few still alive have experienced. As May arrived, we as a society, began to come to terms that life, as we knew it, would be changed irrevocably and we would not be holding such gatherings for some time.

Yet, the spirit of our Conference lives strong and we are more determined than ever to keep moving forward by bringing a taste of what was in store to you. In this special issue program, we showcase our colleagues who have shared their research and practice. We also pay honour to those who were nominated by peers and selected to receive SALTISE Innovation awards. We hope this publication will keep you sustained over the next year, until we meet again.

SALTISE reaffirms its gratitude to the countless people who have been, and continue to be, on the frontlines of the battle against the COVID-19 virus. These healthcare and essential services workers, bravely risking their health daily to help preserve ours. We are indebted to our team, the SALTISE staff and graduate students that work daily to update the website and keep developing valuable instructional materials.

We dedicate this special issue to our colleagues who have also been on another frontline. They are the elementary, high school, college and university teachers who heroically pivoted their teaching from classrooms to online remote instruction, many doing so with the grace of a ballet dancer. They have not received the deserved attention and thanks. But, we see you! We are proud of your effort and contribution to our society that recognizes the need and importance of education. More than ever, we need this type of hope for the future.

Best wishes to you all and stay safe,

***Liz Charles & Nathaniel Lasry,***
*(SALTISE co-Directors)*

# Bienvenue de SALTISE

La conférence SALTISE s'améliore chaque année. L'événement que nous avions planifié pour 2020 se voulait d'être un de nos événements les plus marquants en termes de conférenciers invités (Scott Freeman & Kimberly Tanner) ainsi que par le nombre et qualité des soumissions. En mars, nous avons retenu notre souffle, comme tout le monde, et espérions que le coronavirus (COVID-19) était une perturbation passagère. En avril, nos espoirs ont été anéantis, nous voyant confrontés à une pandémie historique sans précédent récent. En mai, nous réalisions en tant que société que la vie, telle que nous la connaissions, allait changer de façon irrévocable et que nous ne tiendrions pas de tels rassemblements pendant un certain temps.

Pourtant, l'esprit de notre conférence vit fort et nous sommes plus déterminés que jamais à aller de l'avant en vous donnant un avant-goût de ce qui vous attendait. Dans ce programme spécial, nous présentons nos collègues qui ont partagé leurs recherches et leurs pratiques pédagogiques. Nous rendons également hommage à ceux qui ont été nommés par leurs pairs et sélectionnés pour recevoir un des prix SALTISE Innovation. Nous espérons que cette publication vous maintiendra virtuellement avec nous au cours de la prochaine année, jusqu'à notre prochaine rencontre.

SALTISE réaffirme sa gratitude envers les innombrables travailleurs de la santé et des services essentiels qui ont été, et continuent d'être, en première ligne contre le virus COVID-19. Ces individus continuent quotidiennement de mettre leur santé en péril pour aider à préserver la nôtre. Nous sommes redevables aussi à notre équipe, le personnel SALTISE et aux étudiants diplômés qui travaillent quotidiennement pour mettre à jour notre site Web et continuer à développer du matériel pédagogique précieux.

Nous dédions ce numéro spécial à nos collègues qui ont également été sur une autre ligne de front. Ce sont les enseignants du primaire, du secondaire, du collégial et d'université qui ont héroïquement fait pivoter leur enseignement en salles de classe à un enseignement à distance en ligne, beaucoup le faisant avec la grâce d'une danseuse de ballet. Ils n'ont pas reçu l'attention et les remerciements mérités. Mais nous vous voyons! Nous sommes fiers de vos efforts et de votre contribution à notre société qui reconnaît le besoin et l'importance de l'éducation. Plus que jamais, nous avons besoin de ce type d'espoir qu'ils nous procurent.

Meilleurs vœux à tous et restez en sécurité,

***Liz Charles & Nathaniel Lasry,***
*(co-Directeurs de SALTISE)*

# Lifetime Achievement Award
# Reconnaissance pour l'ensemble de la carrière

SALTISE is proud to announce the 2020 recipient of our Lifetime Achievement award is Dr. Laura Winer, Director of Teaching and Learning Services (TLS), McGill University, Montreal. This award is given to individuals who have played a significant role in supporting the growth and well-being of our community. Laura is indeed such an individual!

As the Director of TLS, Laura oversees many initiatives at McGill, including the design and redesign of classrooms and teaching labs, faculty development programs, online education, student professional skills development, the appropriate and effective use of technology in teaching and learning, and policy development. A focus of TLS is in creating partnerships, both within the University and with external partners. To that end, Laura has been a staunch supporter of SALTISE for nearly a decade. Preferring to work away from the spotlight, Laura has been a behind-the-scenes advocate of countless SALTISE projects at McGill. She was instrumental in hosting the 2016 Annual Conference and is a standing member of our Advisory Committee. SALTISE deeply appreciates this steadfast commitment to fulfilling the vision and mission of our association. Thank you for the many years of being in our corner and for always finding a way to answer our request for support. You are a true example of why our SALTISE community works.

## Words of congratulations from McGill colleagues:

PROFESSOR KEN RAGAN, Professor of Physics, William C. Macdonald Chair in Physics, Faculty of Science, McGill University. For many years at TLS (where she is now the director), Laura has been instrumental in helping that Service develop into a leading source of pedagogical expertise and instruction at McGill, and in promoting enlightened and effective teaching and learning approaches across the institution. She has been a strong supporter of SALTISE and of the participation of McGill staff in furthering the emergence of a vibrant Montreal community committed to excellence in pedagogy. This is a very deserved award!

PROFESSOR LAWRENCE CHEN, Department of Electrical and Computer Engineering, Faculty of Engineering, McGill University. I first met Laura through participation in our Committee on Teaching and Learning. She always brought plenty of thoughtful and practical advice for addressing various issues from course evaluations, to graduating student attributes, to student engagement, learning, and assessment. Laura has also provided me with unwavering support as I transitioned to a new teaching approach that is more student-centric and focused on active learning. Without her suggestions and encouragement, this journey would have been a lot more challenging, if not impossible.

TERI PHILLIPS, Director Office for Students with Disabilities, and Tutorial Services, McGill University. Laura brings a frank and straightforward approach to her work that sets the stage for honest and engaging conversations as we traverse the ever more complex terrain of post-secondary education. What results from her own candor is a fresh exchange of ideas among colleagues and an enthusiastic quest for innovative solutions to challenging situations. Laura has contributed to the field two fold – by way of her own, direct work, and by having assembled and guided a team that is now leading McGill teaching staff through the new world of remote instruction.

ANITA PARMAR, Co-Director, B21, McGill University. As our fearless and open-minded leader of Teaching and Learning Services (TLS) at McGill, with vast intelligence and admirable knowledge, Laura inspires us daily to better serve our ideals and our mission. By respecting all of the diverse opinions around her, and always listening to new ideas, TLS remains vibrant, constantly evolving, and perhaps most importantly, an oasis of hope. I am among many who have been lucky to know Laura as a mentor and source of constant inspiration.

MARIA ORJUELA-LAVERDE, Academic Associate, Teaching and Learning Services, McGill University. Laura was the first person I met at TLS, and she saw I had something to bring to the team. I will always be grateful to her for believing in me. She has been a great mentor. As the Director of TLS she allows the team to try new ideas…and when they don't go as planned, we have been able to learn from them, build from those experiences, and move on! I very much like her willingness to share with colleagues from other institutions, and to participate in events that others organize; this is reflected in the strong bonds McGill has built with other SALTISE institutions. This award is very well deserved.

# Past recipients of the SALTISE Lifetime Achievement Award

### *2019*

- Maria Orjuela-Laverde (McGill University)
- Rob Cassidy (Concordia University)

### *2018*

- Thérèse Laferrière (Université Laval)

### *2017*

- Erich Schmedt (John Abbott College)
- Richard Filion (Dawson College)

### *2016*

- Kenneth Ragan (McGill University)

### *2015*

- James Slotta (University of Toronto OISE)

### *2014*

- Silvia d'Apollonia (Dawson College)

# 2020 SALTISE Best Practices & Pedagogical Innovators Award
# Prix d'excellence et d'innovation pédagogique

The SALTISE "Best Practices & Pedagogical Innovators Award" recognizes educators who stand out as leaders in the promotion of academic excellence, use of innovative pedagogies, and support of their academic communities.

We are happy and proud to present these recipients who truly represent the best among us!

## *Alice Cherestes*
MCGILL UNIVERSITY

Dr. Alice Cherestes exemplifies excellence in pedagogical innovations, by transforming the Freshman program in the Faculty of Agricultural and Environmental Sciences at McGill University – through her teaching (many courses), through her leadership as a program director, and through her innovations.

Dr. Cherestes's work has been recognized numerous times. She won the Teaching Excellence Award, and more recently the Dean of Students Award for Excellence in Undergraduate and Academic Advising. She pioneered the implementation of many active learning strategies at McGill, including the IFAT (Instant Feedback Assessment Technique), the two-stages exam in Organic Chemistry (combining individual with group assessments), and the use of clickers for improved student engagement. She also built invaluable seminars focusing on crucial topics relevant to undergraduate life. Her most recent initiatives focused on organizing activities catering mental health, bridging school life and residence life.

Whether using the Active Learning classroom at Macdonald Campus, or her use of creative assessment strategies, Dr. Cherestes provides a framework for students to navigate their courses in a manner that they understand and learn, and they do this in collaboration with the instructor. She sees the teaching and learning landscape as one of partnership, building a 'community of practice' which is infusing throughout the campus and across McGill. In a larger sense, Dr. Cherestes isn't only a teacher, but also a true ambassador, forging a meaningful legacy of academic excellence, at McGill University.

## *Phoebe Jackson*
JOHN ABBOTT COLLEGE

When Dr. Phoebe Jackson came to the physics department at John Abbott College, it was rare for a newly hired teacher to have any formal teacher training, so her degree in mathematics teaching made her stand out. Right away, she quietly implemented many practices, such as collaborative problem-solving, that are now recognized as being strongly supported by evidence from the Learning Sciences community. There was initial scepticism at the College that these approaches would be effective within the context of college physics instruction. However, these reservations were proven to be groundless. Her effective use of Active Learning (AL) pedagogies in the physics classroom have provided real-world templates that facilitate student learning. In turn this initiative has successfully encouraged faculty in the Physics Department and others at John Abbott as well as members of the education community to ease into adopting Active Learning strategies for the classroom.

In terms of best practices, Dr. Jackson's course designs are organized around clear competency-based learning objectives and incorporate evidence-based practices including: collaborative group work, two-stage quizzes, pre-class collaborative text annotation, visual discussion forums using Visual Classrooms and many more. For her pedagogical innovations, one only has to look at her contributions to the SALTISE S4 physics team, the ECQ funded organizational arm of SALTISE, in developing new materials for the myDALITE platform, and contributing to the design of CourseFlow, an interactive app that allows for instructional design at three levels of pedagogical planning. Her contributions to this S4 team are helping to bring about the important changes and adoption of active learning in physics departments across the Anglophone network of universities and colleges.

## *Ian MacKenzie*
DAWSON COLLEGE

Ian MacKenzie is a pillar at Dawson College when it comes to promoting academic excellence through innovative pedagogies and supporting our academic community as they bring these practices into the classroom.

As founder and project lead for the Dawson Learning Communities (LC) initiative, Ian has created a broad movement that uses evidence-based approaches to enrich teaching and learning through collaborative and cross-disciplinary efforts across the college. Building on an initial three-year pilot phase that saw more than two-dozen courses integrate learning across disciplines, Ian has begun an ambitious five-year plan for the development of additional projects in Science, Social Science, and in Certificates / Special Areas of Study.

Ian MacKenzie continues to demonstrate leadership in bringing about innovative change in a way that has allowed faculty to adopt, share and adapt pedagogical improvements to their teaching. As the founder and director of the Dawson Writing in the Disciplines (WID) initiative, since 2010 he has coordinated the Faculty Writing Fellows (now numbering 86 teachers in total, and facilitated by Jeff Gandell since 2018); led eight different WID Department and Program Projects; hosted the WID Spring Institute every year since 2012; and delivered numerous tailored workshops and presentations. Through these WID activities, hundreds of Dawson instructors have been introduced to evidence-based approaches to writing, critical thinking and active learning. For more, please see: https://writing.dawsoncollege.qc.ca

Finally, his leadership in the promotion of academic excellence, the use of innovative pedagogies, and in the support of academic communities also extends well beyond Dawson. He is a regular presenter at the SALTISE conference, and he has been an invited speaker at local colleges and universities as well as at numerous conferences nationally and internationally.

## *Laura Pavelka*
MCGILL UNIVERSITY

Since joining McGill University in 2012, Dr Laura Pavelka, has been instrumental in developing student-centered pedagogical models in Organic and General Chemistry classes. She is an engaging, enthusiastic, and dedicated lecturer, and has consistently received excellent teaching evaluations. In 2017, Dr. Pavelka was awarded the Principal's Prize for Excellence in Teaching at McGill, a highly prestigious and selective award given to educators who have demonstrated excellent teaching capabilities and ability to motivate students.

Dr. Pavelka has had a powerful effect on undergraduate teaching in the Chemistry department at McGill having taught approximately 10,000 students to date. She constantly adapts the course content, lecture material, and learning resources in-line with the students' needs and latest technological developments. As a committed member of the pedagogical community, she works closely with other educators at McGill in the AAU STEM project to determine and implement the most effective teaching strategies for large enrolment freshmen classes. As a member of the SALTISE S4 chemistry group, she is working with multiple other local educators to improve myDALITE, an open source web-based platform for enhancing student learning.

Over her career, she significantly improved the quality of our general chemistry and introductory organic chemistry courses by updating course material, modernizing lab procedures, improving coordination and flow between courses, setting up interdepartmental resources for our students, and providing additional support for "at risk" students.

In addition, Dr. Pavelka acted as local section chair for the Montreal branch of the Chemical Institute of Canada from 2014-present bringing together chemists and chemical engineers within the greater Montreal area.

**Congratulations to our 2020 winners**

# Past recipients of the SALTISE Best Practices & Pedagogical Innovators Award

## *2019*

- Yann Brouillette (Dawson College)
- Nadia Naffi (Université Laval)
- Dominique Piotte (Ecole de Technologie Superieure (ÉTS))
- Roberta Silerova (John Abbott College)

## *2018*

- Louis Normand (Collège de Rosemont)
- Claire Trottier (McGill University)

## *2017*

- Ann-Louise Davidson (Concordia University)
- Michael Dugdale (John Abbott College)
- Karl Laroche (Vanier College)

## *2016*

- Marielle Beauchemin (Vanier College)
- Jean-François Brière (Dawson College)
- Lynda Gelston (John Abbott College)
- Rosemary Reily (Concordia University)

## *2015*

- Rhys Adams (Vanier College)
- Samantha Gruenheid (McGill University)
- Lawrence R. Chen (McGill University)

## *2014*

- Kevin Lenton (Vanier College)
- Sean Hughes (John Abbott College)

## *2013*

- Edward Awad (Vanier College)
- Murray Bronet (John Abbott College)
- Chris Buddle (McGill University)

# 2020 SALTISE
# Graduate Student Award / Prix étudiant diplômé

The SALTISE "Student Award" recognizes students who stand as contributors to the SALTISE community through the promotion of academic excellence, use of innovative pedagogies in their role as Teaching Assistants (TA), Research Assistants (RA), Course Lecturers and other tasks that support and/or are consistent with the goals of the SALTISE community. SALTISE this year is sponsoring 2 post-secondary student awards.

## Congratulations to our Winners

### *Jasmin Chahal*
MCGILL UNIVERSITY

Jasmin Chahal recently completed a PhD in Microbiology and Immunology, working in Dr. Sagan's lab at McGill. Since 2014 she has been a Teaching Assistant for several courses, including an inquiry-based lab course where she independently created tools to support student learning. She has led important course development projects, notably implementing the SEA-PHAGES program in her Department.

From 2016-2018 she was the McGill's lead coordinator of Let's Talk Science, a national science education organization, where she coordinated a network of STEM graduate students to develop hands-on activities and empower them to build their own teaching skills. Jasmin also participates in the American Society for Microbiology Teaching Undergraduate Biology Certificate program.

Throughout her years as a student ,TA and teacher Jasmin has mentored multiple students in her lab and is recognized as an exceptional mentor by her peers and supervisor. According to her, she loves teaching and enjoys the collaboration with colleagues.

### *Franco La Braca*
CONCORDIA UNIVERSITY

Franco La Braca is a Master's student in Physics Education at Concordia University. He obtained his honours bachelor's degree in physics and minor in computer science from McGill University, throughout which he developed a passion for education. During that time, he was involved in computer graphics and animation research with Dr. Paul Kry, as well as in research in machine learning – specifically deep neural networks – and early universe cosmology with Dr. Robert Brandenberger. He has since then gone on to pursue his master's degree in physics at Concordia University, where he is doing research in physics education under the supervision of Dr. Calvin Kalman

As an active member of the SALTISE S4-Physics team, the ECQ funded organizational arm of SALTISE, Franco's contribution to the team is helping to bring about important change and adoption of student-centered active learning in Physics departments across the Anglophone network of universities and colleges. According to Franco, his passion for Education is undoubtable, and so his ultimate career goal is to become an impactful college physics professor, in hopes of inspiring and lighting the sparks of curiosity within students.

## History of the Award

The SALTISE student award was presented for the first time at the SALTISE 2019 conference to Armin Yazdani, graduate student at McGill University.

# Program Abstracts / Résumés du programme

## *Active Learning Practices & Strategies*

### Cross-disciplinary courses as vehicles for climate change education

ED HUDSON (John Abbott College), JESSICA BURPEE (John Abbott College) edward.hudson@johnabbott.qc.ca, jessica.burpee@johnabbott.qc.ca

Anthropogenic climate change includes scientific, technological, socioeconomic, political and ethical dimensions and thus the disciplinary 'silos' which often characterize college curricula are barriers to effective climate change education. We present climate change education strategies and activities from several co-taught courses at John Abbott College which bridge departments (including chemistry & physics and geography & physical education). These have led both students and teachers to understand climate change more holistically than discipline specific conventions typically permit.

### A study of the effectiveness of the redesign of a large introductory mathematics course

ALEX RENNET, JAIMAL THIND, PARKER GLYNN-ADEY (University of Toronto, Mississauga), MICHEAL PAWLIUK (University of Toronto) alex.rennet@utoronto.ca, jaimie.thind@utoronto.ca, parker.glynn.adey@utoronto.ca, m.pawliuk@mail.utoronto.ca

The authors recently redesigned a large introductory mathematics course (enrollment ~1200/yr, divided into coordinated sections). The redesign targeted mathematical literacy by focusing the course around a series of "scaffolded readings". Readings were combined with various pre/in/post-class components to create a partially-flipped classroom.

To measure the effectiveness of this redesign we will analyze quantitative data, including surveys of attitudes related to mathematics, mathematical reading comprehension tests, and marks and attrition rates in this and the sequel course.

### FSCI 396 brings undergraduate students into the course assessment and design process

TAMARA WESTERN, REBECCA BROSSEAU, IRIS GUO (McGill University), OTHER FSCI 396/397 COURSE ALUMNI (STUDENTS AND SUPERVISORS) tamara.western@mcgill.ca, rebecca.brosseau@mail.mcgill.ca, iris.guo@mail.mcgill.ca

Many STEM professors have not switched to evidence-based pedagogy due to a lack of time. To address this, we have implemented the Students as Partners in higher education (SaP) framework as FSCI 396 – Research Project in Science Teaching and Learning, a course in which students collaborate with faculty to engage with the pedagogical literature for course (re-)design and/or assessment. Here we will explain the structure of FSCI 396 and former students will present their projects.

### Approaches for Decolonizing and Indigenizing Education: Lessons from the Intercollegiate Decolonization Network -- a grassroots collective

ALYSON JONES (Vanier College), DEBBIE LUNNY (John Abbott College), JENNIFER SAVARD (Dawson College), INDIGENOUS PARTNER INDIGENOUS STUDENT (TBA), RAGNĖ RACEVIČIŪTĖ (John Abbott College) jonesa@vanier.college, debbie.lunny@johnabbott.qc.ca, jsavard@dawsoncollege.qc.ca

The Intercollegiate Decolonization Network (IDN) is an informal grassroots collective that is composed of Indigenous and non-Indigenous staff, professionals, teachers, and students from English-language Cégeps in the Tiotia:ke (Montreal) area, as well as Indigenous partners from local communities. In this Interactive Presentation, members of the IDN will address concrete pedagogical approaches for decolonizing and Indigenizing education. Break-out groups will allow both new and more-experienced participants to share their ideas and concerns and receive immediate feedback.

### Natural HIstory Education for Urban Students

EMMA DESPLAND (Concordia University), Emma.Despland@concordia.ca

Natural history was once part of 'common knowledge', but few students now, even in ecology programs, can identify local species of plants or animals. Direct lived experience of the natural world is, of course, important training for professional biologists, but I argue that, given the current climate and biodiversity crises, it's also vital for engaged and informed citizens. I will present a few examples of active-learning outdoor natural history exercises I have done with biology classes at Concordia, to spark a discussion about the place of natural history education in diverse curricula.

### Kahoot une application ludique au service de la pédagogie, boosteur d'énergie positive

FETHI BOUTELAA (Ecole polytechnique de Tours), djanis86@yahoo.fr

Il ne semble pas y avoir de lien entre le titre et le résumé et le texte de description. On ne comprends pas le lien entre Kahoot

et la consolidation des connaissances. La problématique devrait être mieux élucidée. Il manque la méthode et les résultats. les élèves avaient des difficultés à consolider leurs connaissances, et vivaient les évaluations formatives classiques comme une contrainte. Ils ne se prêtaient pas au jeu et souvent ce sont les mêmes élèves qui participaient. Ainsi, les copies d'examen révélaient souvent des lacunes ou une maîtrise approximative du vocabulaire et des notions mobilisées par le sujet.

Kahoot est une application en ligne permettant de générer des QCM interactifs. Ces derniers, utilisés en classe sur tablette, smartphone ou ordinateur, donnent la possibilité aux élèves de s'auto-évaluer, tout en visualisant en direct leur degré de réussite ainsi que celui de leurs camarades. Le système est apparenté à celui des boitiers de vote et permet à l'enseignant d'évaluer, pour chaque élève, le degré d'acquisition des contenus étudiés. Son aspect ludique favorise l'émulation : les questions sont présentées dans des formes géométriques colorées et accompagnées d'une ambiance musicale qui plonge l'élève dans l'exercice ; il peut gagner des points et des médailles, ce qui le motive à répondre vite et bien. Motiver l' élève à réviser le cours pour gagner la première place du podium. Cette possibilité de repenser les processus d'apprentissages en créant un environnement captivant. C'est un support pour échanger, question par question, justifier ses réponses, reformuler... Cela crée une dynamique, et permet de revoir les notions et donc de stabiliser les connaissances.

## La classe à l'ère du numérique : impacts sur les apprentissages.

FETHI BOUTELAA (Ecole Polytechnique de Tours), djanis86@yahoo.fr

Un retour d'expérience sur l'utilisation des outils numériques qui permettent de donner une réponse à ces diverses interrogations: Peut-on améliorer la motivation des élèves ? Développer leur autonomie? Permet-il un apprentissage plus actif? Permet d'apprendre en jouant? L' outil numérique permet la réalisation d'une fonction pédagogique, mais c'est un outil comme un autre qui s'insère dans un scénario d'apprentissage. On parle d'outil numérique au service de la pédagogie; en terme d'amélioration de l'apprentissage. Avec le numérique, le métier de l'enseignant

## Making online course materials accessible: Impactful guidelines

MAGGIE LATTUCA, CLAIRE WALKER, JENNIE FERRIS (McGill University), maggie.lattuca@mcgill.ca, claire.walker@mcgill.ca, jennie.ferris@mcgill.ca

Have you ever wondered whether your online course materials are accessible to all learners? Web accessibility is the inclusive practice of ensuring that no barriers prevent access or interaction with online content by people with disabilities. A university working group operationalized the Web Content Accessibility Guidelines (WCAG) 2.1 into checklists for instructors, developers, integrators, and instructional designers, to promote the development of accessible materials in a variety of pedagogical contexts. Participants will consider the checklists' application to their context, to help ensure that course materials for active learning are accessible to all students.

## Oral communication in Science: Self-efficacy and other factors influencing performance of college science students

CAROLINE CORMIER (Cégep André-Laurendeau), SIMON LANGLOIS (Cégep Marie-Victorin), caroline.cormier@claurendeau.qc.ca, simon.langlois@collegemv.qc.ca

Oral communication is a source of stress for most people. Nonetheless, some college students display a real ability and feel enthusiastic when they must give an oral presentation while others are literally sick when faced with that perspective. We studied college Science students to document their self-efficacy and actual ability to communicate orally on scientific topics. In this presentation, we will present results on those aspects that were collected through questionnaires, interviews and classroom observations.

## Interdisciplinary Lightboard videos linking Chemistry and Physics in the CEGEP curriculum

LORI JINBACHIAN, MARGARET LIVINGSTONE (Marianopolis College), JEREMIE VINET (Dawson College), m.livingstone@marianopolis.edu jeremie.vinet@dawsoncollege.qc.ca

As Chemistry and Physics teachers, we recognize the fertile territory for interdisciplinary learning that is our curriculum. Our goal was to produce interdisciplinary lightboard videos using a SALTISE mini-grant. Beyond simply explaining a concept in one discipline and once again in the other, we hope an approach where we make more clear the modeling and the strategies used to solve problems in different disciplines can help the students achieve a more global scientific perspective.

## Creating of online courses and MOOC with Agile.

ORZI KAMOLOVA (Université de Montréal), orzu.kamolova@umontreal.ca

Why Agile ? Because it breaks silos and makes teams work better together.

## Transforming the Instructional Landscape: Dialogues Between Pedagogy and Space

CAROL ROLHEISER, HEDIEH NAJAFI, KELLY GORDON (University of Toronto), SUSAN MCCAHAN,
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Since 2010, the number of Active Learning Classrooms (ALCs) at the University of Toronto (U of T) has increased to support active learning pedagogy. An assessment project examined U of T administration's strategies in allocating resources to ALCs and U of T instructor's experiences teaching in the ALCs. This session will present our methodology, findings and recommendations in response to instructor's perspectives and institutional strategy to further active learning pedagogies across U of T classrooms.

## Developing 21st C Skills with Online Curation and Social Annotation

PATTI KINGSMILL, KELLY MACDONALD (Vanier College), PHOEBE JACKSON (John Abbott College), KEVIN LENTON, HEATHER ROFFEY, TOBY MONEIT, AURORA FLEWWELLYNG-SKUP (Vanier College), kingsmip@vaniercollege.qc.ca, macdonak@vaniercollege.qc.ca, phoebe.jackson@johnabbott.qc.ca

Online curation (OC) and social annotation (SA) are strategies that help develop 21st century skills: OC involves collecting, selecting, organizing, annotating and publishing content online. SA entails commenting on discourses in a collaborative online environment. Both help develop critical thinking, research, communication, and collaboration, and both support peer-teaching. After introducing these strategies, teachers will share experiences integrating them into the classroom as well as resources designed to support that integration.

# *Assessment*

## Assessment and Intervention in a Large Enrollment Course

PALLAVI SIRJOOSINGH (McGill University),
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This talk is focused on two of the many challenges of large enrollment courses:

1) Providing detailed feedback on individual exams: The assessment was changed to a short answer format. Crowdmark, a web-based grading platform, allows the ability to efficiently and effectively add detailed comments on individual exams.

2) Providing effective learning resources for struggling students: Students who were struggling with the content were organized into study groups and surveyed at the end of the semester to determine the effectiveness of this learning resource reform.

## Introducing Metacognitive Skills for Undergraduate Students in Engineering Courses

ARMIN YAZDANI, ALEXANDER LIEPINS, MARIA ORJUELA-LAVERDE, NATHANIEL QUITORIANO (McGill University),
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This project which received a SALTISE mini-grant will present the development and delivery of evidence-based metacognitive tools that aimed to empower students to be active agents of their own learning. Metacognitive tools were developed for students and was delivered by the professor in an upper-level Engineering course. The development of materials, integration into the course, challenges encountered, and plans for the future use of these tools will be discussed.

## Small but Mighty: Using Students Smartphones in College Teaching

ANICK LEGAULT (Dawson College), MARY JORGENSEN (Adaptech Research Network), LAURA KING (Collège André-Laurendeau), ALICE HAVEL (Dawson College) ALEX LUSSIER, (Collège André-Laurendeau), MEAGAN HARVISON (Concordia University)CHRISTINE VO (Adaptech.) aclegault@dawsoncollege.qc.ca, mjorgensen07@ubishops.ca, laura.king@claurendeau.qc.ca

Many different free apps and websites support the use of smartphones in classrooms. After conducting a research project with student, teacher, and professional focus groups, we found that teachers used students' smartphones in the classroom in a variety of creative ways. Participants will leave this session with new ideas on how to use this readily available electronic device with their students, with or without disabilities, to increase and improve participation.

## What, where, and why should I care: Active learning, student engagement, and legal literacy

REBECCA KATZ (McGill University), rebecca.katz2@mail.mcgill.ca

This presentation addresses active learning strategies which the presenter has used to teach legal literacy at the college and university level. The presenter advocates legal and policy literacy as vital to understanding today's world, especially given young people's stake in laws which must keep pace with modern technological and social changes. She discusses active learning strategies that have helped her students master these concepts, and which can be transferred to a range of curricula.

## A quantitative analysis of career path of PhD graduates from Canadian universities

Shanmugavalli Narayanan (McGill University),
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The current project focuses on developing an evidence based quantitative report about the career path of PhD graduates. The analytical findings of this project reflects on two different levels of occupational information of PhD graduates: (i) general occupational categories (e.g., higher education, non-profit, for-profit),(ii) specific occupational type (e.g., tenure-track professor, lawyer, writer/artist) in the light of discipline, graduation year, gender and geography. This project represents an important step in understanding what really happen to Canada based PhD graduates.

# *Connecting Research to Practice*

## New literacies, social practices and active learning in e-discussions

LESLEY WILTON (University of Toronto),
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Active learning opportunities in online environments are growing in K-12 and higher education. Yet there are gaps in our understandings of effective pedagogical and design practices to support active learning in online discussions. Articulation and sharing of ideas foster learning, but new literacies and social practices in e-discussions have not been deeply investigated. These concepts are explored through the analysis of 137 online learning participants' interactions and perceptions. A selection of best practices is proposed.

## Exploring the role of Inquiry-based learning to combat math anxiety

RAJNEET KAUR MAAN (McGill University),
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Math anxiety (MA) is a feeling of stress that interferes with doing math. The problem of MA is dominant in elementary teachers who have low math self-concept and who don't feel qualified in their math teaching. This study is design-based research employing theories of social constructivism and situated learning. It is exploring the potential of the student-centered instruction method, inquiry-based learning, to alleviate MA in pre-service elementary teachers.

## Multi-media approaches in teacher education: An initiative to support pre-service teacher well-being.

BILUN NAZ BOKE, AMANDA ARGENTO, STEPHANIE ZITO (McGill University), JULIA PETROVIC, SABEL SADOWSKI, DANA CARSLEY, NANCY HEATH, bilun.boke@mail.mcgill.ca, amanda.argento@mcgill.ca, stephanie.zito@mail.mcgill.ca

In response to heightened stress among teachers, McGill's Faculty of Education has committed to integrating well-being instruction within teacher education. The Regulating Emotions and Stress in pre-Service Teachers (RESST) program was developed to enhance pre-service teachers' resilience to stress and provide support around stress management and well-being using multi-media approaches. This presentation will highlight the use of technology within the RESST program, as well as outline research findings on program feasibility, acceptability, and effectiveness.

## Artificial Intelligence in Education: The fine line between a system's and a learner's performance

BERENGER BENTEUX, TANYA CHICHEKIAN
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Although much research has led to positive results regarding AI technologies used in educational contexts, few are actually implemented in classrooms. A review of 200 articles from the field of AIED concluded that most findings focused on system optimization and less so on enhancing the quality of learning. For AI-powered technologies to function optimally in education and not just from a computer science perspective, a complementary research design nested within an educational framework is needed.

## The future of STEM education

ARMIN YAZDANI, BRULE VERONIQUE, ANITA PARMAR (McGill University), JOEL TRUDEAU, (Dawson College), IRIS GUO (McGill University), ROBERT CASSIDY (Concordia University),
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What could the future of STEM education look like? In this panel discussion, a team from McGill University, Dawson College, and Concordia University will briefly present common and novel areas of interest among STEM-focused teaching and learning units. Following this, the panel will discuss (a) What Universities and Colleges are doing to better prepare their students for a rapidly changing world? And (b) How our institutions are reconceptualizing STEM education.

## Results of an action-research with flipped classrooms in 6 institutions; lessons learned and implications for practice

BRUNO POELLHUBER, NORMAND ROY, VINCENT LABERGE (Université de Montréal), bruno.poellhuber@umontreal.ca, normand.roy@umontreal.ca, vincent.laberge@umontreal.ca

We realized a research-action on flipped classroom in 6 institutions. We'll draw a portrait of the flipped classroom practices and describe how students react to flipped classroom approaches on different motivation and engagement scales. Finally, we'll show how teaching practices influence student's engagement. We'll end by discussing with participants our own successes and challenges, as well as the implications of our results for the practice of flipped classroom and for teachers' professional development.

## From high-impact extra-curricular activity to the class-room: challenges.

HÉLÈNE NADEAU (Dawson College), SYLVIA COX (McGill University and Dawson College), hnadeau@dawsoncollege.qc.ca, sylvia.cox@mcgill.ca

We conducted a very successful summer internship program in research in neuroscience in the past years. This high-impact activity clearly engaged the learners. Last Fall, the model was adapted to the classroom through a Science option course: "An Introduction to Research in Brain Imaging" and we are currently building a multidisciplinary complementary course "Introduction to Research in Neuroscience". This talk will summarize the main differences between the extra- and the intra-curricular endeavors and the new challenges arising from them and, offer possible ways to tackle these challenges.

## How do professors and students experience teaching and learning in classrooms that use active participatory learning?

KYLIE HARTLEY (Sheridan College), kylie.hartley@sheridancollege.ca

Active learning is gaining traction in higher education. This talk will explore how professors and students experience teaching and learning in classrooms that use active participatory design. Topics covered will include a discussion on student and professor experiences when active participatory design is used occasionally and when it is the cornerstone of the classroom experience. We will discuss both positive experiences as well as challenging ones.

## Small Data: A humble inquiry into online learning behaviour of students through LMS logs

ERIC FRANCOEUR (École de technologie supérieure), eric.francoeur@etsmtl.ca

A discussion of how LMS logs can provide insights into the online behavior of students with the aim of improving student engagement.

## 3D Printing as an Educational Technology: Theoretical Perspectives, Learning Outcomes, and Recommendations for Practice

HEATHER PEARSON, ADAM DUBÉ (McGill University), heather.pearson@mail.mcgill.ca adam.dube@mcgill.ca

By analyzing empirical studies according to educational theories, the present literature review examines how 3D printing can be used as an educational technology that advances self-directed learning. We examine its uses across formal and informal settings and identify specific learning outcomes (e.g., design process, academic content) and domain-general skills (e.g., problem-solving, collaboration) attributed to 3D printing. Current challenges and recommendations for practice are outlined to inform educators on how to implement 3D printing activities.

## Fostering self-regulated learning in the classroom

COSTANZA PICCOLO (University of British Columbia), costanza@math.ubc.ca

We present a pilot project aimed at incorporating classroom activities in a Calculus 1 course where students actively engaged in self-regulation, including reflecting on their own understanding of the material and developing deliberate strategies to adapt their work to achieve success.

## Quantifying and Promoting Inquiry-based Practices in University-level Physics Laboratories

BENJAMIN DRINGOLI, ARMIN YAZDANI (MCGILL UNIVERSITY), JANETTE BARRINGTON, THOMAS BRUNNER, DAVID COOKE, KENNETH RAGAN, JACK SANKEY-CHILDRESS BRADLEY SIWICK, MARCY SLAPCOFF (McGill University), benjamin.dringoli@mail.mcgill.ca, armin.yazdani@mcgill.ca, janette.barrington@mcgill.ca

While laboratory teaching has been used extensively in science education, it provides little reinforcement of lecture content as measured by exam performance. Instead, we focus on laboratories as spaces to learn experimental skills. We have applied

various validated instruments for measuring factors affecting McGill physics labs (student conceptual understanding, attitudes, the level of inquiry in lab manuals, and TA interaction) and plan to use these to track 'experimental learning' as labs become more inquiry-based.

## The discussion method in physics classrooms: Overcoming pitfalls to elaborate and lead efficient discussions

LOUIS TRUDEL (University of Ottawa), ABDELJALIL MÉTIOUI (Université du Québec à Montréal), ltrudel@uottawa.ca, metioui.abdeljalil@uqam.ca

Discussion is rarely used in physics classrooms because of its perceived difficulties: differences in knowledge of participants, emphasis on problem solving, etc. We thus aim to identify the conditions under which an efficient discussion may be initiated and maintained while students are investigating properties of physics phenomena. Our results showed that, despite the complexities of the physics classroom, some simple rules can be followed by teachers that are very effective to do so.

## H.E.L.P.P. : How Engaging Learners in a Professional Program (Through Small Changes Create a Big Impact )

SARAH MARSHALL (McGill University), sarah.marshall@mail.mcgill.ca

"The development of an instructor is complex; knowledge and enthusiasm are not enough to inspire today's students. Teacher behaviour can be a challenge; it is not enough for researchers to explore best practices in the classroom such as active learning strategies, and expect teaching behaviours to change. Research findings from educational psychology and learning sciences identify self-efficacy and the degree of readiness for change as playing a vital role in the adoption of best practices in the classroom.

## Espace Qilib'- renouveler les pratiques éducatives en mobilisant nos ressources collectives

GENEVIÈVE EMOND (MUZA - Solutions créatives en éducation), DELPHINE PARÉE (MUZA), emondgenev@gmail.com, delphineparee@gmail.com

Destiné aux équipes des champs de l'éducation désireuses de renouveler leurs pratiques et de renforcer leur cohésion d'équipe, l'Espace Qilib' facilite le développement professionnel. Il offre un espace d'exploration individuelle et collective, par alternance de situations s'appuyant sur le mouvement et la réflexion, pour aborder un sujet professionnel dans un contexte décloisonné. La méthode de travail questionne la posture commune des intervenants face à la diversité des besoins des élèves.

## Interprofessional Education - How the 6 medical technology programs at Dawson College are implementing Interprofessional Education

TIM MILLER (Dawson College), tmiller@dawsoncollege.qc.ca

This session will consist of faculty members from each of the 6 medical technology programs at Dawson College. As a team, we will describe the steps that have been taken to implement Interprofessional Education (IPE), describe how the use of a SALTISE mini-grant has impacted the project, the failures and lessons learned, as well as the successes we have achieved to date. We will also create the links between IPE and active learning.

## The Foundations of Student Learning: Lessons from the Research Literature on Perennial Challenges of Pre-Class Work, Note-Taking, Interactivity, Prior Learning, and Assessment

SAUL CARLINER (Concordia University), MONICA LOPEZ (Dawson College), NADINE BEKKOUCHE, DAVID JONES, WENBIN LIU, EZGI OZYONUM, ALEXIS STYLIANOU (Concordia University), saul.carliner@concordia.ca, mlopez@dawsoncollege.qc.ca, nadine.bekkouche@mail.concordia.ca, djones0845@gmail.com, wenbin.liu@concordia.ca, zgiozyonum@gmail.com, alexisstylianou@gmail.com

Although institution-wide efforts to strengthen teaching tend to focus on innovation and technologies, instructors on the front-line continue to feel challenged by more basic and perennial issues, such as getting students to complete pre-class work and promoting interaction without classroom chaos, while managing their teaching workload. This symposium presents insights on these issues from the research generated by a systematic review of the research conducted for an ECQ-funded project to develop an easy-to-access online reference for faculty.

## Conception d'un questionnaire qui prend en compte les modèles explicatifs des étudiants à l'égard des notions de chaleur et de température

ABDELJALIL MÉTIOUI (Université du Québec à Montréal), LOUIS TRUDEL (Université d'Ottawa), metioui.abdeljalil@uqam.ca, ltrudel@uottawa.ca

Dans la présente communication, nous allons d'abord présenter un état de la question sur les difficultés conceptuelles des étudiants (secondaire, collégial) à l'égard des concepts de chaleur et de température. Ensuite, nous préciserons la démarche utilisée pour construite un questionnaire à deux niveaux pour obtenir rapidement des informations sur les conceptions des étudiants sur les notions de chaleur et de température. Finalement, nous présenterons les limites d'un tel outil pour diagnostiquer les conceptions des étudiants.

## Discipline-based education specialists: big impact, one course at a time

WARREN CODE (University of British Columbia), warcode@science.ubc.ca

"We will present the model and key findings from the 10-year Carl Wieman Science Education Initiative which has transformed undergraduate science education at the University of British Columbia and inspired similar work elsewhere. The core model for change consisted of hiring and training discipline-based education specialists (educational developers operating in departments) to partner with faculty members in bringing the principles of scientific teaching to courses across the curriculum.

The main story of the initiative and its results appear in Carl Wieman's 2017 book, "Improving how universities teach science: Lessons from the Science Education Initiative" (Harvard University Press. http://www.hup.harvard.edu/catalog.php?isbn=9780674972070). For more detail on the "how to" of the discipline-based education specialists model and what is has looked like elsewhere, see "The Science Education Initiative Handbook" (2018) by Chasteen and Code, openly licensed and available at: https://pressbooks.bccampus.ca/seihandbook/.

## A Simple Recipe to Flip Your Approach Using Digital and Distance Ed Tools

RYAN MOON (Cégep à distance), ROBINSON REYES (Champlain Saint Lambert), rwmoon@cegepadistance.ca, rreyes@crcmail.net

Champlain Saint Lambert and Cégep à distance created a series of high definition narrative videos to prepare RAC candidates for a group evaluation process. The project, funded by the Digital Action Plan had candidates role play in project teams to create project documentation and deploy a computer network as part of the DEC in Network and Security Administration. This brief talk will cover how narrative preparatory videos were created using readily available software tools and free resources on the Internet that you can use in your pedagogical practice.

## Youth engagement at an urban youth centre: Lessons for facilitation in maker education

NATHALIE DUPONSEL, ANN-LOUISE DAVIDSON (Concordia University), nathalie.duponsel@concordia.ca, ann-louise.davidson@concordia.ca

Maker education has many of the features called for in experiential learning: it is hands on, driven by student interests, and requires students to tackle authentic and personally relevant problems. The assumption in maker education is that, given the presence of these features, students will automatically engage with maker activities. In this presentation we discuss our observations of maker activities at a youth centre and how important facilitation is in addition to these features in order for youth to engage with making activities.

## Learning and teaching English vocabulary with clickers

ANNE-MARIE SÉNÉCAL, VANESSA MEZZALUNA, WALCIR CARDOSO (Concordia University), anne-marie.senecal@concordia.ca, vanessamezza@gmail.com, walcir.cardoso@concordia.ca

This mixed-methods study investigated the effects of Learner Response Systems (clickers) on the acquisition of English vocabulary in a second language context, as well as the students and their teacher's perceptions of the technology and associated pedagogy. The results revealed that: a clicker-enhanced pedagogy benefits many students; and while the teacher (n = 1) had neutral to negative perceptions, the positive perceptions in the experimental Clicker Group (n = 31) surpassed those in the Control Group (n = 30) on most of the themes.

## Machine Learning to Grasp the Student as a Tool to Individualize Student Learning

JULIANN WRAY, MICHAEL HILKE (McGill University), THOMAS RADEMAKER, BENJAMIN DRINGOLI KSENIA KOLOSOVA, juliann.wray@mail.mcgill.ca, hilke@physics.mcgill.ca

Machine learning has emerged as one of the most powerful tools to classify images or more generally to categorize various types of inputs within many communities. In our case, machine learning is implemented in order to better individualize the student learning environment, particularly in large classes. More specifically, a Convolution Neural Network (CNN) takes physics education research data (N = 1600 over 2 years) on student learning background as inputs, and outputs the estimated student learning outcome based on individual background. In this case, the student background includes variables such as what types of content sequence the student receives (concept,theory,example, TEC, ETC and all other permutations) as well as learning resources used (such as online sources, textbooks, and working with peers). The CNN can predict the learning outcome of a student based on the student background with an accuracy of up to 73%. A prototype of a "smart online learning assistant" based off of the results of the machine learning analysis is developed and open to both students and instructors.

## OCLaRE — A platform for scaffolding student lab report writing. Update on development

PETRA TURKEWITSCH (Cégep de la Gaspésie et des Îles) MICHAEL DUGDALE, MURRAY BRONET (John Abbott College), ERIC WALDMAN, MITCHELL BABIN, KNEALAND YATES, pturkewitsch@cegepgim.ca, michael.dugdale@johnabbott.qc.ca, murray.bronet@johnabbott.qc.ca

OCLaRE is a free online platform designed to help students improve their lab report writing through a scaffolded writing-to-learn pedagogy. Students participate in completing partially written laboratory report templates provided by their teacher,

while OCLaRE automates selected tasks that are inessential to a given evaluation (e.g., performing lengthy calculations, producing graphs, and formatting). We report on the latest developments of this platform.

### Misconceptions in University Physics: Example-based Content Promotes the Strongest Conceptual Change

THOMAS RADEMAKER, BEN DRINGOLI, JULIANN WRAY, MICHAEL HILKE (McGill University), KSENIA KOLOSOVA, thomas.rademaker@mail.mcgill.ca, benjamin.dringoli@mail.mcgill.ca, juliann.wray@mail.mcgill.ca, hilke@physics.mcgill.ca, ksenia.kolosova@mail.mcgill.ca

In physics, students often enter the classroom with many prior experiences that affect how they interpret new information. Therefore, finding what educational content is most effective in correcting misconceptions can be tantamount for effective teaching. Using a custom-built online platform, McLEAP, our team designed an exam review program that collected valuable information on which content types helped students improve the most and overcome misconceptions in a first-year university setting.

### Teacher Autonomy Support and Science Students' Development of Passion

ANNIE TASKIRAN (McGill University), annie.taskiran@mail.mcgill.ca

Autonomy support (AS) and passion within education bring about many favourable outcomes in students, yet research on these two topics is scarce. Our study thus aims to analyze the impact of AS on college students' passion levels, to ultimately help improve academic and psychological well-being over time.

### WebWork implementation in advanced engineering courses

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WebWork is interface allowing evaluation and writing of assignments online and is applicable to engineering and mathematics courses where problems are characterized by "given data" (numerical parameters) and exhibit numerical solutions. The interface allows for construction of a problem template such that each individual student obtains distinct sets of "given data" resulting in a distinct problem for every student. The impact of this interface on the learning experience is studied in an advanced engineering course.

### Active learning for high school biology: collaboration, cooperation, and scientific argumentation in a learning community

ELENA BOLDYREVA (University of Toronto), ANJA AMUNDRUD (University of Oslo), JAMES SLOTTA (University of Toronto), MARIA NIÑO-SOTO (University of Toronto Schools) elena.boldyreva@mail.utoronto.ca, anja.amundrud@iped.uio.no, jim.slotta@utoronto.ca, maria.nino@utschools.ca

The study was conducted with 12th grade students who worked as a "scientific learning community" -- engaged in whole-class dialogue and collaborative knowledge construction, analysing sources for their reliability, looking for scientific evidence and participating in scientific argumentation and debates. Students' inquiry was supported by existing Internet technologies and a new technology environment called TalkWall. This study demonstrates the potential of a "learning community" approach for helping students to develop 21st Century Competencies and scientific literacies.

## *Educational Technology*

### Using collaboration technology to transform anatomy education for health professionals

KRISTA JOHANSEN (Tufts University School of Medicine), LESLIE SCHNEIDER, DR. ELLIE GLASGOW (Tufts University School of Medicine), Krista.Johansen@tufts.edu, leslie.schneid@gmail.com, Ellie.glasgow@tufts.edu

This study aimed to determine whether the use of CSCL technologies can play an important role for preparing learners for clinical practice. Visualclassrooms.com was piloted in a new interactive workshop-based clinical anatomy course for Physician Assistant students at Tufts Medical School. Learners used Visual Classrooms to discuss a series of cases and interact with radiologic findings. They scored higher on mid-term and final exams compared to students who only received didactic lectures.

### Animate to teach and gamify to practice: Utilizing authoring tools in blended language classes

MAYY ELHAYAWI (Ain Shams University), mayyhassan@hotmail.com

To turn the boredom of 'chalk and talk' into an exciting expedition for intellectual discovery and skills development, this talk will focus on how multiple authoring tools can be integrated to create engaging in-class and online learning experiences. Through exploring ways for animating interactive contents and gamifying practice, attendees will experience how to enliven physical and virtual learning environments with the sparks of competitiveness, collaboration, motivation and enjoyment.

## Small changes to shift classroom learning culture

TAMARA KELLY, PAULA WILSON (York University), tljkelly@yorku.ca, pjwilson@yorku.ca

Helping students learn how to learn is an increasingly important part of higher education. We have implemented strategies to help students develop foundational approaches to learning (Just-in-Time-Teaching questions to each pre-class quiz, which were followed up by in-class practice problems and explanations; a module on the study cycle supplemented by mini-lectures and exam questions; post-midterm reflections/exam wrappers ) and anxiety management (short guided meditation at the beginning of each class, which was related to strategies students could use during exams). This session will focus on the implementation of these strategies in large classes, some outcomes, as well as tips so that others might easily use them.

## La prise de décisions pédagogiques appuyée sur les données locales de sources multiples : analyse réflexive sur l'implantation d'une pratique professionnelle en CAP

ANDRÉ VILLENEUVE, YAMINA BOUCHAMMA (Université Laval), andre.villeneuve.2@ulaval.ca, Yamina.Bouchamma@fse.ulaval.ca

Cette communication présente les résultats d'une démarche réflexive d'un praticien-chercheur (Leitch & Day, 2000; Albarello, 2004) portant sur l'implantation d'un processus de la prise de décisions pédagogiques appuyé sur les données locales de sources multiples qu'il a développé dans une communauté d'apprentissage professionnelle au secondaire. Les analyses en mode écriture et thématique (Paillé, 2007) ont permis d'identifier sept facteurs qui ont contribué à implanter le processus. La discussion porte sur la conception et le développement d'un système d'aide à la décision, projet sur lequel la communauté travaille actuellement.

## Identity (net)working to support minoritized STEM students

HANNAH CHESTNUTT, ALLISON GONSALVES (McGill), hannah.chestnutt@mcgill.ca, allison.gonsalves@mcgill.ca

Research has suggested that social interactions experienced by university students and instructors have an impact on the availability of identity resources needed to promote more equitable education practices. This presentation will report on a project regarding the identity resources accessed by instructors and students involved in a Women Physicists Group (a pseudonym). Our data suggests participation by faculty in this network can provide resources for students to position themselves as insiders when studying physics.

## Undergraduates can publish too! Biology writing assignments leading to publication.

CHIARA GAMBERI, KATHARINE HALL (Concordia University), chiara.gamberi@concordia.ca katharine.hall@concordia.ca

Critical inquiry and writing skills are fundamental in scientific and professional careers. This can however be difficult to teach at the undergraduate level. A new assignment type was designed and implemented in upper-level biology courses with enrollment of 100+ students. Teams were guided through literature research and result synthesis, to write a scientific review. Supervised volunteer student editors finalized the manuscript. To model an exemplary process of publication, the entire class was kept informed of the developments in real time. Two articles have been already published in a peer-reviewed journal and several more are in preparation.

## Group First - New methods of two-stage exams implementation in organic chemistry

LAURA PAVELKA (McGill University), laura.pavelka@mcgill.ca

Two stage exams are becoming common practice in the active learning community. The traditional approach is to have an individual exam, followed by a group exam, where students "redo" some of the individual exam questions together. My approach turns this around, where the group portion is done before the individual exam. The aim is to cover broader, conceptual topics during the group exam, that really encourage discussion and can help clarify ideas before entering the individual exam. The general process, as well as student data and feedback will be presented.

## CRE-ate: Bringing Research Experience to Undergraduate Lab Courses

VERONIQUE BRULE, HUGO ZHENG, RODRIGO REYES-LAMOTHE (McGill University), TAMARA WESTERN, PAUL HARRISON, veronique.brule@mcgill.ca, hugo.zheng@mcgill.ca, rodrigo.reyes@mcgill.ca, tamara.western@mcgill.ca, paul.harrison@mcgill.ca

Course-based Research Experience (CRE) is an alternative to traditional laboratory internships that affords a broader student population the opportunity to engage in open-ended research. Unfortunately, large class sizes (>150 students) pose a challenge to integrating CREs at post-secondary institutions. Here, we describe a CRE-based framework specifically developed for high-enrolment laboratory courses, and discuss preliminary data evaluating the impact of this framework on student learning in an upper-year undergraduate laboratory course at McGill University.Evaluation tools include the Colorado Learning Attitudes About Science (CLASS) Biology survey, the Science Laboratory Environment Inventory (SLEI), and qualitative data analysis of end-of-term student course evaluations to

assess changes in student engagement and attitude toward learning in STEM, as well as the validated Biological Experimental Design Concept Inventory (BEDCI) to assess changes in student understanding of course material.

## Leveling-Up Higher Education With Warp Zones

NADIA NAFFI (Université Laval), ANN-LOUISE DAVIDSON (Concordia University), NDÈYE ROKHY DIONGUE (Université Laval), Nadia.Naffi@fse.ulaval.ca ann-louise.davidson@concordia.ca, ndeye-rokhy.diongue.1@ulaval.ca

What happens when we transform graduate students' learning environments into simultaneous warp zones? It enables us to take what we usually define as distinct learning spaces and mode of delivery and make them interchangeable interaction and collaboration dimensions. In this presentation we will share two cases in which we applied the concept of "warp zones" in learning experience design and the pedagogical approach we adopted, and discuss the challenges we faced and the lessons we learned.

## Exploring policies, rules and regulations for for digital devices in K12 schools

GIULIANA CUCINELLI, LEELAN FARHAN (Concordia University), giuliana.cucinelli@concordia.ca, leelan.farhan@gmail.com

This paper brings forward the results from a study which explores how digital devices (smartphones and tablets) are being used and for what purposes in K-12 schools in Quebec and Ontario (Canada).

## How Wakata transformed my classroom

JACQUES LE NORMAND (Wakata), jacqueslenormand@gmail.com

I developed the Wakata Javascript development learning platform based on the perceived student difficulties while I was teaching software development at Concordia Bootcamps. This online learning platform significantly improved learning outcomes and increased the breadth of topics covered. The platform is based on a unique curriculum, is largely gamified and introduces several innovative user interfaces. In this talk I will present some of the unique challenges in programming education and how digital learning tools such as Wakata can significantly help students overcome those challenges.

## Co-learning about Artificial Intelligence, digital citizenship and the ethics of technology in the classroom

KATE ARTHUR (Kids Code Jeunesse), hannah@kidscodejeunesse.org

Artificial Intelligence is changing the world around us at an unprecedented speed, but schools and policy-makers are struggling to keep up with the change. At Kids Code Jeunesse (KCJ), we are teaching both children and teachers not just what the technology does, but how it works, the influence it has on the wider world - and some of the ethical questions it raises.

## Fostering Intercultural Competences for International Virtual Engineering Student Teams (InVEST): A Knowledge Community and Inquiry (KCI) Approach

ANULI NDUBUISI, RUBAINA KHAN, ANULI NDUBUISI (University of Toronto), anuli.ndubuisi@mail.utoronto.ca, rubaina.khan@mail.utoronto.ca anuli.ndubuisi@mail.utoronto.ca

Engineering students require intercultural learning, a global competence concept, necessary for engineers to work in complex global projects. The inVEST project is aimed at bringing globally-dispersed engineering students to engage in cross-institutional and collaborative project-based learning. This paper introduces the use of the Knowledge Community and Inquiry (KCI) model to develop a course to assist students to gain an appreciation of diverse cultures and collaborate on a project to co-construct new cross-cultural understanding.

## Corriger avec un cellulaire pour orienter la réussite étudiante en arts visuels

STÉPHANIE GRANGER, JULES MASSÉ (Cégep Saint-Jean-Sur-Richelieu) stephanie.granger@cstjean.qc.ca, jules.masse@cstjean.qc.ca

Stéphanie Granger (enseignante en Arts visuels) corrige avec un téléphone cellulaire. Elle utilise un formulaire en ligne pour produire des fiches de rétroaction. L'évaluation et la rétroaction sont simplifiées par ce dispositif. L'étudiant retrouve tous ses documents ainsi que les fiches de rétroaction sur une même plateforme (au choix). C'est avec la complicité de Jules Massé (conseiller pédagogique TIC) qu'elle a pu rassembler divers outils et en exploiter la portée pédagogique.

## Active Learning Designs for Calculus: approach, patterns and impact

XINLI WANG (University of Toronto), YANHONG LI (University of Munich) JIM SLOTTA (University of Toronto), DAI JINJUN (Central China Normal University), xinliw.wang@utoronto.ca, Yanhong.Li@psy.lmu.de, jslotta@gmail.com

In this presentation, we describe an exciting new approach to active learning in a university calculus class. We designed new patterns of collective inquiry, informed by a theoretical model called Knowledge, Community and Inquiry (KCI). We present several new collective patterns in an ongoing design study, and discuss students' epistemological beliefs.

## Why this app? How educators choose a good educational app

ARMAGHAN MONTAZAMI, HEATHER A. PEARSON, ADAM K. DUBÉ (McGill University), armaghan.montazami@mail.mcgill.ca, heather.pearson@mail.mcgill.ca, adam.dube@mcgill.ca

The study targets children's math apps and investigates which features educators value when selecting apps. Through an eye-tracking experiment, participants are presented with 10 artificial math apps. Five including one key educational benchmarks and five containing educational buzzwords. They provide a value judgement of each app by deciding to download the app or not, rating them, stating how much they pay, and explaining their choices. Eye-tracker identifies which parts of the templates capture their attention.

## Engaging students through technology

SAM BRUZZESE (McGill University), sam.bruzzese@mcgill.ca

Join my hands-on session where you will get to play with and interact with 2 'free' apps that have changed my teaching practice in my undergrad and grad classes this past year. You will learn how to use @Perusall when assigning class readings and I will also introduce you to @PearDeck which is a 'free' add-on for Power Point or Google Slides. You will leave the workshop with everything you need to know to start using the apps next fall. Love forward to seeing you in June!

# *Engaging the Learner*

## Cell phones in the classroom : Yes or No ?

MADONA MOUKHACHEN, BRUNO POELLHUBER (Université de Montréal), madona.moukhachen@umontreal.ca, bruno.poellhuber@umontreal.ca

The majority of students bring their cell phones in the classroom. Although the use of cell phones in the classroom carries the risk of distraction, plagiarism and inequality among students, they can be utilized as part of the learning experience to promote learning and success. A research was carried out in winter 2019 that explored the use of cell phones in post-secondary classrooms. Teachers and students perceptions on the use of cell phones and classroom management were analyzed. The results will be presented in this talk.

## Teaching the social considerations of materials engineering through podcasts

MICHAEL WOOD, ANNE-MARIE KIETZIG, MARIA ORJUELA-LAVERDE (McGill University), michael.wood3@mail.mcgill.ca, anne.kietzig@mcgill.ca, maria.orjuela-laverde@mcgill.ca

The act of materials engineering brings about many ethical and social considerations. This is especially true when the engineer starts to consider the end-of-life of their design. Nonetheless, traditional materials engineering classes seldom give the student an opportunity to reflect on these important issues. Here we present our efforts to incorporate some social considerations of materials engineering in a chemical engineering class through the recording of podcasts and subsequent recall exercises.

## Posture in College Students: A quantitative analysis of the relationships between body alignment, physical fitness and lifestyle habits.

JOANNA FARMER (Dawson College), jfarmer@dawsoncollege.qc.ca

During the fall 2019 semester at Dawson College, 502 students participated in a study on posture, fitness and lifestyle, entering their data using their cell phones directly to an excel microsoft sheet for analysis. The main conclusions of the study are: 1. posture and fitness are codependent - students with good posture had better fitness results; 2. cell phone usage is creating a new techno-posture; 3. underweight not overweight is a significant deterrent to good posture; 4. there are gender differences in the effects of lifestyle factors such as sitting, stress and depression on posture.

## Improving students' understanding of the Nature of Science and supporting STEM identity development in a Grade 11 Biology class: A learning community approach

ELENA BOLDYREVA, JAMES SLOTTA (University of Toronto), elena.boldyreva@mail.utoronto.ca, jim.slotta@utoronto.ca

We report on an on-going study of a Grade 11 Biology classroom, focused on students' understanding of Nature of Science (NOS) and their development of STEM identity and career directions. The Knowledge Community and Inquiry (KCI) model is applied to design a curriculum addressing a diet and nutrition theme. Students work together in a technology-enhanced learning environment to co-construct understandings of NOS, build connections to real-world issues, and to explore their STEM identities and careers.

## Lecture in the Dorm Room, Homework in the Classroom: The Effects of Flipped Instruction on EFL Students' Exam Performance

SARA DJAMÀA (Université du Québec à Montréal (UQÀM)), djamaa.sara@uqam.ca

This presentation reports on the results of an empirical study that successfully incorporated flipped pedagogy into English as a Foreign Language (EFL) classes to improve students' exam performance. Flipped participants walked away from the study with higher exam gains than their non-flipped counterparts. These findings proved the effectiveness of flip teaching in EFL contexts and call for further research into its pros and cons.

## Better learning of calculus concepts through more active learning: details of a teaching methods comparison study

WARREN CODE, COSTANZA PICCOLO (University of British Columbia), warcode@science.ubc.ca, costanza@math.ubc.ca

We will discuss results from a careful comparison of large-class teaching methods where one sections instructional choices encouraged more active learning (clicker questions, small-group discussions, worksheets) during a significant amount of class time, building on assigned pre-class tasks. This will include examples of student misconceptions and the assessments we used to reveal them, as well as some of the teaching approaches we've used in (usually large) classes informed by existing research on student learning of undergraduate mathematics. For details, see: Code, W., Piccolo, C., Kohler, D., & MacLean, M. (2014). Teaching methods comparison in a large calculus class. ZDM, 46(4), 589–601.

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## Advancing Creativity in Postsecondary STEM Contexts: Students' Understandings and Experiences of Creativity and Risk in Science Learning

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Students are resistant to engage in active learning and creativity due to a perceived risk of failure. The goal of this research project is to address the student perspective on supportive classroom environments and identify whether there is a disconnect between what scientific creativity means to educators and students. Undergraduate STEM students generally defined scientific creativity into the following categories: trying something new, presenting knowledge to others, engaging in activities, expansive thinking, and pursuing passions. The risks students take in classroom settings were also found to generally fall within the following categories: stepping outside of comfort zone, participating in activities, asking and answering questions, and the pressure to achieve grades.

## Embodying your learning journey, from an inside-out perspective

GENEVIÈVE EMOND (MUZA - Creative Educational Solutions), SONIA DI MAULO (Harvest Performance), emondgenev@gmail.com, sonia@harvestperformance.ca

In order to support students in their learning journey, we combine two successful experiences: one using a model of growth for emerging leaders; another at the interface between embodiment (relation to our own body, others, and environment) and teaching/learning . Could students benefit from these approaches to support their learning journey? Could they be encouraged to achieve their goals, together with their peers, while maintaining their well-being? How could we all benefit from their actions?

## Process of Science and the Power of Teaching Tools

NANOUK PARÉ (John Abbott College), LAURA PANKRATZ (Perimeter Institute), nanouk.pare@johnabbott.qc.ca, lpankratz@perimeterinstitute.ca

An essential part of preparing students for the future is ensuring that they are scientifically literate. The process of science has to do with the habits of mind practiced by scientists that lead to discoveries. We need to teach our students how to become successful learners. Teaching tools will lead students through learning experiences, activating prior knowledge, establishing a foundation, deepening their understanding, and reflecting their learning – all while they demonstrate their thinking.

## Biological Engineering of Yeast Cells as a Pedagogical Tool

CHRISTOPHER GREGG (Vanier College), greggc@vaniercollege.qc.ca

A team of student researchers from Vanier College participated in a project to engineer the yeast, Saccharomyces Cerevisiae, to express a gene involved in the production of an opioid like molecule called noscapine. Students developed many coveted skills in the field of synthetic biology and had the opportunity apply skills and knowledge they learned throughout their education. This talk will look at the data obtained from this research and discuss how research projects like this can be used to teach competencies in the CEGEP Science Program.

## Perimeter Institute: Process of Science and Tools for Teaching Science

LAURA PANKRATZ (Perimeter Institute), NANOUK PARÉ (John Abbott College), lpankratz@perimeterinstitute.ca, nanouk.pare@johnabbott.qc.ca

An essential part of preparing students for the future is ensuring that they are scientifically literate, have the habits of mind practiced by scientists, and become successful learners. A new resource from Perimeter Institute, Tools for Teaching Science, will help them to activate prior knowledge, establish a foundation, deepen their understanding, and reflect on their learning while they demonstrate their thinking. Perimeter Institute resources (resources.perimeterinstitute.ca), developed by physics researchers and classroom teachers, are designed to help.

## Project-based Learning: Lessons Learned from a First Year Integrated Science Course

GREGOR KOS (Concordia University), gregor.kos@concordia.ca

Project-based learning activities allow students to apply learned concepts in a hands-on, real-life fashion and reflect on outcomes obtained. As part of an interdisciplinary first year seminar in "Integrated Science" with a focus on environmental pollution, students prepared and spent a day collecting samples from an abandoned mine site. This presentation describes how the activity allowed students to discuss the environmental and health impact of the obtained concentration levels (chemistry, biology) based on data visualisation and statistical analysis.

## Pushing the boundaries of maker fundamentals to unleash innovation in higher education Education

ANN-LOUISE DAVIDSON (Concordia University), NADIA NAFFI (Université Laval), NATHALIE DUPONSEL (Concordia University), HOUDA JAWHAR, IVAN RUBY, FARNAZ GHOLAMI ,ANIKLET ZEFI, CLARISSA VERISH, BOJANA KRSMANOVICH, ABE KAMEL, annlouise.davidson@gmail.com, nadianaffi@gmail.com, nwduponsel@gmail.com

Makers will present their last year of work in makerspaces. After identifying the fundamental knowledge to engage in maker activities with creative confidence, they developed learning experiences at the intersection of health, biology, music, material futures, gaming and robotics. They will present their results in the format of a curated series of intermediate and advanced maker workshops to further the development of 21st century skills including problem-solving, risk-taking and sticking with the trouble.

## Keys to the Multimedia City: Leveraging open educational resources (OER) to produce affordable, flexible and interactive course materials for students

CHLOE LEI, CRISTINA SANZA (Concordia University), chloe.lei@concordia.ca, cristina.sanza@concordia.ca

Open Educational Resources (OER) allow educators to customize openly-licensed materials (e.g. open textbooks) to fit their courses, which enable huge cost savings for students. A team of journalism faculty at Concordia University is creating an open textbook for a capstone journalism course that will serve as a hands-on, interactive resource on multimedia journalism. Funded by the Concordia OER grants, the final product will be freely available and accessible, benefiting students taking the course and beyond.The presentation will outline the process and challenges involved in designing an interactive journalism textbook, and how the material will be applied to teach students in a hands-on, participatory way.

## The Teaching-Learning Pyramid

VICTORIA NESNICK (Hofstra University), Victoria@VictoriaNesnick.com

The Teaching-Learning Pyramid depicts the professor's six steps/roles of effective teaching which result in his/her students' six steps/roles of effective learning: 1) Manager-Focused 2) Communicator-Prepared 3) Coach-Encouraged 4) Educator-Informed 5) Partner-Supported 6) Evaluator-Successful. A system of self-efficacy ("I can do it!") statements function as the driving force behind each step.

## The Benefits of Teaching using a Common Electronic Portfolio in the Arts and Communication Program

HELENE ROMPRE, MARC-ANDRÉ BARSALOU, YVAN TÉTREAULT (Collégial international Sainte-Anne),
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What are the strenght and weaknesses of using an electronic portfolio as a tool to develop the student's creativity and IT skills, to create active learning activities and an effective peer-review system? Three teachers of Collegial international Sainte-Anne will lead a discussion on the use of this tool, its possibilities and its limits.

## Resist Violence Exhibit:

PAT ROMANO, KIM SIMARD (Dawson College)

Throughout the past 4 years, students engaged with the Resist Violence Pedagogy have found artistic ways to inspire, provoke and enlighten audiences. With a group of alumni, we have curated a few works of artistic resistance that we would like to share with the SALTISE community through an interactive exhibit. Using screens, video installations, tablets for interactive web-based projects and printed works displayed around campus, we would like to involve participants in a virtual dialogue with alumni about the impact the Resist Violence Pedagogy has had on their lives today. With mobile phone activated augmented reality, the works will be accompanied by online interviews (audio and/or visual) where students are asked to reflect on the pieces and experiences with the pedagogy.

Technology Required:

Exhibit would require a display board to place printed materials. We have iPad and stands with iPads, but may need permission to place them around campus. Access to communications screens in certain areas, like lobbies or areas where conference participants may mingle would be required.

## CryptiQ Classroom: An Educational Escape Breaking into Active Learning

JESSICA CHAMBERS, SHELAGH ROBINSON (Dawson College),
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The CryptIQ Classroom Educational Escape game is an adaptable digital/analog application which encourages active learning. This flexible application allows instructors to enter course information, such as group size, time limits, vocabulary, and page numbers, into an adaptable interface. These elements are then configured into a custom EE Manual (with printable Story Line, Characters, Instructions, Puzzles, Codes for Cracking) that are saveable. The CryptIQ classroom is customizable for any subject matter, discipline, or student learning level.

## Best Practices on Refugee Education in Canada

NARJES HASHEMI (McGill University),
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In this paper, I briefly discuss barriers to education for refugees in Canada. I also discuss what has been done so far in terms of refugee integration in regard to education and credential assessment on a national scale. Then, a summary of best practices, that are currently in place in three provinces of Ontario, British Columbia and Manitoba are included.

## Study behaviours of international graduate students - A Canadian perspective

HELEN MARTIN, ARMIN YAZDANI, VALERIE BOURASSA, CASSIDY VANDERSCHEE (McGill University),
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Universally, the past two decades have seen a paradigm shift in the science of higher education. This shift from teacher-to-student-centered learning approach largely prevails at the scholarship level than routine practice. Furthermore, factors including higher enrolment rates lead to a rapidly diversifying student population. This increase in diversification has significantly influenced how key stakeholders perceive teaching and learning. We will facilitate dialogues around effective and innovative interventions to enhance the metacognitive skills of international students and successfully prepare them for navigating the Canadian teaching and learning landscape.

## Analyse des données et apprentissage automatique : nouvelles orientations à la suite de l'EDUsummIT 2019

SEVERINE PARENT (UQAR) MICHELLE DESCHENES (Université Laval) severine_parent@uqar.ca, michelle.deschenes.1@ulaval.ca

La présentation abordera les travaux des groupes de travail traitant de lanalyse de lapprentissage (learning analytics) et de lapprentissage automatique (machine learning) de lévènement EDUsummIT 2019. Il importe daborder les répercussions pédagogiques et éthiques de lutilisation des données. Deux chercheuses qui ont participé aux discussions partageront les réflexions, recommandations et implications pour léducation. Des exemples dutilisation de lanalyse de lapprentissage et de lapprentissage automatique seront présentés et les répercussions de leur intégration seront discutées.

### Model UN & Experiential Learning: Implementing Simulations in the Cegep Classroom Engaging the Learner

CHRISTOPHER BOURNE, CAROLINE CHOCHOL, JULIE JOHNSON (Dawson College), cbourne@dawsoncollege.qc.ca, cchochol@dawsoncollege.qc.ca, jjohnson@dawsoncollege.qc.ca

Simulation-based learning activities are an important way to engage students in course material. Our research confirms that Cégep students benefit from simulation-based pedagogy and the skills acquired during classroom-based simulations are important for students continuing their studies in university. In this session we will present the latest research into the pedagogical value of in-class simulations as a learning activity, and incorporate our own experiences implementing simulations in various courses, including History and interdisciplinary Methodology courses.

## *Learning Analytics = AI*

### Les environnements immersifs au service des apprenants : un partenariat innovant pour la réussite scolaire des élèves ayant des difficultés d'apprentissage.

MARIÈVE BLANCHET, PHILIPPE CHAUBET, FABIENNE VENANT (Université du Québec à Montréal), VÉRONIQUE CARBONNEAU, STÉPHANE VILLENEUVE, GENEVIÈVE CADORET, blanchet.marieve@uqam.ca, chaubet.philippe@uqam.ca, venant.fabienne@uqam.ca

En partenariat avec l'école Lucien-Guilbault et la compagnie LÜ, un projet visant l'adaptation de jeux immersifs pour des élèves ayant des troubles graves d'apprentissage a été mené. Les effets de l'utilisation des jeux immersifs dans un environnement spatial intelligent qui comprend et réagit aux comportements et aux interactions des élèves en temps réel, ont été évalués sur la participation et l'engagement moteur des enfants, leur apprentissage du plan cartésien et leur mémoire visuo-spatiale.

### Exploring learning contexts of computer programming in a makerspace setting

IVAN RUBY, ANN-LOUISE DAVIDSON (Concordia University), ivan.ruby@mail.concordia.ca ann-louise.davidson@concordia.ca

Makerspaces are collaborative environments with an ethos of DIY, in which participants informally work on innovative projects, learn to use a variety of tools and share ideas. In our own makerspace, #MilieuxMake, a series of activities associated with computer programing take place, from multi-session workshops to impromptu explanations about the design of a particular project. In this presentation, we discuss our analysis of how participants learn programming in various contexts and offer recommendations for practice.

### Smartphone's in the Classroom: A new tool for inclusion

ROSIE ARCURI (Dawson College), roarcuri@dawsoncollege.qc.ca

Smartphones in the classroom can be a main distraction but also the ultimate tool for inclusion. This talk will briefly discuss how smartphones can assist in reading, writing, accessing information, note taking, organization, and yes, even increase focus.

### Developing Maker Skills Through Electronic Fabric

HOUDA JAWHAR, ANN-LOUISE DAVIDSON (Concordia University), houda.jawhar@concordia.ca ann-louise.davidson@concordia.ca

How many stitches and ohms do you need to knit a 6 by 6 sound-reactive-neopixels piece? Answering this simple question took over 2 months of experimentation and iterations on a small piece of fabric. It allowed us to study the process of developing advanced maker skills that meet the demands of the 21st century. In this presentation, we will reveal our project "Fabric of #MilieuxMake" and discuss the process of developing maker skills through electronic fabric.

## *Professional Development*

### Eliciting and responding: Shifts in novice teachers' noticing of teaching practice in math

VANDANA CHANDRASEKHAR (McGill University), vandana.chandrasekhar@mail.mcgill.ca

Mathematics teachers are encouraged to use teaching practices like eliciting and responding (E&R) to student's thinking to engage with student's ideas to develop a deeper understanding of content. To learn this practice, teachers need to start noticing it. This study examines how five novice teachers (NT) noticing of E&R develops over the course of their teacher education program. For this purpose, NTs reflected on E&R moments noticed from their own lesson.

## Supporting faculty supervisors to foster the reflective practice of student teachers

EVA MARY BURES, AVRIL AITKEN (l'Université Bishop's), ebures@ubishops.ca aaitken@ubishops.ca

This action research study explores how to support faculty supervisors who supervise student teachers during practicums to foster their student teachers' reflective practice. The research involves a formative evaluation of the project to improve it in subsequent years and also to inform the literature on approaches to sustain reflective teaching practices through the development of a community of practice supported by the use of computer mediated communication involving student teachers, faculty supervisors, and instructors.

## Reimagining climate change pedagogy across the disciplines

JESSICA BURPEE, TOM YOUNG (John Abbott College), jessica.burpee@johnabbott.qc.ca tom.young@johnabbott.qc.ca

The purpose of this presentation is to show how cross-disciplinary collaboration at John Abbott College was used to address a major gap in the Quebec college curriculum: climate change. For Global Climate Change Week we got as many teachers as possible to include climate change in their classes, using a range of approaches including online collaboration through Teams (Office 365), a student-run climate carnival, and a Climate Geo-pardy powerpoint developed by Concordia graduate students.

## Exploring the Role of Post-Secondary Instructors in Promoting Student Mental Health

KIRA SMITH (McGill University), kira.smith@mail.mcgill.ca

Post-secondary instructors are uniquely situated to promote student mental health – they are in direct, regular contact with students – yet no research has been conducted to directly study how instructors engage in this work. This session will detail master's research conducted on instructor promotion of student mental health at McGill, culminating in a discussion of lessons learned and practical strategies that can be implemented. Attendees will be invited to consider the (small) ways they can meaningfully infuse mental health promotion into their work in teaching and learning.

## PolyTeam : Quand l'intelligence artificielle s'invite dans le processus de formation d'équipes

LÉVIS THÉRIAULT, OLIVIER GENDREAU, FRANÇOIS GUIBAULT (Polytechnique Montréal) levis.theriault@polymtl.ca, olivier.gendreau@polymtl.ca, francois.guibault@polymtl.ca

La formation de l'ingénieur met de plus en plus l'accent sur le développement des qualités professionnelles des futurs ingénieurs. Parmi ces qualités, la capacité à travailler en équipe apparaît comme une compétence incontournable qui doit être développée par la pratique. Former des équipes représente cependant un défi tant pour les étudiants que pour les professeurs. Le système logiciel PolyTeam intègre plusieurs outils et méthodes intelligentes afin de former des équipes de travail productives et performantes.

## Quick Last-Minute Fixes: Making Your Word and PowerPoint Documents Accessible

CATHERINE FICHTEN (Dawson College), MARY JORGENSEN (Adaptech Research Network), ALICE HAVEL (Dawson College, Adaptech Research Network), CHRISTINE VO, cfichten@dawsoncollege.qc.ca, MJORGENSEN07@ubishops.ca, ahavel@dawsoncollege.qc.ca, christine.vo@hyperqube.ca

Most of us want to ensure that our course materials are accessible to all our students, including those with disabilities. A course on accessibility is not always feasible or of interest. Here we will describe why accessible documents are important and we will show you two brief (< 6 minute) videos on how to make Office365 Word and PowerPoint documents accessible. We also provide the URLs so you can view these whenever you need to.

## Systematic analysis of student evaluations as a tool for pedagogical improvement

NICOLE PERKINS, MAXIME DENIS (McGill University), nicole.perkins@mail.mcgill.ca maxime.denis@mcgill.ca

End-of-semester course evaluations allow students to provide feedback on courses and suggestions for improvement. Thorough utilization of student suggestions may increase both quality of teaching and student satisfaction. We propose a systematic qualitative data analysis approach, using the MAXQDA software system, for improving courses based on student course feedback. This generates logical guidelines for identifying areas for improvement and streamlines decision-making to improve the quality of teaching.

## A DIY Lightboard to Create engaging Educational Videos

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A lightboard is a piece of lighted plexiglass used as a writing surface in educational videos. It enables the instructor/presenter to face the camera while writing on the board, thus allowing for the creation of personalized and engaging videos. The presentation focuses on our experience with the lightboard we built at Vanier using a Saltise Mini-Grant of 1300 dollars.

More expensive lightboards usually are built with glass, as the Plexiglas is easy to scratch. Indeed, after about 20 videos, our lightboard started to have several scratches. However, with a white background (most other lightboards use dark backgrounds) and the presenter wearing light colours, those scratches are almost invisible in the videos.

A survey of the students revealed that the majority found the produced videos useful. However, they equally liked videos where the teacher is standing in front of a traditional whiteboard or performs some demonstrations.

More details on the project and the links to the videos can be found here:

https://www.saltise.ca/innovations/mini-grants/a-diy-lightboard/

# *Symposia Session*

*ACTIVE LEARNING PRACTICES & STRATEGIES*

## Getting Your Feet Wet in an Active Learning Classroom

JOHANNE RABBAT (Dawson College), MARJAN HEYWOOD,
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This panel, composed of teachers who are new to the active learning classroom, will discuss some of the challenges and rewards in teaching an AL classroom for the first time. Since a variety of factors are at play in AL environments, the challenges encountered relate to all aspects of teaching in these new environments, including teacher and student expectations and understanding of the space, the orchestration of activities, the disposition of the classrooms, as well as equipment set-up and activity design. The rewards on the other hand are great and despite our struggles, we will highlight the things that have made the effort worth it.

*ENGAGING THE LEARNER*

## Active student engagement - Developing Campus Green Space: An interdisciplinary, inter-collegial, virtually supported project

DAVID HOIDA (Vanier College), GABRIEL FLACKS (Champlain College / linkr) hoidad@vaniercollege.qc.ca, gabriel.flacks@linkreducation.com

Small changes can truly make a big impact! Creating an opportunity for students to collaborate across disciplines and colleges fostered a process where students engaged in hands-on learning activities that built an awareness of key elements critical for successful environmental sustainability. Champlain Colleges students in a Humanities class focused on sustainable development explored various aspects of sustainability that could impact upon their campus. Concurrently, Vanier Botany students were developing expertise on various green sustainability practices, most notably permaculture farming, which could be used when considering greenspace expansion on a college campus. These students through a digital platform designed to house their courses, assignments, and facilitate interaction, communicated throughout the semester in an effort to realize sustainable college campus proposals for both Vanier and Champlain. These proposals were also supported by Vanier Biology students who, through a series of ecology labs created soils analysis reports based on samples from both colleges. The Biology students integrated with the other students groups by participating in the virtual exchanges and providing key information needed for successful sustainability proposals. Our presentation goal is to demonstrate how we used interdisciplinary perspectives and student collaboration in a hands on learning opportunity to create high levels of student engagement. Also, how critical to the success of the project was the design of the learning activities that reminded students of how they were vital to a collaboration effort that, if successful, would realize true campus sustainability development and community betterment. It will be a pleasure to presents the pedagogical approaches, learning activities, and the virtual space that facilitated the creation of student proposals for campus green space expansion, as well and the current status/realization of said proposals.

*ENGAGING THE LEARNER*

## Beyond Jeopardy: Enriching student learning and engagement through simulation and role-playing

CATHERINE ROY, CATHERINE BRAITHWAITE, CHRIS WHITTAKER (Dawson College)

Sitting on the metro watching someone play Scrabble next to you; turning on the TV after supper to watch Jeopardy; telling the kids it's time to turn off the Nintendo - games are a part of our daily lives. But how can we tap into this engrossing medium for better engaging our college-level students? Explore ways teachers from varying disciplines using different media are applying gaming principles to create authentic learning experiences using simulation and role-playing to enhance learning and engagement in the college classroom.

Gamification applications in education often focus on the game itself: how can we plug our content into a game format? While playing Jeopardy might be an effective way to review content for basic knowledge acquisition, it might not lend itself so well to the higher-level thinking that we often want our students to engage in. The most effective games have players assume an identity, explore the game environment, experience consequences for their choices and actions, and enact a meaningful narrative. Replace the word player with student and you have the components of an effective simulation experience for the classroom. Getting from engagement to effective learning however, is dependent on careful design of the various stages of a simulation activity to encourage students to explore and reflect on the perspectives of various stakeholders and ensure learning happens as a result of the experience.

In this conference, participants will discover different applications of role-playing and scenario-based learning by teachers from various disciplines at Dawson College. Online or in the classroom, students are immersed in a role-playing environment where they work through scenarios that are carefully-designed with specific learning objectives built in for students to uncover on their journeys.

*ACTIVE LEARNING PRACTICES & STRATEGIES*

## Active learning and 3D competency in a complex approach

PIERRE BAUDRY, MATHIEU ST-JEAN (Collège Montmorency), VINCENT SICOTTE (independant auditor), pbaudry@cmontmorency.qc.ca Mathieu.St-Jean@cmontmorency.qc.ca

A developmental action research, this project tried to validate the credibility, reliability and efficiency of a pedagogical strategy, by putting it in use in a controlled context, relying on a triangulated mixed methodology. The data collected has allowed us to validate the strategy but has highlighted the need to simplify its parameters, and to refine its collecting instruments.

In a first semester collegiate course, this pedagogical strategy has proven itself efficient in promoting the development of three-dimensional competencies. One of the principal feature of this strategy is the importance given to the pedagogical activities targeting the development of know-how (procedural knowledge) that allows the students to be thrust in action while relying mainly on their personal knowledge base (myths and realities), with a contribution from electronics (telephones, tablets, computers) to fill the declarative gaps.

In an effort to break the cycle of shallow learning strategies for assessment purposes, this strategy also emphasizes a didactical selection that greatly reduces the amount of contents targeted by the course in order to allow more time to be devoted to complex thinking activities. These activities tend to favor the establishment of clear links between the various elements of the curriculum, rather than the traditional learning by heart. A lot of importance is also given to the constant reminding of the object of the learning process, so that the global picture is ever present in the student's mind.

The strategic use of active learning pedagogy, including many types of socioconstructivist activities, also promotes the sharing of academic competencies within the class group and contributes to heighten the performance level, mainly for the most vulnerable part of the group. This strategy has therefore a tangible impact on their intrinsic motivation, and on their success.

*PROFESSIONAL DEVELOPMENT*

## Assiniboine Community College's Journey to Active Learning

BRIAN COX, CHRIS BELL, DEREK FORD (Assiniboine Community College), coxb@Assiniboine.net, bellc2@Assiniboine.net, FordD@Assiniboine.net

This is the story of how ACC discovered Active Learning, partnered with SALTISE, gathered a coalition of the willing, designed and built a High-Tech Active Learning classroom, and created an Active Learning community at our college. Hear from instructors and an educational technology specialist that were directly involved in the journey from start to finish. Take a look at the initial high-tech room plans, construction phase, and final product. Learn from our experience and mistakes. Take home some tips to build your own community of active learners.

*PROFESSIONAL DEVELOPMENT*

## Cognitive and behavioural approaches to successful classroom transformations

SARAH MARSHALL (McGill University), sarah.marshall@mail.mcgill.ca

The development of a university instructor is a complex one, a result of the combination of several factors including the instructor's undergraduate training, area of interest, former teachers who left impressions, as well as luck or opportunity in terms of employment and career pathway. In mid-career, I transitioned into the role of faculty member in a university program, and I realized that I was inadequately prepared to instruct today's student group: my knowledge and enthusiasm for my subject areas were not enough to successfully inspire and stimulate learning among the students in my classes. Teaching methods that are based on pedagogical best practices, that is, theoretically grounded, have been shown to have better success than methods that are not. However, it is not enough for researchers to explore best practices in classroom teaching, such as active learning strategies, and expect teaching behaviours to change. The literature indicates "… research on teacher learning is mostly concerned with teachers' change in cognition, as if behavioural change automatically follows from a change in cognition". Behaviour change in any situation is a challenge; it requires less energy to carry on with a familiar task than to modify that task. Self-efficacy is a key concept in the development of an instructor, thus I discuss to what extent self-efficacy plays a vital a role in the development of an instructor. The degree of readiness for behaviour change is relevant also, as it helps identify specific opportunities for modifications of classroom strategy that may be self-identified by the participant, thus improving engagement. In this presentation, I discuss approaches incorporating instructors' feelings of self-efficacy, and the continuum of readiness for behaviour change, a novel approach to integrating the best practices of using new pedagogies such as active learning approaches and flipped-classrooms, in a university program.

*ACTIVE LEARNING PRACTICES & STRATEGIES*

## Incorporating Active Learning with Exam Wrappers in effort of Enhancing Students' Learning

IBRAHIM EL BOJAIRAMI, MARK DRISCOLL (McGill University)
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Intro: The use of exam reflections is a plausible strategy to help students acquire metacognitive skills. Active learning is also commonly used, where the students actively engage in the class, and among each other, to answer a specific question or deeply understand a concept. The purpose of this study was to expand the case study of exam-wrappers, presented at SALTISE2019, combine it with active learning, to investigate the overall effect on students' metacognition. Methods: The implementation and scoring criteria of the exam-wrappers were discussed at SALTISE2019. The previous study was expanded, where a critical thinking question at the end of each lecture was posted online, and the last 10 minutes were reserved for the active learning activity. Students would analyze and answer the question individually, followed by a 5 minutes discussion among themselves, and then submitting the final answer they are eventually convinced with. Results: The exam-wrapper study showed that students who scored a better reflection, showed higher grades' improvement. Students also showed a considerable improvement through the active learning process for which, at the beginning of the semester, 55% of the students were able to correctly answer the question from the first attempt while this increased to 82% after discussing it among each other. However, towards the end of the semester, both increased to 66% against 91% between both attempts. Discussion: Data suggests that a link existed between how serious students took the exam wrapper and how much their grade improved. It also suggests that the active discussion among each other helped them to better interpret the questions in order to arrive at the correct answer. What is interesting is that it seems both strategies were inter-correlated, for which after the students reflected on their performance after the midterm, they were able to self-reflect, which kept boosting class performance in the individual and in-teams discussion.

*CONNECTING RESEARCH TO PRACTICE*

## The Guiding Role of Rubrics in Inquiry Based Learning

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Inquiry-based learning (IBL) is an approach involving student-centered exploration in which learning focuses on the process (e.g., procedural understanding) rather than the final outcome (e.g., exam). IBL shifts away from conventional summative assessment, which can be a difficult transition both instructors and students new to IBL. Here, we highlight the role of rubrics in facilitating the transition to IBL learning/instruction through the lens of an upper year laboratory course at McGill University.

*EXPANDING THE ROLE OF STUDENTS*

## Students as Partners in Course Development: The case of BIOL 202

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In the Students as Partners in higher education (SaP) framework, students collaborate with faculty in educational design, assessment and implementation. We have integrated multiple levels of SaP into a BIOL 202 (Basic Genetics) course development team that includes a graduate student Teaching Development Fellow, undergraduate pedagogical research students (FSCI 396), and undergraduate course (re-)design (TEACH) fellows. Here we present how this ecosystem of SaP has led to the implementation of new and/or improved course resources.

*ENGAGING THE LEARNER*

## Leveraging Student Pride and Talent to Demonstrate Integration of Learning

BRUCE TRACY (John Abbott College), bruce.tracy@johnabbott.qc.ca

At the pinnacle of each student's CEGEP career is their ability to demonstrate the integration of their learning within a program. Indeed, this is deemed so important that the new Science Program allocates resources to this as a potential stand-alone course (competency C3). The current talk will examine and illustrate the experience of effectively executing this type of learning within the Arts & Sciences Program at John Abbott. The course's success comes down to creating the framework to encourage student pride and talent come to the fore.

The A&S Program is a broad STEAM-based program that requires students to explore many different fields of knowledge. In fact, for virtually all students, this program will be the highest, broadest education they will receive, since most university trajectories require specialization. At the end of this program, the Integrating Activity course requires them "to carry out an original project that integrates what they have learned." (MEES)

The design of this course allows students the freedom to manifest the integration of their learning by tackling a project of their own choosing. Examples include writing a 40,000-word work of fiction, designing a building a musical play structure for a local daycare, using slim mold to redesign the Montreal Metro system, designing and fabricating a line of clothing based upon recycled fabric, writing and illustrating a children's book on social issues, building a light-tracking robot, and many others.

The focus of the talk is to showcase the student work and illustrate how giving the them the freedom and encouragement draws out such a high level of success. The key factor in describing the task to the students comes down to pride. Too often grades are the driving motivator for students. In this case, emphasis is placed heavily on being proud of what is delivered. Further content examines the manner in which such a cross-disciplinary activity can be assessed.

## Theoretical perspectives on Active Learning

JOEL WIEBE, RUBAINA KHAN, RENATO CARVALHO, PREETI RAMAN, GARRICK BURRON, JU (REBECCA) JEONG (OISE, University of Toronto), ALLISON VAN BEEK, SUSAN MCCAHAN, OLIVIER ST-CYR, (University of Toronto), JAMES D. SLOTTA (OISE, University of Toronto) joel.wiebe@mail.utoronto.ca, rubaina.khan@mail.utoronto.ca, renatoscarvalho@gmail.com

This symposium will comprise five presentations, each addressing a different theoretical or methodological aspect of active learning research or practice:

Exploring the Intersections between Active Learning and Learning Communities: A Preliminary Review of Definitions and their Relationships" will address the ambiguous definition of "active learning" and its relationship with the perspective of learning communities.

Pedagogy matters: Critical Pedagogy and Knowledge Building as Theoretical Backgrounds for Active Learning" will discuss how active learning can be seen through the lens of different pedagogical perspectives.

Towards Co-orchestration: Technologies supporting teachers in active learning classrooms"" will address the challenges of designing, monitoring, and intervening in an active learning environment. We will discuss how scripting and orchestration can alleviate these challenges to support complex active learning designs.

Exploring Data Collection Instruments to Evaluate Active Learning Classrooms,"" will present a Technology Enhanced Active Learning (TEAL) classroom design and discuss methods to assess the impacts of active learning classrooms on students and instructors.

Review of In-Class Active Learning Observation Protocols" will review existing classroom observation tools and present on how merging the Teaching Dimensions Observation Protocol (TDOP) and the Active Learning Classroom Observation Tool (ALCOT) can be used to capture the intersection of space, technology and pedagogy in active learning classrooms.

This symposium will be divided into two parts, with a total of five 8-minute presentations. The first part will include two presentations followed by a short (10 minute) discussion of those presentations.

## L'apprentissage actif par le vécu moteur dans la classe : une stratégie pédagogique efficace pour les enseignants.

GENEVIÈVE CADORET, STÉPHANIE BOYER, PHILIPPE CHAUBET (Université du Québec à Montréal),
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Selon les théories de la cognition incarnée, la cognition humaine est profondément enracinée dans les interactions du corps avec son environnement physique (Chandler et Tricot, 2015; Kiefer et Trumpp, 2012). Les recherches récentes sur la cognition spatiale et l'apprentissage des mathématiques appuient ces théories et mettent en évidence le rôle essentiel que jouent les gestes des apprenants et des enseignants dans l'apprentissage et la cognition (Hurst et al, 2019). Ainsi, un enfant de 5 ans exprime mieux sa connaissance implicite du concept de parallélisme par des gestes que par des mots, ce qu'il continue de faire jusqu'à l'âge de 8 ans (Calero et al, 2019). Des élèves du 2ème cycle du primaire améliorent leur capacité à estimer la taille d'angles et à dessiner des angles de mesures données grâce à des expériences motrices sur une plateforme Kinect (Smith et al, 2014). Toutefois, la place accordée aux gestes et aux mouvements dans les salles de classe est très restreinte et les enseignants intègrent peu les gestes de l'élève dans leurs stratégies pédagogiques. L'objectif de cette recherche était d'accompagner et de soutenir 4 enseignantes du 2ème cycle du primaire afin qu'elles intègrent pendant 6 semaines dans leurs stratégies pédagogiques une activité motrice de l'élève qui soit le plus possible en adéquation avec le contenu scolaire. L'accompagnement consistait à offrir aux enseignantes une formation sur l'apprentissage actif, un soutien via une plateforme interactive, des outils pour co-construire des activités en classe pour les élèves. Diverses activités ont été vécues par les élèves comme par exemple des activités en lien avec le calcul de l'aire ou du périmètre en mathématiques. À l'issue des 6 semaines, une entrevue a été conduite avec les enseignantes et nous présenterons un résumé de leurs perceptions de cette stratégie pédagogique et de ses effets sur les apprentissages des élèves.

# Words of Appreciation / Mots d'appréciation

Éducation, Enseignement supérieur et Recherche Québec

SALTISE wishes to thank the Entente Canada-Québec relative à l'enseignement dans la langue de la minorité et à l'enseignement des langues secondes (ECQ), managed by Ministère de l'Éducation et de l'Enseignement supérieur, for their contribution towards the funding of the SALTISE/S4 project that has allowed this Community to grow. We greatly appreciate the generosity and confidence they have shown in supporting the vision of our many inter-institutional and inter-order collaborations and partnerships. Thank you!

Le comité d'organisation du SALTISE tient à remercier Entente Canada-Québec relative à l'enseignement dans la langue de la minorité et à l'enseignement des langues secondes (ECQ), gérée par le Ministère de l'Éducation et de l'Enseignement supérieur, dont le soutien a permis de financer le projet SALTISE/S4 grâce auquel notre communauté ne cesse de croître. Nous apprécions grandement leur générosité ainsi que la confiance qu'ils manifestent envers nous en soutenant nos collaborations interinstitutionnelles, nos partenariats et notre vision. Merci!

## SALTISE thanks the following for their generous support
## SALTISE remercie les institutions suivantes pour leur généreux soutien

Université Bishop's University
Centennial College
Université Concordia University
Université Concordia University — Centre for Teaching and Learning
Champlain Regional College
Dawson College
eLATE — Enhancing Learning & Teaching in Engineering
Cégep de la Gaspésie et des Îles
Cégep Heritage College
John Abbott College — CEGEP/College
Collège LaSalle
Marianopolis College
McGill Faculty of Engineering
McGill Teaching and Learning Services
McGill Faculty of Science
McGill Student Life and Learning
nureva
Cégep de Sept-Îles
SMART
T-PULSE — Tomlinson Project in University-Level Science Education
Vanier College — CEGEP/College
Visual Classrooms

# SALTISE 2020

## Wishes to thank its partner organizations for their support

Concordia University – Centre for Teaching and Learning

Concordia Centre for Teaching and Learning - Our goal is to start conversations with faculty and graduate students about what makes great teaching & learning. We aim to build on and share these ideas through workshops, online resources and university-wide networks. http://www.concordia.ca/offices/ctl.html

UQÀM – Faculté des sciences de l'éducation – Département de didactique

UQAM Faculté d'éducation, Département de didactique - Le Département de didactique s'intéresse aux situations d'apprentissage-enseignement ainsi qu'à la didactique générale. Faisant partie de la Faculté des sciences de l'éducation de l'UQAM, il contribue au développement et à la diffusion des connaissances nécessaires à la formation initiale et continue du personnel enseignant et d'autres professionnels de l'éducation, aux trois cycles d'études. https://didactique.uqam.ca/

PÉRISCOPE – Plateforme Échange, Recherche et Intervention sur la SCOlarité: Persévérance Et Réussite

Le réseau PÉRISCOPE vise le croisement des perspectives de recherche et d'intervention en matière de scolarité, persévérance et réussite scolaires (PRS) et veut encourager davantage de synergie entre les acteurs. http://periscope-r.quebec/en

centre de documentation collégiale

The Centre de documentation collégiale (CDC) was created in 1990 when the Ministère de l'Enseignement supérieur et de la Science took over the extensive collection of documents developed since 1970 by the Centre d'animation, de développement et de recherche en enseignement (CADRE). https://cdc.qc.ca

CCDMD – Collegial Centre for Educational Materials Development

CCDMD (Centre collégial de dévloppement de matériel didactique) provides digital and online materials for a number of college disciplines and programs. http://www.ccdmd.qc.ca

AQPC – Association québécoise de pédagogie collégiale

The mission of the AQPC is to promote, stimulate, and support the development and evolution of college pedagogy. The AQPC strives to be a reflection and a beacon for all who work in education at the college level so as to ensure the quality of learning for all students whether enrolled in regular courses or in continuing education. The AQPC contributes to the development and evolution of pedagogy in conjunction with diverse partners in the field of higher education. http://aqpc.qc.ca/

McGill | Teaching and Learning Services

Teaching and Learning Services (TLS) promotes and supports the ongoing development and enhancement of teaching and learning at McGill University. http://www.mcgill.ca/tls/

ARC | Association pour la recherche au collégial

L'ARC est un lieu de rencontres et d'échanges sur la recherche collégiale. Comme association, elle travaille au développement de la recherche dans les établissements d'enseignement collégial. http://vega.cvm.qc.ca/arc/

Éducation, Enseignement supérieur et Recherche Québec

http://www.education.gouv.qc.ca/ministere-de-leducation-et-de-lenseignement-superieur/

vté – vitrine technologie éducation

Vitrine technologie-éducation (VTÉ) is a nonprofit organization with the mission to guide Quebec post-secondary education institutions in their educational technology choices. VTÉ provides free online laboratories on emerging technologies and new ways to teach, a catalog of teaching and learning resources as well as software group purchases for cégeps and universities. http://vteducation.org/en

CÉGEP À DISTANCE

Cégep à distance develops distance education materials for college-level courses and provides on-line courses in many disciplines. http://cegepadistance.ca/en

profweb – Learning Objects and Inspiring Learning

Profweb supports IT integration in teaching and learning. Profweb - the Quebec College Crossroad for IT integration: http://www.profweb.ca/en

eLATE – Enhancing Learning & Teaching in Engineering

eLATE (enhancing Learning and Teaching in Engineering) is a community within the Faculty of Engineering that is committed to promoting excellence in the teaching and learning of technical and professional 21st-century skills. https://www.mcgill.ca/engineering/initiatives/elate

APOP – Apprendre, agir en numérique.

The Association for the Educational Application of Computer Technology at the Post-Secondary Level (APOP) is a nonprofit professional association, established in 1982, working to promote the pedagogical integration of IT (Information Technology) into teaching and learning. https://apop.qc.ca/en/

opiéva

Nous vous écrivons ce message afin de vous rassurer sur le maintien des activités de l'OPIEVA. Bien que la COVID-19 nous ait plongés dans la situation particulière où les activités sont suspendues à l'UQAM, nos équipes restent bien actives en télétravail. Nous vous tiendrons informés des développements de nos multiples projets par courriel ainsi que sur notre page Facebook (hyperlien sur "Page Facebook" : https://facebook.com/opieva.uqam).

Avec trois belles années de travail au compteur, et beaucoup d'autres en vue, l'équipe de l'OPIEVA vous remercie de votre soutien !

https://facebook.com/opieva.uqam