

**Programme du 49<sup>e</sup> Congrès de chimie collégiale au Canada**  
**49<sup>th</sup> College Chemistry Canada Conference Program**  
**Du 26 au 28 mai 2023 / May 26-28, 2023**



## TABLE DES MATIÈRES / TABLE OF CONTENTS

<b>Coup d'oeil sur le programme</b> <b>Program at-a-glance</b>	<b>Verso de couverture frontale</b> <b>Inside back cover</b>
Mot de bienvenue du coordonnateur du congrès, François Gauvin <i>Welcome address from conference coordinator, François Gauvin</i>	2
<i>Welcome address from College Chemistry Canada President, Paula Rooksby</i>	3
Mot de bienvenue des doyens FAFS et FECP, Alexandre Brassard et Bertrand Pauget <i>Welcome address from FAFS and FECP Deans, Alexandre Brassard and Bertrand Pauget</i>	4 & 5
Mot de bienvenue de Madeleine Asselin, professeure de didactique des sciences <i>Welcome address from Madeleine Asselin, Science education professor</i>	6
Commanditaires du congrès / <i>Conference sponsors</i>	7 & 8
Boursière étudiante du C <sub>3</sub> 2023 (institution hôte) : Amy Gudmundson <i>2023 Host Institution Student Scholarship: Amy Gudmundson</i>	9
Conférencière invitée (plénière 1) : Sarah Pelletier <i>Invited speaker (plenary 1): Sarah Pelletier</i>	10 & 11
Conférencier invité (plénière 2) : Yann Brouillette <i>Invited speaker (plenary 2): Yann Brouillette</i>	12 & 13
Présentations orales / <i>Talks</i>	14 à/to 28
Affiches / <i>Posters</i>	29 à/to 33
Liste et adresses courriel des congressistes / <i>Conference attendees contact details</i>	34 & 35
Carte du Fun Run & Walk / <i>Map of Fun Run and Walk</i>	36
Notes de congrès / <i>Conference Notes</i>	37 à/to 40

## François Gauvin

(f.gauvin.14@gmail.com)



**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**



### **MOT DE BIENVENUE**

Au nom du comité organisateur du 49<sup>e</sup> congrès de Chimie collégiale au Canada (C<sub>3</sub>), il me fait immensément plaisir de vous accueillir à l'Université de Saint-Boniface (USB). Cette première rencontre en personne depuis le 46<sup>e</sup> congrès C<sub>3</sub> en 2019 à Victoria (CB) sera une belle occasion de discuter ensemble des enjeux propres à l'enseignement de la chimie « du primaire jusqu'à l'université ».

Je tiens spécialement à remercier les collègues de l'USB qui m'ont aidé à organiser tout cela : Bilkiss Issack, Gabriel Marineau-Plante, Michael Dickman, Diane Pellerin, Nathalie Roche et Madeleine Asselin. Grands mercis également à mes collègues du C<sub>3</sub>, en particulier John Lee (webmestre du C<sub>3</sub>, Camosun College) et John Eng (trésorier du C<sub>3</sub>, Université de Lethbridge). L'aide d'autres collègues (et d'étudiant.e.s) de l'USB et du C<sub>3</sub> a aussi été (et est encore) grandement appréciée.

### **WELCOME ADDRESS**

*On behalf of the 49<sup>th</sup> College Chemistry Canada (C<sub>3</sub>) Conference organizing committee, I am very pleased to welcome you all at the Université de Saint-Boniface (USB). This first in-person conference since the 46<sup>th</sup> one in Victoria (BC) in 2019 will be a nice occasion to discuss together about the specific challenges of Chemistry Education "from Primary School to University Level".*

*I wish to thank my USB colleagues who helped me putting all this together: Bilkiss Issack, Gabriel Marineau-Plante, Michael Dickman, Diane Pellerin, Nathalie Roche, and Madeleine Asselin. Many thanks also to my C<sub>3</sub> colleagues, particularly to John Lee (C<sub>3</sub> webmaster, Camosun College) and to John Eng (C<sub>3</sub> treasurer, University of Lethbridge). The help from other USB and C<sub>3</sub> colleagues (and USB students!) was (and is still) greatly appreciated.*

**Bon congrès à toutes et tous!    *Have a wonderful conference everyone!***

## **Paula Rooksby**

(phawrysz@gmail.com)

NAIT, Edmonton, AB

President of C<sub>3</sub>



**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**



### **WELCOME ADDRESS**

*Excited doesn't begin to describe the anticipation for the 49<sup>th</sup> College Chemistry Canada Conference hosted by Université de Saint-Boniface (USB) in beautiful Winnipeg, Manitoba. After three years of virtual only conferences, this in-person conference will once again provide the networking and peer-to-peer conversations that were sorely missed during the pandemic. Having an immersive experience of sharing, learning and connecting is an unparalleled opportunity.*

*This year's theme is "Nuts & Bolts Challenges in Chemistry Education, from Primary School to University Level". Over the course of the conference there are an abundance of opportunities to share in the experiences of teaching chemistry. Provide and gain invaluable resources and support to navigate an uncertain future of delivering chemistry curriculum. Ponder and investigate new and newly updated teaching paradigms. Along the way, there will be ample opportunity for fun and fellowship (ie shenanigans).*

*I look forward to the opportunity to connect with as many of you as possible in the days ahead, and I hope you too will take the many opportunities available to you with your fellow conference attendees as well.*

*On behalf of the C<sub>3</sub> Executive Members and Directors, thank you for being here. I hope you find the C<sub>3</sub> experience enriching and informative.*

*Enjoy*

**Alexandre Brassard, Doyen**



**Bertrand Pauget, Doyen**



## **MOT DE BIENVENUE**

Chers participants du 49e congrès de Chimie collégiale au Canada,

Au nom de la Faculté des arts et de la Faculté des sciences (FAFS) et au nom de la Faculté d'éducation et d'études professionnelles (FÉÉP), nous vous souhaitons chaleureusement la bienvenue sur le campus.

L'Université de Saint-Boniface est fière de contribuer à la formation en français des chimistes de demain. Cette discipline occupe une place de choix dans notre baccalauréat ès sciences général et dans notre baccalauréat avec majeure conjointe biochimie-microbiologie. Grâce à notre baccalauréat en éducation, nous formons aussi la majorité des maîtres qui enseigneront la chimie dans les écoles francophones du Manitoba. L'USB vient d'ailleurs d'inaugurer un tout nouveau laboratoire de chimie qui est la fine pointe des technologies d'enseignement. Nous espérons que vous aurez l'occasion de le visiter!

Le thème choisi pour cette édition, « Les défis de l'enseignement de la chimie, du primaire jusqu'à l'université », est d'une grande pertinence dans le contexte actuel. L'enseignement de la chimie joue un rôle essentiel dans la formation des futurs scientifiques et de citoyens éclairés. Il est donc important de partager les meilleures pratiques et de favoriser une collaboration fructueuse entre les enseignants à toutes les étapes du parcours éducatif.

Ce congrès offre une occasion unique de rencontrer des collègues passionnés, d'établir des liens durables et d'élargir vos réseaux professionnels. Nous espérons sincèrement que ces jours de partage et de collaboration vous permettront de découvrir de nouvelles idées, de développer vos compétences pédagogiques et d'explorer des approches innovantes pour l'enseignement de la chimie.

Un merci tout spécial aux organisateurs de cet événement. Votre dévouement, votre expertise et votre passion pour l'enseignement de la chimie sont inestimables.

Merci à tous et bon congrès !

Alexandre Brassard, PhD  
Doyen de la Faculté des arts et de la Faculté des sciences

Bertrand Pauget, PhD  
Doyen de la Faculté d'éducation et des études professionnelles



**Alexandre Brassard, Dean**



**Bertrand Pauget, Dean**



### **WELCOMING ADDRESS**

*Dear participants of the 49th Canadian College Chemistry Conference,*

*On behalf of the Faculty of Arts and Science (FAFS) and the Faculty of Education and Professional Studies (FEPS), we would like to extend a warm welcome to you on campus.*

*Université de Saint-Boniface is proud to contribute to the training of tomorrow's chemists in French. This discipline is an important part of our Bachelor of Science degree and our Bachelor with joint major in Biochemistry and Microbiology. Through our Bachelor of Education degree, we also train most teachers who will teach chemistry in Manitoba francophone schools. USB has just opened a brand-new chemistry lab that is state of the art in teaching technology. We hope you will have the opportunity to visit it!*

*The theme of this year's conference, "Nuts & Bolts Challenges in Chemistry Education, from Elementary School to University Level", is very relevant in today's environment. Chemistry education plays an essential role in the training of future scientists and informed citizens. It is therefore important to share best practices and foster fruitful collaboration between teachers at all stages of the educational process.*

*This congress offers a unique opportunity to meet passionate colleagues, establish lasting links and expand your professional networks. We sincerely hope that these days of sharing and collaboration will allow you to discover new ideas, develop your teaching skills and explore innovative approaches to teaching chemistry.*

*A special thanks to the organisers of this event. Your dedication, expertise and passion for chemistry education are invaluable.*

*Thank you all and enjoy the conference!*

*Alexandre Brassard, PhD  
Dean, Faculty of Arts and Faculty of Science*

*Bertrand Pauget, PhD  
Dean, Faculty of Education and Professional Studies*

**MOT DE BIENVENUE DE MADELEINE ASSELIN**  
**Professeure de didactique des sciences à l'Université de Saint-Boniface**

**WELCOME ADDRESS FROM MADELEINE ASSELIN**  
**Science education professor at the Université de Saint-Boniface**



**MOT DE BIENVENUE**

Bonjour à toutes et à tous!

Je crois que la première étape essentielle pour améliorer l'enseignement de n'importe quel domaine, est d'identifier les enjeux qui y sont associés pour ensuite procéder à trouver des solutions. Je pense que le but ultime de l'enseignement de la chimie est de former des personnes compétentes dans le domaine pour qu'elles puissent ensuite contribuer de manière viable aux divers besoins de notre planète (en matière d'énergie, de nourriture, de médicaments, etc.). Je vous souhaite des échanges enrichissants lors de ce congrès!

(Je suis attristée de ne pas pouvoir me joindre à vous. Je suis juge à une compétition environnementale toute la fin de semaine, à l'extérieur de la ville de Winnipeg.)

**WELCOMING ADDRESS**

*Hi everyone!*

*I believe that the first and essential step for improving the teaching of any discipline is to identify the challenges and then to find solutions to overcome them. I think that the ultimate purpose of chemistry education is to train people so that they know enough of this science in order to contribute to society and help maintain our planet in good shape (in terms of energy development, food, healing drugs, etc.). I wish you a series of rewarding exchanges during this conference.*

*(I am sad not to be with you during this conference. I am serving as a judge in an environmental competition all weekend, out of Winnipeg.)*

**Merci aux commanditaires du 49<sup>e</sup> congrès de Chimie collégiale au Canada**  
**Thank you to the Sponsors of the 49<sup>th</sup> College Chemistry Canada Conference**

## Organisateurs / Organizers



## Commanditaires / Sponsors

### Diamant / Diamond



### Émeraude / Emerald



### Saphir / Sapphire







CANADA

[www.verniercanada.ca](http://www.verniercanada.ca)

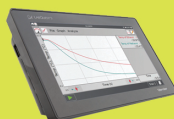
When you teach with Vernier, you're teaching with a complete chemistry solution. From titrations to spectroscopy, our sensors and instrumentation are backed by powerful analytical software, university-level experiments, and unparalleled support.



Never used Vernier sensors? Let's change that!



Go Direct Sensors



LabQuest 3



Lab Instrumentation

Vernier Canada offers a free 30-day preview program. You can request us to send you any sensors or interface you are interested in trying. We will ship them to your lab, risk-free. At the end of the preview period, just ship back the equipment.

Email us at [info@verniercanada.ca](mailto:info@verniercanada.ca) to request a preview!



**Bourse étudiante 2023 de Chimie collégiale au Canada (institution hôte)**  
**2023 College Chemistry Canada Host Institution Student Scholarship Recipient**

**Amy Gudmundson**  
**Étudiante de 2<sup>e</sup> année à l'USB en 2023-2024**  
**2<sup>nd</sup>-year USB Student in 2023-2024**



En 2022-2023, Amy Gudmundson est étudiante de 1<sup>e</sup> année à la Faculté de sciences de l'Université de Saint-Boniface. Passionnée de la science depuis qu'elle est jeune, elle a présenté des projets de recherche à l'expo-sciences pancanadienne au secondaire et elle a mené des ateliers au camp de sciences de son conseil scolaire. En plus de plonger dans des sujets de chimie qui l'intéressent par l'entremise de ses cours, Amy a aidé à préparer le nouveau laboratoire de chimie cette année. Elle aimerait poursuivre une carrière qui lui permet de partager son enthousiasme pour les sciences avec d'autres. Cet été, elle va aider à enseigner le codage aux jeunes du programme Mini U à l'Université du Manitoba.

*Amy Gudmundson will be a 2<sup>nd</sup>-year student at the Faculté de sciences de l'Université de Saint-Boniface in 2023-2024. Passionate by science since her young age, she presented research projects at the Canada-Wide Science Fair when she was in high school and conducted workshops at her school division science camp. In addition to be actively involved in her chemistry courses, Amy also helped prepare the newly renovated chemistry laboratories this spring. She would like to pursue a career that will allow her to continue sharing her passion for science with other people. This summer, Amy will help teaching computer coding to young kids at the University of Manitoba Mini U program.*

**Conférencière invitée, 27 mai**  
**Sarah Pelletier**  
(Campus St-Jean, UAlberta)



**49<sup>e</sup> Congrès de chimie collégiale au Canada**  
**Du 26 au 28 mai 2023**



**BIOGRAPHIE**

Sarah Pelletier a obtenu son B.Sc. en chimie à l'Université du Québec à Rimouski en 2000 et son Ph.D. en chimie analytique à l'Université de l'Alberta en 2006. Elle dirige les laboratoires scientifiques du Campus St-Jean de l'Université de l'Alberta et est professeure de chimie à ce campus à Edmonton (la faculté francophone de l'Université de l'Alberta). Sarah cumule plusieurs années d'expérience en direction et coordination de laboratoires de science et en enseignement de chimie générale et avancée de niveau universitaire. Tout au long de sa carrière, elle a également organisé de nombreuses activités de vulgarisation scientifique pour des élèves de la maternelle à la 12<sup>e</sup> année et, plus récemment, a introduit et appliqué les principes de chimie verte et de développement durable dans ses laboratoires et ses cours. Sarah a aussi été impliquée dans la révision et la refonte des programmes de science au Campus St-Jean.

**RÉSUMÉ DE LA CONFÉRENCE PLÉNIÈRE** Samedi 27 mai, 9h30 (conférence en anglais, atelier bilingue)

**Rayonnement scientifique pour élèves de l'élémentaire et du secondaire, et pour étudiants de 1<sup>e</sup> première année universitaire : présentation en deux parties.**

**Partie 1.** Des programmes de vulgarisation scientifique pour élèves de la maternelle à la 12<sup>e</sup> année sont régulièrement organisés dans des collèges et universités au pays. Ces programmes diffèrent grandement les uns des autres en termes de formats, de buts et de résultats. Ces activités servent fréquemment d'étincelles pour amorcer l'intérêt des élèves envers les sciences et elles sont souvent aussi des outils de recrutement pour les collèges et universités. Nous organisons des activités de ce genre au Campus St-Jean de l'Université de l'Alberta depuis plusieurs années et, avec le temps, nous nous demandons si ces activités remplissent bien leurs buts. Sont-elles de niveau suffisamment élevé pour mettre les étudiants au défi sans toutefois les décourager? Que désirent les enseignants de la maternelle à la 12<sup>e</sup> année pour leurs élèves? Qu'est-ce qui est mieux pour les élèves et qu'est-ce qui est mieux pour nous?

Dans cet exposé, je vais présenter les activités de rayonnement que nous organisons au Campus St-Jean puis dirigerai une discussion afin d'explorer ensemble les défis et résultats pour les élèves de la maternelle à la 12<sup>e</sup> année, pour leurs enseignants et pour les collèges et universités qui organisent ce genre d'événements.

**Partie 2.** Les élèves de maternelle à 12<sup>e</sup> année (qu'ils aient ou non assisté à des activités de vulgarisation scientifique) peuvent éventuellement venir suivre des cours ou programmes dans nos classes collégiales et universitaires. C'est alors le début des *lamentations de professeurs* : « *Ils ne sont pas prêts! Ils ne sont pas matures! Ils ne connaissent rien! Qu'ont-ils fait à leur école secondaire? C'était mieux avant!* »

Je vais présenter quelques-uns de nos programmes et stratégies en place pour assurer et améliorer l'expérience, le succès et la santé mentale des étudiants de première année universitaire. Nous discuterons ensuite ensemble de nos méthodes pour connecter ces deux mondes : que désirent les institutions postsecondaires, que peuvent faire les écoles secondaires pour préparer leurs étudiants, et comment peut-on accueillir et intégrer les étudiants dans nos collèges et universités en gardant en tête les objectifs à atteindre.

**Plenary Speaker, May 27<sup>th</sup>**  
**Sarah Pelletier**  
(Campus St-Jean, UAlberta)



**49<sup>th</sup> College Chemistry Canada Conference**  
**May 26 – 28, 2023**



**BIOGRAPHY**

Dr. Sarah Pelletier obtained a B.Sc. in chemistry (2000) at the *Université du Québec à Rimouski* (UQAR) and a Ph.D. in analytical chemistry (2006) at the University of Alberta. She is the Director of the Science Teaching Laboratories and Chemistry professor at Campus Saint-Jean, the Francophone Faculty of the University of Alberta in Edmonton. She has years of experience running University level science laboratories as well as teaching introductory to advanced university chemistry classes. Throughout her career, she has been organizing outreach activities for K-12 students as well as, more recently, implementing green chemistry and sustainability in her laboratories and courses. She is also involved with the revision and redesign of Campus Saint-Jean's Science Programs.

**PLENARY CONFERENCE ABSTRACT** Saturday May 27<sup>th</sup>, 9:30 AM  
(English conference, bilingual discussion)

**Outreach Programs for Elementary and High schools, and First year students experience in Post-secondary: a talk and conversation in two parts.**

**Part 1.** Science outreach programs and activities intended for K-12 students are organized regularly by several Colleges and Universities across the country and vary greatly in their format, goals and results. These activities spark students' interest for science and are often a recruiting tool for the colleges and universities. We have led and organized several such activities and often wondered if the latter actually meet their intended goals. Are the activities at the proper level to challenge students but not discourage them? What do the K-12 teachers want for their students? What is best for the students? What is best for us? I will present the outreach activities that we organise at Campus Saint-Jean and then will lead a discussion to explore the challenges and outcomes for the K-12 students and teachers, and for the organizing Colleges and Universities.

**Part 2.** Those K-12 students (whether or not they have experienced outreach activities) may eventually land into our College and University classrooms. Then, the *Professors' Lament* begins: "They're not ready! They're not mature! They don't know anything! What have they done in high school? They were better before!" I will present some of our strategies and programs in place to ensure and improve first-year student experience, success and mental health. We will follow with an exchange on how to connect the two worlds: what does post-secondary want, what does high school do to prepare the students and how to welcome and integrate students in our Colleges and Universities based on our desired outcomes.



**Conférencier invité, 28 mai**  
**Yann Brouillette**  
**(Collège Dawson)**



**49<sup>e</sup> Congrès de chimie collégiale au Canada**  
**Du 26 au 28 mai 2023**



**BIOGRAPHIE**

Yann Brouillette est professeur de chimie au Collège Dawson à Montréal (Québec) depuis 2009, Il est un membre dévoué de la communauté d'apprentissage actif et a collaboré au développement de plusieurs outils pédagogiques en ligne gratuits. En tant que créateur et animateur de la chaîne *YouTube* "Chem Curious", Yann est toujours à la recherche de nouvelles façons d'engager les élèves dans l'apprentissage des sciences. En janvier 2014, il crée le nouveau cours complémentaire pour étudiants non scientifiques intitulé "Comic Book Chemistry" où il utilise des situations représentées dans des romans graphiques pour expliquer la chimie de base. Enseignant le jour et écrivant la nuit, il aime donner des conférences et co-écrire des articles sur la chimie de la culture pop. Globalement, Yann Brouillette n'est pas un savant fou, mais bien fou de savoir.

**RÉSUMÉ DE LA CONFÉRENCE PLÉNIÈRE** Dimanche 28 mai, 10h00  
(qui sera donnée en anglais)

***La chimie des bandes-dessinées: Ajoutez des super héros à vos solutions***

Une image vaut mille mots, ou mille mèmes de nos jours. Mais ces mots proviennent-ils des professeurs ou des élèves, ou encore d'un dialogue constructif entre les deux? À une époque où les textos sans contacts ont remplacé les *high-five* sans *Purell*, les nouvelles dynamiques en classe demandent aux enseignants chimistes de trouver des façons originales de partager leur amour pour les molécules.

Les super-héros puisent fréquemment leurs origines et leurs pouvoirs parmi des transformations biologiques ou des avancées technologiques qui dépassent la portée crédible de la science moderne. Cependant, en distillant des notions scientifiques se trouvant dans des récits fictifs tels que le marteau de Thor, l'armure d'Iron Man ou encore le sérum de Captain America, nous avons le pouvoir de générer des opportunités d'apprentissage sur les véritables merveilles du monde naturel et des technologies récentes.

Sans la puissance de frappe de Hulk pour séparer le plausible de l'exagération parmi les exploits sensationnels des super-héros, la puissance du jugement critique sera appliqué pour discerner le crédible de l'incroyable. Un regard amusant et critique sur les explications rationnelles décrivant des événements hors du commun incarnés par des héros vus dans des films, des émissions de télévision et des romans graphiques sera étudié. Les bandes dessinées et la chimie peuvent s'unir pour renforcer des approches pédagogiques. Contrairement aux emplacements des repaires secrets de héros, des ressources et astuces pédagogiques librement accessibles seront partagées. Comme *Optimus Prime* en conviendrait, les transformations chimiques offrent plus qu'elles ne laissent voir.

**Lectures recommandées :**

- *Molecular Marvels of Thor*; Brouillette, Y.; Lubell, W. D. *ChemViews Magazine* 2019.  
[https://www.chemistryviews.org/details/ezine/11163319/The\\_Molecular\\_Marvels\\_of\\_Thor/](https://www.chemistryviews.org/details/ezine/11163319/The_Molecular_Marvels_of_Thor/)
- *Comic Book Chemistry: Teaching Science Using Super Heroes*; Brouillette, Y. *CIRCE Magazine STEAM Edition* 2019, 1, 47-58.  
<http://www.educationthatinspires.ca/2019/01/14/circe-steam-magazine-now-available/>.
- *ChemCurious YouTube channel*: <https://www.youtube.com/user/ChemCurious/videos>.



**Plenary Speaker, May 28<sup>th</sup>**  
**Yann Brouillette**  
(Dawson College)



**49<sup>th</sup> College Chemistry Canada Conference**  
**May 26 – 28, 2023**



**BIOGRAPHY**

Dr. Yann Brouillette obtained his masters (M. Sc.) in organic chemistry from *Université de Montréal* (Québec) in 2005 and his doctorate (Ph. D.) in organic chemistry from *Université de Montpellier* (France) in 2008. A chemistry professor at Dawson College in Montreal (Québec) since 2009, Yann has been a devoted member of the Active Learning Community and collaborated on the development of multiple free online pedagogical tools. As the creator and host of the YouTube channel "Chem Curious", Yann is always looking for new ways to engage students in the learning of science. In January 2014, he created the new complementary course for non-science students entitled "Comic Book Chemistry" where he uses situations depicted in graphic novels to explain basic chemistry. Teaching during the day, and writing at night, he enjoys guess-lecturing and co-writing pop culture chemistry articles. Overall, Yann Brouillette is not a *mad* scientist, he's always a *happy* chemist.

**PLENARY CONFERENCE ABSTRACT** Sunday May 28<sup>th</sup>, 10:00 AM

***Comic Book Chemistry: Adding Superheroes to your Solutions***

A picture is worth a thousand words, or a thousand memes nowadays. But are these words coming from the teachers or the students, or from a constructive dialogue between all? In an era where chemical-free texting has replaced purell-free high-fives, engaging with students requires chemistry instructors to find new ways to share their love for molecules.

Fictional superheroes often have origins and powers due to biological transformations and technological advancements beyond the credible scope of modern science. However, distilling scientific notions emanating from such tales as Thor's hammer, Iron Man's armor, and Captain America's serum, offer opportunities to learn about actual wonders of the natural world and original technical accomplishments.

Without a Hulk smash to separate the plausible from the sensational exploits of superheroes, the power of the "atomic farce microscope" will be applied to discern the credible from the incredible. A fun and critical look at rational explanations describing out-of-the-ordinary events impersonated by heroes seen in movies, TV shows and graphic novels will be investigated. Comic books and chemistry can team-up to strengthen pedagogical approaches to learning via STEAM-based lectures, videos and class projects. Unlike the locations of secret lairs, freely accessible pedagogical resources and tips will be shared. As *Optimus Prime* would agree, chemical transformations offer more than meets the eye.

**Recommended Readings:**

- *Molecular Marvels of Thor*; Brouillette, Y.; Lubell, W. D. *ChemViews Magazine* 2019. [https://www.chemistryviews.org/details/ezone/11163319/The\\_Molecular\\_Marvels\\_of\\_Thor/](https://www.chemistryviews.org/details/ezone/11163319/The_Molecular_Marvels_of_Thor/)
- *Comic Book Chemistry: Teaching Science Using Super Heroes*; Brouillette, Y. *CIRCE Magazine STEAM Edition* 2019, 1, 47-58. <http://www.educationthatinspires.ca/2019/01/14/circe-steam-magazine-now-available/>.
- *ChemCurious* YouTube channel: <https://www.youtube.com/user/ChemCurious/videos>.

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Cassandra DeFrancesco**

(cassandradefrancesco@trentu.ca)

**Shannon Accettone**

Trent University

Talk

Saturday, May 27<sup>th</sup>

10:45 AM



**TITLE / TITRE**

*Laboratory Skills Assignments as a Teaching Tool to Develop Undergraduate Chemistry Students' Conceptual Understanding of Practical Laboratory Skills*

**ABSTRACT / RÉSUMÉ**

*Laboratory skills assignments were developed as a novel approach to providing students with the opportunity to engage in hands-on laboratory skills development outside of the lab during the COVID-19 pandemic. Each skills assignment consisted of two videos demonstrating the selected skill: one in which the skill was performed properly, and one in which deliberate errors have been included. Students were tasked with distinguishing between the two videos along with identifying the included errors and the consequences each error would have on either the accuracy and reproducibility of the collected data or the safety of the experimental procedure. This presentation will cover the development process, implementation, and redesign and modification based on student feedback for future cohorts of students.*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Lawton Shaw**  
(lawtons@athabascau.ca)  
Athabasca University

Talk  
Saturday, May 27<sup>th</sup>  
11:05 AM



**TITLE / TITRE**

*Adapting to AI: ChatGPT, Learning, and Assessment*

**ABSTRACT / RÉSUMÉ**

*ChatGPT is an AI chatbot that provides detailed responses to queries. Beyond general questions, ChatGPT is capable of answering science and mathematics questions at various levels of detail, correctness, and sophistication and it is likely to improve over time as the AI learns and refines itself. It is already being used by students as a learning tool and to assist with homework. Educators need to learn about this technology and respond accordingly. How can we design assessments that are meaningful yet discourage (or avoid) AI-assisted academic misconduct? Is it time to panic, or is this an opportunity to make our courses even better?*

**Emma Davy, Robin Stoodley**

(edavy@chem.ubc.ca)

**Chris Addison**

University of British Columbia

Talk

Saturday, May 27<sup>th</sup>

11:25 AM

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**



**TITLE / TITRE**

*Community service learning in a chemistry-focussed communication course: Making Wikipedia a better place (one article at a time)*

**ABSTRACT / RÉSUMÉ**

*Chemistry 300: Communicating Chemistry is a required third-year course for all students in chemistry specializations at the UBC. In academic year 2022-2023, we incorporated a new assignment into this course: updating an article or stub on the world-wide encyclopedia Wikipedia. We will discuss the rationale for and design and implementation of this assignment as well as student feedback based on student experience of instruction and end-of-semester surveys. We include our reflections on the utility of using a formalized WikiEDU platform for student training and the advantages and disadvantages of having students complete the assignment alone versus in pairs.*



**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Jennifer Wolf**

(jwolf8@bcit.ca)

British Columbia Institute of  
Technology

Talk

Saturday, May 27<sup>th</sup>

11:45 AM



**TITLE / TITRE**

*Reaching out to Indigenous Communities in BC with Chemistry Education*

**ABSTRACT / RÉSUMÉ**

*In recent years there have been strong efforts towards bringing Indigenous knowledge and practice into the chemistry curriculum. My interest at BCIT includes efforts to reach out to remote Indigenous communities to provide easier access to chemistry education.*

*One successful project involved teaching general chemistry topics to a cohort of Indigenous students in the Water and Wastewater Operations certificate program. BCIT offers credentialed programs in various disciplines important to BC industries and resource management. BCIT received funding to offer the Water and Wastewater program free of charge to Indigenous students. This program was offered completely online to accommodate students living and working in remote BC communities. This talk will focus on our development of a foundational chemistry mini-course for these students, most of whom had little or no chemistry background. The talk will also discuss how we can improve access to this type of education to Indigenous students, and how our recent experiences with online instruction set us up well for delivering this course.*

49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023

49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023

**David C. Stone**

(david.stone@utoronto.ca)

**Andrew P. Dicks**

University of Toronto Chemistry

Talk

Saturday, May 27<sup>th</sup>

1:30 PM



### **TITLE / TITRE**

*WIT and Wisdom Part 1: Building a Program-Wide Writing Component for Chemistry*

### **ABSTRACT / RÉSUMÉ**

*Fifteen years ago, the University of Toronto Faculty of Arts & Science shifted its writing instruction from external courses to a departmentally focussed situated learning initiative, the Writing Instruction and Training (WIT) program. This provides additional funding, resources, and training to students, instructors, and teaching assistants to improve discipline-specific writing and feedback to students. We will describe the program's evolution from two laboratory classes to a multicourse initiative reaching all our students, highlighting general principles that can be used to implement a similar approach. A subsequent talk will describe the specifics of generating suitable course-specific materials for writing instruction.*

49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023

49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023

**Andrew P. Dicks**  
(andrew.dicks@utoronto.ca)  
University of Toronto

Talk  
Saturday, May 27<sup>th</sup>  
1:50 PM



### **TITLE / TITRE**

*WIT and Wisdom Part 2: Constructing Annotated Writing Exemplars for Laboratory Courses*

### **ABSTRACT / RÉSUMÉ**

*Undergraduate students in upper-year laboratory courses often ask for writing exemplars they can use as "model" reports. However, if students are given exemplars based on experiments they are scheduled to perform, they may not learn the common features of all reports. We therefore provide students with writing samples based on discontinued experiments in organic and analytical chemistry courses. This presentation will showcase annotated samples designed to give students a vocabulary and conceptual framework for scientific writing. Teaching assistants are trained in how to use the samples to help students recognize the missteps that undergraduates commonly make when they write up their results. We will discuss the initial use and eventual expansion of the exemplars and show student feedback evaluating their effectiveness.*

**Jack Randall, Director of  
College Chemistry Outreach**

([achaudry@verniercanada.ca](mailto:achaudry@verniercanada.ca))

Vernier Science Education

Talk

Saturday, May 27<sup>th</sup>

2:10 PM

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**



**TITLE / TITRE**

*Exploring Everyday Chemistry*

**ABSTRACT / RÉSUMÉ**

*In this presentation, we will offer a few straightforward experiments that illustrate Chemistry concepts at varying academic levels. In addition, we will demonstrate the use of electronic data collection to enhance the students' understanding of, and appreciation for, these experiments.*



**Jimmy Lowe**

(jimmy\_lowe@bcit.ca)

**Djamel Khelifi, Kevin  
Soulsbury, and Hsin Kuo**

Dept. of Chemistry, British  
Columbia Institute of Technology

Talk

Saturday, May 27<sup>th</sup>

3:00 PM

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**



### **TITLE / TITRE**

*The Spectroscopic Surprise from the Student Synthesis and Characterization of Isoamyl Acetate. That's bananas!*

### **ABSTRACT / RÉSUMÉ**

*Students in the organic chemistry lab can learn transferable skills and practice / apply their knowledge of spectroscopy. Isoamyl acetate is an ester that provides banana or pear flavour in foods (e.g. candy, alcoholic beverages, drink powders). Students prepare isoamyl acetate by Fischer esterification of isoamyl alcohol and acetic acid. The ester is purified by extraction and followed by simple distillation. The product is analyzed using ATR-IR, GC-MS, and NMR (<sup>1</sup>H & <sup>13</sup>C). Students predict the proton and carbon-13 NMR for isoamyl alcohol to help them explain the differences for the ester. They encounter a spectroscopic surprise when they examine the spectra of the ester. This is not what the students expect even though the lab procedure is a cook-book recipe. I will discuss the format of this two-week lab to get to the 'spectroscopic surprise', students' explanations as to what might have occurred, and how spectroscopy helped to find the cause.*

49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023

49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023

**Ketan Trivedi**

(ketan@trivedichemistry.com)

Virginia Tech

Talk

Saturday, May 27<sup>th</sup>

3:20 PM



## **TITLE / TITRE**

*Unique online video e-book with homework*

## **ABSTRACT / RÉSUMÉ**

*This is unique video e-book where the book is presented as individual chapters. Each section in the respective chapter is shown as audio/video, which we call a teaching slide. Also, the text component of the teaching video slide is offered. Important highlights of the text component have an access to audio narration. Work out examples are offered on challenging topics. This is to enhance the understanding of the concepts, by working out examples simultaneously with the video narration. More than 1000 examples are taught in this video e-book. The video e-book advances, encourages and enlightens students knowledge on fundamentals in freshman chemistry. At the end of each chapter, homework questions are provided. Instructors have the accessibility to choose the question, decide the number of attempts etc. The important part of this homework is the provision of answers explained in detail with A/V, whether or not the answer is correct. Instructors can create online quizzes and exams of their own choice from a bank of more than 2000 questions.*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Véronique Turcotte**

(veronique.turcotte@clairendeau.qc.ca)

Cégep André-Laurendeau

Présentation orale / *Talk*

Samedi, 27 mai

*Saturday, May 27<sup>th</sup>*

15h40 / 3:40 PM



**TITRE**

Laissez-les faire! Comment favoriser l'autonomie des étudiants en laboratoire

**RÉSUMÉ**

Le laboratoire par enquête guidée est une approche plus ouverte qui permet aux étudiants de prendre des décisions et d'ajuster leur pratique en laboratoire. Les avantages de cette approche sont une plus grande autonomie, une meilleure confiance en soi et une augmentation de l'intérêt pour les sciences. Cette méthode peut être utilisée dans toutes les disciplines scientifiques. Dans cet atelier, nous vous proposons une méthode en quatre étapes pour intégrer cette approche en utilisant vos textes de labo existant. Nous vous fournirons également des conseils pour une implantation réussie en plus de quelques exemples d'expériences pour vous inspirer.

**TITLE**

*Let them do it! How to foster student autonomy in the lab*

**ABSTRACT**

*Guided inquiry lab is a more open-ended approach that allows students to make decisions and adjust their lab practice. The benefits of this approach are numerous and includes increased autonomy, confidence, and interest in science. We will provide you with a four-steps method for integrating this approach using your existing lab texts. We will also provide you with tips for successful implementation and some experiments ideas to inspire you.*

**Jimmy Lowe**  
(jimmy\_lowe@bcit.ca)

**John P. Canal (SFU)**

British Columbia Institute of  
Technology

Talk  
Sunday, May 28<sup>th</sup>  
11:00 AM

**49<sup>e</sup> Congrès de chimie collégiale au Canada**  
**Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference**  
**May 26-28, 2023**



## **TITLE / TITRE**

*Using a Polymer Science Module to Introduce the UN SDGs and Green Chemistry for Non-science Students*

## **ABSTRACT / RÉSUMÉ**

*Students who are not majoring in chemistry are key stakeholders as consumers and potential proponents for a more environmentally sustainable future. A polymer science module was developed to educate students in two breadth science courses (SCI 300 and CHEM 192). By using a pre-lecture survey, we were able to tailor the topics towards their interests. Students are introduced to the basic chemistry of polymers, their properties, applications, and environmental issues. Polymeric materials can be used to make connections between business, Green Chemistry, and the UN Sustainability Development Goals (SDGs). We will also discuss our strategies to keep students engaged and hopefully motivate them to learn more about the key topics.*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Bruno Cinel**

(bcinel@tru.ca)

Thompson Rivers University

Talk

Sunday, May 28<sup>th</sup>

1:30 PM

College Chemistry Canada  
La Chimie Collégiale au Canada

Les défis de l'enseignement de la chimie  
du primaire jusqu'à l'université

Nuts & Bolts Challenges in Chemistry Education  
from Primary School to University Level

Université de  
Saint-Boniface

**TITLE / TITRE**

*The A-B-Cs of Click Chemistry*

**ABSTRACT / RÉSUMÉ**

*This presentation examines the challenges communicating concepts related to the Nobel Prize in Chemistry 2022 through the "language" of chemistry.*



49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023

49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023

**Todd Stuckless**  
(johntodd@langara.ca)

Langara College

Talk  
Sunday, May 28<sup>th</sup>  
1:50 PM



**TITLE / TITRE**

*Research Programs: Friend or Foe?*

**ABSTRACT / RÉSUMÉ**

*Having worked at a research intensive university and then at a teaching college, I felt that a research focus actually hindered the craft of teaching. And I was cynical that administration might divert resources from teaching to research. But perhaps I was wrong.*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Jimmy Lowe**

(Jimmy\_Lowe@bcit.ca)

British Columbia Institute of  
Technology

Talk

Sunday, May 28<sup>th</sup>

2:10 PM



**TITLE / TITRE**

*Group Discussion - "8 Dimensions of Wellness for Educators"*

**ABSTRACT / RÉSUMÉ**

*Educators will flip over backwards to ensure that their students have a meaningful and enriching learning experience. We also have additional roles such as listener, counsellor, coach, mentor and motivator. What about us? This is an opportunity for you explore an area of wellness that you may not have integrated lately. In this group discussion, we will look at the 8-dimensions of wellness, find ideas and resources from your colleagues and find an action item that you can make a habit of.*

*8 Dimensions of Wellness for Educators.*

*[https://drive.google.com/file/d/1PaZQV1USDfke\\_ahwUmDE3rnXMC5wc-RQ/view](https://drive.google.com/file/d/1PaZQV1USDfke_ahwUmDE3rnXMC5wc-RQ/view)  
(accessed April 2023)*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Shannon Baxter**  
(shannon.baxter@lrsd.net)  
Collège Béliveau - DSLR

Présentation orale / *Talk*  
Dimanche, 28 mai  
*Sunday, May 28<sup>th</sup>*  
15h00 / 3:00 PM



**TITRE**

Incorporation des séances du laboratoire en Chimie 30S et 40S

**RÉSUMÉ**

Je vais vous en parler de mon expérience comme une enseignante de chimie en immersion. On va discuter des laboratoires que je fasse avec mes élèves de Chimie 30S et 40S pour appuyer le contenu du cours, encourager le français parlé et écrit en sciences et développer leurs habitudes du laboratoire. Je vais mettre l'accent sur un labo du Kps qui démontrent un concept abstrait aux Chimistes 40S. Ce laboratoire est facile à préparer et va donner aux élèves un exemple concrète de l'utilisation et l'importance du constante d'équilibre.

**TITLE**

*Incorporation of laboratory sessions to enhance teaching and learning in Chemistry 30S and 40S*

**ABSTRACT**

*This talk will highlight the experiences and successes of incorporating laboratory sessions into Grade 11 and 12 Chemistry in the French Immersion Program at a High School in Winnipeg. We'll highlight the importance of building students' lab skills and how the language learning and science content are both supported. We will specifically focus on a Ksp and Solubility lab that is done in Chemistry 40S to give students a hands-on experience with an abstract concept. The lab is easy to prepare and provides students with an example of the use and relevance of the equilibrium constant.*

**Lawton Shaw**  
(lawtons@athabascau.ca)

**Rachael Wells**  
Athabasca University

Poster  
Saturday, May 27<sup>th</sup>  
Room 1218

**49<sup>e</sup> Congrès de chimie collégiale au Canada**  
**Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference**  
**May 26-28, 2023**



## **TITLE / TITRE**

*Mobile Phone Cameras and Open Software for Reflectance Analysis*

## **ABSTRACT / RÉSUMÉ**

*Mobile phones contain sensors that can be used for quantitative measurements. With the ubiquity of mobile phones, there are opportunities to use mobile phone sensors for data collection in educational experiments. Digital camera images consist of an array of RGB pixel data that can be analyzed quantitatively using software such as ImageJ. This poster will show how to use mobile phone camera images and software to perform simple reflectance experiments using RGB intensity in digital images to determine composition of solids.*

49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023

49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023

**Guzal Mamadalieva**

(mamadalievag@mymacewan.ca)

MacEwan University

Poster

Saturday, May 27<sup>th</sup>

Room 1218



## **TITLE / TITRE**

*The Effect of 3D Model Kits on Student Confidence in Flow Chemistry via Deliberate Practice*

## **ABSTRACT / RÉSUMÉ**

*Process and Flow Chemistry: the goal of which is to have greater regulation, and replicability of experiments, faster analysis of reactions, increasing product yield, purity, and better working conditions in the laboratory, present myriad potential for carrying out a broad range of experiments. The connections between 2D drawings on paper and the actual laboratory equipment are difficult for the students to understand. Our goal is to create a method of allowing them to practice making experimental decisions outside of the laboratory setting. We want to introduce deliberate practice within the classroom to increase learner confidence, and better equip them for success in the laboratory. By equipping students with these 3D printed kits throughout the semester, we have been able to maximize their practical laboratory experience and build student confidence.*



**Rachel Kaine**  
(kaine@ualberta.ca)  
**Guzal Mamadalieva**  
MacEwan University

Poster  
Saturday, May 27<sup>th</sup>  
Room 1218

**49<sup>e</sup> Congrès de chimie collégiale au Canada**  
**Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference**  
**May 26-28, 2023**



## **TITLE / TITRE**

*Plug and Play Flow Chemistry*

## **ABSTRACT / RÉSUMÉ**

*Flow Chemistry is a relatively new area in sciences that allows for synthesis of chemical compounds in a continuous flow system through various reactors. This allows for higher yield, fast reaction time, and increased overall laboratory safety. We have built Flow Chemistry reactor boards that offer a method of hands-on visual learning for students to understand the inner workings of a reactor system. This contributes to the education and understanding of processes of flow chem by offering a direct visual of the reaction. Students are able to attach or detach any component to manipulate the parameters of their experiment. The pedagogical approach behind Flow Reactor boards links constructiveness and reflective approaches for students to develop a deeper understanding of methodology in the field of chemistry.*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Emma Davy**  
(edavy@chem.ubc.ca)  
**Tao Huan, Jade Poisson**  
University of British Columbia

Poster  
Sunday, May 28<sup>th</sup>  
Room 1218



**TITLE / TITRE**

*Using Post-Midterm Reflection Surveys to Enhance Student Engagement in a Second-year Analytical Chemistry Course*

**ABSTRACT / RÉSUMÉ**

*Chemistry 211 is a second-year analytical chemistry course offered twice per year at the University of British Columbia. To help ease the first- to second-year transition and to encourage students to engage with their midterm examinations, we designed and deployed post-midterm reflection surveys (exam wrappers). This poster will include exam wrapper design details as well as analysis of student written responses and perceptions of the exam wrappers' utility.*

**49<sup>e</sup> Congrès de chimie collégiale au Canada  
Du 26 au 28 mai 2023**

**49<sup>th</sup> College Chemistry Canada Conference  
May 26-28, 2023**

**Kimberly Buffie**

(ki.buffie@uwinnipeg.ca)

The University of Winnipeg

Poster

Sunday, May 28<sup>th</sup>

Room 1218



**TITLE / TITRE**

*Data Collection in the Inorganic Laboratory to Promote Student Engagement*

**ABSTRACT / RÉSUMÉ**

*Traditional recipe-style experiments tend not to be engaging and do not cultivate a research mindset. Experiments for CHEM-2401 at The University of Winnipeg have been adapted from the literature to allow a more inquiry-driven approach. Students work in teams and investigate different experimental conditions, promoting active decision making and creating a collaborative environment. The data collected by each team is reported to the entire class. The questions used as prompts to write the formal report develop scientific thinking by placing the emphasis on data interpretation.*

# LISTE ET ADRESSES COURRIEL DES CONGRESSISTES

## CONFERENCE ATTENDEES CONTACT DETAILS

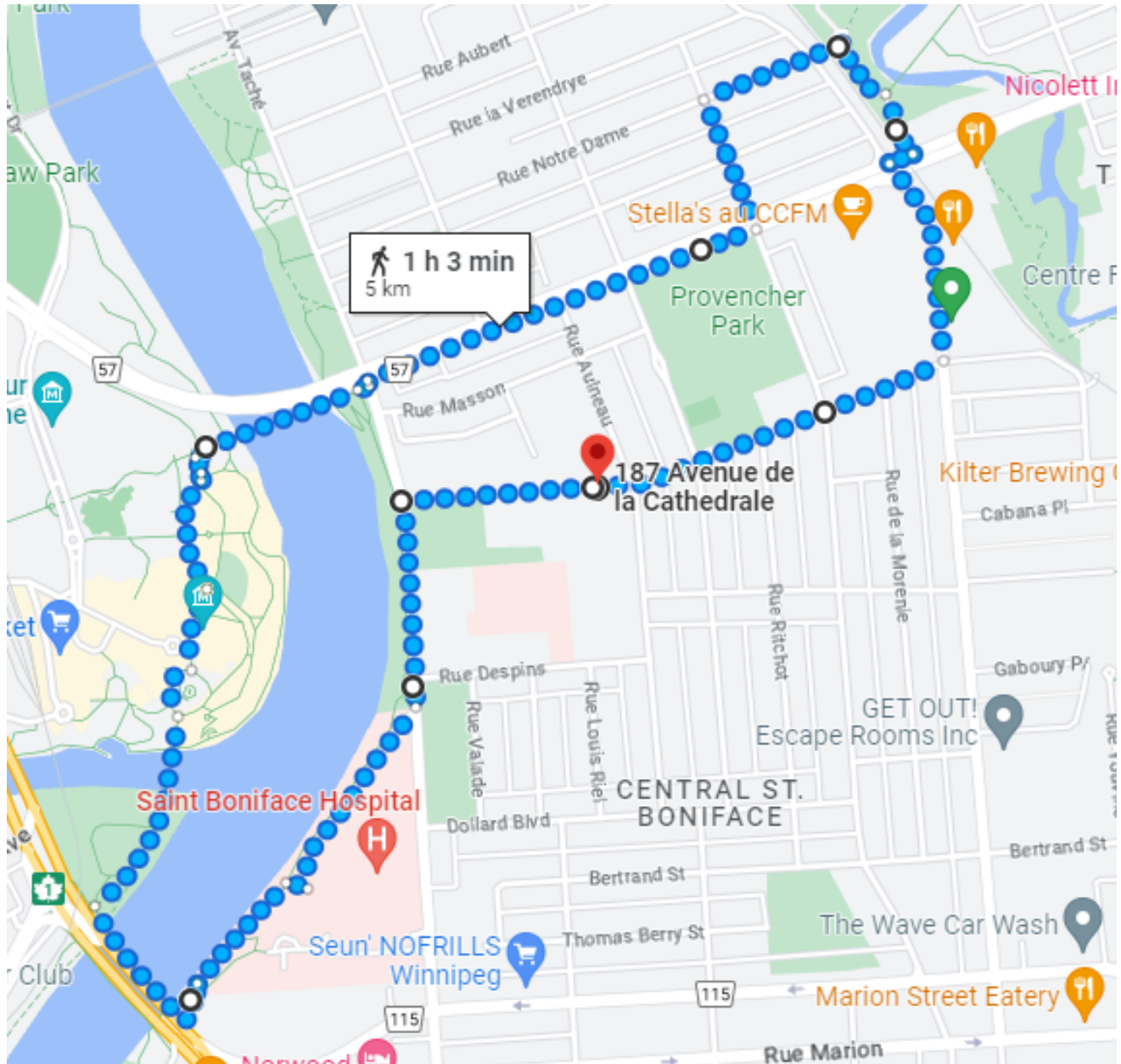
<b>Prénom First Name</b>	<b>Nom de famille Last Name</b>	<b>Institution/Affiliation</b>	<b>Adresse courriel Email Address</b>
Shannon	Accettone	Trent University	<a href="mailto:shannonaccettone@trentu.ca">shannonaccettone@trentu.ca</a>
Mohamed	Belhadj	Canadore College	<a href="mailto:mohamed.belhadj@canadorecollege.ca">mohamed.belhadj@canadorecollege.ca</a>
Bill	Blann	(Retired)	<a href="mailto:wdblann@gmail.com">wdblann@gmail.com</a>
Yann	Brouillette	Dawson College	<a href="mailto:ybrouillette@dawsoncollege.qc.ca">ybrouillette@dawsoncollege.qc.ca</a>
Kimberly	Buffie	The University of Winnipeg	<a href="mailto:ki.buffie@uwinnipeg.ca">ki.buffie@uwinnipeg.ca</a>
Andrew	Chan	University of Regina	<a href="mailto:andrew.chan@uregina.ca">andrew.chan@uregina.ca</a>
Adnan	Chaudry	Vernier Canada	<a href="mailto:achaudry@verniercanada.ca">achaudry@verniercanada.ca</a>
Bruno	Cinel	Thompson Rivers University	<a href="mailto:bcinel@tru.ca">bcinel@tru.ca</a>
Joe	Clifford	NAIT	<a href="mailto:josephc@nait.ca">josephc@nait.ca</a>
Cassandra	DeFrancesco	Trent University	<a href="mailto:cassandrdefrancesco@trentu.ca">cassandrdefrancesco@trentu.ca</a>
Natasha	Desgagnés	Institut collégial Vincent Massey - Pembina Trails School Division	<a href="mailto:ndesgagnes@pembinatrails.ca">ndesgagnes@pembinatrails.ca</a>
Michael	Dickman	Université de Saint-Boniface	<a href="mailto:mdickman@ustboniface.ca">mdickman@ustboniface.ca</a>
Andrew	Dicks	University of Toronto	<a href="mailto:andrew.dicks@utoronto.ca">andrew.dicks@utoronto.ca</a>
Erin	Dul	NAIT	<a href="mailto:dul.erin@gmail.com">dul.erin@gmail.com</a>
John	Eng	University of Lethbridge	<a href="mailto:engj@uleth.ca">engj@uleth.ca</a>
François	Gauvin	Université de Saint-Boniface (à la retraite)	<a href="mailto:f.gauvin.14@gmail.com">f.gauvin.14@gmail.com</a>
Jessie	Harrald	Western School Division	<a href="mailto:jharrald@westernsd.mb.ca">jharrald@westernsd.mb.ca</a>
Ben	Heyde	College of the Rockies	<a href="mailto:heyde@cotr.bc.ca">heyde@cotr.bc.ca</a>
Sean	Hughes	John Abbott College	<a href="mailto:sean.hughes@johnabbott.qc.ca">sean.hughes@johnabbott.qc.ca</a>
Bilkiss	Issack	Université de Saint-Boniface	<a href="mailto:bissack@ustboniface.ca">bissack@ustboniface.ca</a>
Melanie	Kaban	NAIT	<a href="mailto:melaniek@nait.ca">melaniek@nait.ca</a>
Taraneh	Lajevardi	Columbia College, Vancouver	<a href="mailto:tlajevardi@columbiacollege.bc.ca">tlajevardi@columbiacollege.bc.ca</a>
John	Lee	Camosun	<a href="mailto:leejohn@camosun.ca">leejohn@camosun.ca</a>
Carmen	Leung	Dawson College, Montreal, QC	<a href="mailto:cleung@dawsoncollege.qc.ca">cleung@dawsoncollege.qc.ca</a>
Jimmy	Lowe	British Columbia Institute of Technology	<a href="mailto:Jimmy_Lowe@bcit.ca">Jimmy_Lowe@bcit.ca</a>
Guzal	Mamadalieva	MacEwan University	<a href="mailto:mamadalievag@mymacewan.ca">mamadalievag@mymacewan.ca</a>

<b>Prénom First Name</b>	<b>Nom de famille Last Name</b>	<b>Institution/Affiliation</b>	<b>Adresse courriel Email Address</b>
Gabriel	Marineau Plante	Université de Saint-Boniface	<a href="mailto:gmarineauplante@ustboniface.ca">gmarineauplante@ustboniface.ca</a>
Christina	Mohr	Thompson Rivers University	<a href="mailto:cmohr@tru.ca">cmohr@tru.ca</a>
Arlana	Moskalyk	NAIT	<a href="mailto:arlanam@nait.ca">arlanam@nait.ca</a>
Thi Khanh Van	Nguyen	Lakehead University	<a href="mailto:tknguyen@lakeheadu.ca">tknguyen@lakeheadu.ca</a>
Sarah	Pelletier	Campus Saint-Jean / University of Alberta	<a href="mailto:sarah.pelletier@ualberta.ca">sarah.pelletier@ualberta.ca</a>
Jack	Randall	Vernier Science Education	<a href="mailto:jrandall@vernier.com">jrandall@vernier.com</a>
Janice	Rey	SAIT	<a href="mailto:janice.rey@sait.ca">janice.rey@sait.ca</a>
Paula	Rooksby	NAIT	<a href="mailto:phawrysz@gmail.com">phawrysz@gmail.com</a>
Lawton	Shaw	Athabasca University	<a href="mailto:lawtons@athabascau.ca">lawtons@athabascau.ca</a>
Michael	Slaney	NAIT	<a href="mailto:mslaney@nait.ca">mslaney@nait.ca</a>
David	Stone	University of Toronto Chemistry	<a href="mailto:david.stone@utoronto.ca">david.stone@utoronto.ca</a>
Robin	Stoodley	UBC	<a href="mailto:stoodley@chem.ubc.ca">stoodley@chem.ubc.ca</a>
Todd	Stuckless	Langara College	<a href="mailto:johntodd@langara.ca">johntodd@langara.ca</a>
Benchmen	Trieu	Daniel McIntyre Collegiate, Winnipeg School Division	<a href="mailto:btrieu@wsd1.org">btrieu@wsd1.org</a>
Ketan	Trivedi	Trivedi Chemistry	<a href="mailto:ketan@trivedichemistry.com">ketan@trivedichemistry.com</a>
Han	Truong Andrew	Daniel McIntyre Collegiate	<a href="mailto:htruong@wsd1.org">htruong@wsd1.org</a>
Véronique	Turcotte	Cégep André-Laurendeau	<a href="mailto:veronique.turcotte@clairendeau.qc.ca">veronique.turcotte@clairendeau.qc.ca</a>
Jennifer	Wolf	BCIT	<a href="mailto:jwolf8@bcit.ca">jwolf8@bcit.ca</a>



## CARTE DU / MAP OF FUN RUN & WALK

**Dimanche 28 mai à 8h00 / Sunday May 28<sup>th</sup> at 8:00 am**



**D'autres informations vous seront communiqués lors du congrès  
Other information will be provided to you during the conference**

# **NOTES DE CONGRÈS / CONFERENCE NOTES**

# **NOTES DE CONGRÈS / CONFERENCE NOTES**

# **NOTES DE CONGRÈS / CONFERENCE NOTES**

# **NOTES DE CONGRÈS / CONFERENCE NOTES**