



STAM MTS PD Day October 20, 2023



UN International Year of Basic Sciences for Sustainable Development

The STAM MTS 2023 Professional Learning Conference takes place Friday October 20th with sessions at **Garden City Collegiate, VIRTUALLY,** and at various **OFF-SITE LOCATIONS** including Fort Whyte Alive, Oak Hammock Marsh, the Royal Aviation Museum, Riding Mountain National Park, the Assiniboine Park Zoo, and the St. Boniface Hospital Research Youth BIOLab. There is also an overnight session at the IISD-ELA Experimental Lakes field station in Ontario.

STAM is pleased to welcome
Wilfred Buck
as our keynote speaker.

Please register online at STAMMTSPDDAY2023.eventbrite.ca

Friday Garden City Collegiate Schedule

711 Jefferson Avenue, Winnipeg

9:00-10:00 a.m. Morning Keynote Speaker

Morning Breakout Sessions:

10:30-12:30, 10:30-11:30, & 11:30-12:30

Afternoon Breakout Sessions:

1:30-3:30, 1:30-2:30, & 2:30-3:30

Morning refreshments available
in the Exhibitor Area at 8:15 a.m.

A hot lunch buffet is available
11:30 a.m. - 1:30 p.m.
at Garden City Collegiate ONLY.
(Pre-order lunch tickets for \$20)

STAM AGM Awards and Reception 3:30 p.m.
Recognize and celebrate excellence in science education. Connect with science colleagues from around the province and beyond. New members are welcome to join the STAM BOD. Win prizes!

EVERYONE WELCOME

Friday Morning Keynote 9:00-10:00 a.m.

KISKINNITAIMOWIN, The Act of Coming to Know

Wilfred Buck



Wilfred Buck is an ININIW (Cree), Indigenous Astronomer & Consultant, Author, Educator, Addictions Consultant, Cultural Consultant, Education Consultant, Sun Dance Chief, Knowledge Keeper, Lecturer, Astrologer, Artist, Father, Husband, Portable Planetarium Owner & Operator. Wilfred originates from OPASKWAYAK CREE NATION (OCN) and is a graduate of the University of Manitoba with two degrees in Education. He has 25 years of experience as an educator working with students from Kindergarten to University. Wilfred also worked as a Science Facilitator at Manitoba First Nations Education Resource Centre for 15 years where he did extensive research on ININIW ACAKOSUK (Cree Stars/Constellation), retiring from that position on Dec. 31st, 2020. Presently, Wilfred does planetarium presentations with his mobile planetarium as well as lectures and presents keynotes about Indigenous Astronomy and Indigenous Worldview. He is considered the foremost authority on Indigenous Astronomy in the world. During this presentation he will share the ININIW (Cree) methodological process.

“Researching Ininiw Acakosuk is an ongoing learning process with new wisdoms revealed with each connection of prior knowledge and new perspectives...” Wilfred Buck

Email: Wilfred.buck@outlook.com Website: acakwuskwun.com

The keynote session will be livestreamed.

Thursday October 19th-Saturday October 21 2023

IISD-ELA OFF-SITE OVERNIGHT SESSION

STAM1 Experience Freshwater Research at IISD-ELA's Field Site (IISD-ELA Field Station, Ontario) Oct. 19-21

Sarah Warrack, IISD- Experimental Lakes Area, swarrack@iisd-ela.org

Level: 6-12

You will need to find your way to our field site and bring your own food and tents.

Day 1: Thursday October 19

- Drive from Winnipeg to IISD-ELA
- 4:00-8:00 p.m. set up tents
- Health and Safety and ELA presentations

- Dinner/tour of facility/L239/Sacred Fire Pit

Day 2: Friday October 20

- Comparing biology and chemistry of lakes
- Understanding the data
- Canoeing
- SDGs
- Outdoor games
- Plant identification
- Astronomy

Day 3: Saturday October 21

- Group discussion, more freshwater fun!!
- Leave at 12:00 p.m.

Friday October 20th 2023 OFF-SITE LOCATION SESSIONS

The following sessions take place at various locations and times as indicated.

STAM2 Project WET (Water Education for Teachers) 10:00 a.m. – 3:00 p.m. at Oak Hammock Marsh

Nathalie Bays, Oak Hammock Marsh

Level General

Location: Oak Hammock Marsh Wetland Discovery Centre

This hands-on workshop is filled with demonstrations, activities and experiments to help teach water concepts to all ages. Session includes activity book. Although this workshop is mostly indoors, please dress for the weather for outdoor activity demonstrations. The Café is open for lunch.

10am-3pm at Oak Hammock.

www.oakhammockmarsh.ca

STAM3 Zoo Conservation & Research at the Assiniboine Park Zoo 1:00-3:30 p.m.

Conservation & Research Department and Education & Programming Department of Assiniboine Park Conservancy

Level General

Location: Assiniboine Park Zoo

Join us at the Zoo for a tour and presentation. Your trip will highlight the educational programs at the Zoo, their connection to the science curriculum, and the role a modern zoo plays today. Your guide will provide you with helpful hints for getting the most out of your field trip. The program includes a visit to the Leatherdale International Polar Bear Conservation Centre with an overview of the conservation and research work that happens within the Zoo and how you can bring the Beluga Bits community/citizen science project into your classroom.

STAM4 “Park”ticipACTION (10:00 a.m. to 3:00 p.m. in Riding Mountain National Park)

George Hartlen, Friends of Riding Mountain National Park (www.friendsofridingmountain.ca) & Valerie Pankratz, Riding Mountain UNESCO Biosphere Reserve (www.rmbr.ca)

Location: Friends of RMNP Learning Centre (154 Columbine Street), Riding Mountain National Park

Level: General

Friends of Riding Mountain National Park and the Riding Mountain UNESCO Biosphere Reserve, two

not-for-profit organizations, offer year-round education programming at Riding Mountain National Park. Available for K-12 students, the focus is on being outdoors, having fun and learning in a natural setting. The first program, “Caching” Riding Mountain, showcases GPS technology and the activity of Geocaching as a means of participating in innovative learning. The second program, Manitoba’s Biodiversity, explores the Ecosystems in Manitoba, the Biodiversity that lives within these systems and the role that humans play in their protection. Lunch is from 12:00 to 1:00 pm. You may bring a bag lunch or purchase from a nearby location. Please dress for the weather and walking.

STAM5 New STEM programming at the Royal Aviation Museum 9:00-11:30 a.m.

Brianne Vielfaure, STEM Education Administrator
Level General *Repeated Session*

Location: Royal Aviation Museum of Western Canada, 2088 Wellington Avenue, Winnipeg

An overview of our twelve science-based programs which will be offered this year at the new Royal Aviation Museum including new middle school STEM programs.

STAM6 New STEM programming at the Royal Aviation Museum 1:00-3:30 p.m.

Brianne Vielfaure, STEM Education Administrator
Level General *Repeated Session*

Location: Royal Aviation Museum of Western Canada, 2088 Wellington Avenue, Winnipeg

An overview of our twelve science-based programs which will be offered this year at the new Royal Aviation Museum including new middle school STEM programs.

STAM7 Outdoor Science at FortWhyte Alive 10:00 a.m. – 3:00 p.m.

Katrina Froese, Education Programs Coordinator,
Fort Whyte Alive, kfroese@fortwhyte.org

Level 6-12

Location: FortWhyte Alive, 1961 McCreary Road, Winnipeg

FortWhyte Alive will be sharing activities and resources to support you in the creation of outdoor

science lessons linked to local ecosystems. We will guide you through environmental science activities from FortWhyte's school programs on land, and you'll learn all about Riverwatch, an outreach program we offer which guides students through monitoring the water quality of a local waterway. Please dress for the weather. www.fortwhyte.org

STAM8 Learning about heart disease at the Youth BIOLab 9:00 a.m. – 12:00 p.m.

Stephen Jones, Meghan Kynoch & Anjelica Bodnaryk, St. Boniface Hospital Research & St. Boniface Hospital Research Youth BIOLab, sjones@sbrc.ca youthbiolab.ca

Level 8-12

Location: St. Boniface Hospital Albrechtsen Research Centre Youth BIOLab, 351 Tache Ave
Most students know someone touched by disease and are naturally curious about what happens in the body when things go wrong. Join us at the Youth BIOLab, part of St. Boniface Hospital Research, as we share our model for connecting health science and the groundbreaking medical research to classroom curricula through hands-on learning activities that you can incorporate into your units on health, cells, and body systems. Learn about the cardiovascular system and current heart disease research as we guide a pig heart dissection and see live heart cells in the lab.

STAM9 Rocketry – Fins and Targets 1:00-3:30 p.m.

Maria Nickel, Royal Aviation Museum STEM Programs marianickel@shaw.ca

Level 9-12

Location: Royal Aviation Museum of Western Canada, 2088 Wellington Avenue, Winnipeg
Learn about the black Brandt Rocket from Magellan Aerospace and how your students can build a simulated rocket with fins and launch to a designated target. Hands on fun for participants and prizes will be awarded to the best rocket.
www.royalaviationmuseum.com

STAM10 Food and Water Security: An Integrated Approach to Sustainable Agriculture At Kelburn Farm 9:00 a.m. – 3:30 p.m.

Kent Lewarne, Bob Adamson and Cheryl Boguski, Nutrients for Life Canada

Level 9-12

Location: Kelburn Farm, 1228 Kelburn Rd, Howden
Join us for a full day, off site session, to walk through a ready to use series of lessons! This teaching package can be utilized in Grade 10 Social Studies and/or Grade 10 Science but could also be used for Global Issues, Agriculture or a Current Topics in Science course. Use this as is our take advantage of several "jump off" points to expand this package even farther.

Friday October 20th 2023 VIRTUAL SESSIONS

The following sessions take place virtually. Links will be sent to attendees.

Virtual Sessions 10:30-11:30 a.m.

STAM11 Learning with Polar Bears

Alysa McCall & Marissa Krouse, Polar Bears International, amccall@pbears.org

Level General

Polar Bears International is the only non-profit solely dedicated to the conservation of wild polar bears, working to keep polar bears roaming the Arctic through a combination of research, education, and media. We are committed to providing teachers, parents, and students free and engaging resources that fit into curriculum standards for multiple grade levels. Join us to learn about how we teach students about polar bears, the Arctic, and climate change, and how these lessons can be worked into math, social studies, biology, and more at different grade levels. We are happy to answer questions about what we do, or just about polar bears!

www.polarbearsinternational.org

STAM12 Transforming STEM Teaching and Learning in the Modern Classroom

Lia De Cicco Remu & Nathan Kostiuk, Let's Talk Science Parlons Sciences

Level General *Repeated Session*

Let's Talk Science is a national charitable organization that offers free, curriculum-aligned, online educational programs and resources in K–12 science, technology, engineering, and mathematics (STEM) subjects for both students and educators in English and French. www.letstalkscience.ca

STAM36 Empower Students on their Design Thinking Journey

Dr. Anju Bajaj, Manitoba Catholic Schools STEM Advisor / Teacher Leader Let's Talk Science mcsstemadvisor@gmail.com

Level 4-12 *Repeated Session*

The Design Thinking process allows students to develop many skills that are transferable across curricula. In this session, you will explore the process in detail and have the opportunity to examine various learning strategies and scaffolds at various stages in the Design Thinking process.

Virtual Sessions 11:30-12:30 a.m.

STAM13 Current Research Talk

Dylan McCart, Churchill Northern Studies Centre
Level General

Learn about the current sub-arctic research being performed at the Churchill Northern Studies Centre, located near Churchill Manitoba.

ed@churchillscience.ca

STAM14 Transforming STEM Teaching and Learning in the Modern Classroom

Lia De Cicco Remu & Nathan Kostiuk, Let's Talk Science Parlons Sciences

Level General *Repeated Session*

Let's Talk Science is a national charitable organization that offers free, curriculum-aligned, online educational programs and resources in K–12

science, technology, engineering, and mathematics (STEM) subjects for both students and educators in English and French. www.letstalkscience.ca

STAM 43 Empower Students on their Design Thinking Journey

Dr. Anju Bajaj, Manitoba Catholic Schools STEM Advisor / Teacher Leader Let's Talk Science mcsstemadvisor@gmail.com

Level 4-12 *Repeated Session*

The Design Thinking process allows students to develop many skills that are transferable across curricula. In this session, you will explore the process in detail and have the opportunity to examine various learning strategies and scaffolds at various stages in the Design Thinking process.

Virtual Session 2:00-3:00 p.m.

STAM15 Ocean, Freshwater & Us: The Giant Floor Map and Augmented Reality Experience

Janice Williams, Canadian Ocean Literacy Coalition

www.colcoalition.ca | www.oceanweekcan.ca

Level 4-8

Imagine walking on a giant map, following the local river all the way to the ocean. What connections could you make? What questions would you ask about the places you observe? Join us for an interactive session where we will explore the connections between ourselves and the water that surrounds and sustains us. We will investigate locally relevant aquatic topics where the giant floor map can serve as an instructional tool such as biodiversity, ecosystems, water systems, ocean-climate action, and more. Additionally, we will discover how immersive technologies, such as augmented reality, can be used to facilitate an inquiry-based approach and inspire all who experience learning on/with the map to take action, ensuring healthy ocean and freshwater systems for future generations. ****This is a BYOD facilitated session. A smart device (Android/ iPad iOS) will enable access to the immersive augmented reality experience.**** Download the App at oceanweekcan.ca/learning-hub/map.

Friday October 20 2023 GARDEN CITY COLLEGIATE SESSIONS

The following sessions take place at Garden City Collegiate.

8:00 a.m. MAPT (Manitoba Association of Physics Teachers) AGM

All physics teachers are welcome!

A great opportunity to see what MAPT is up to, make suggestions, and become a member.

**9:00 – 10:00 a.m.
Morning Keynote
Wilfred Buck**

Friday Morning Sessions 10:30 a.m.-12:30 p.m.

STAM16 Slow the Flow: Water Conservation

Minna Goulet, Interpreter, FortWhyte Alive
mgoulet@fortwhyte.org

Level General www.fortwhyte.org

Slow the Flow is a water conservation program funded by the City of Winnipeg's Water and Waste Department and delivered by FortWhyte Alive. This program offers resources, lessons and virtual presentations at no cost. The focus is on Winnipeg; rural teachers are welcome to attend. We will cover where our drinking water comes from, where our sewage goes, and ways to conserve water and prevent pollution. The Leak Detector Challenge is an activity that can help students identify water leaks at home.

STAM17 How-To Science: A Hands-On Exploration of Teaching Approaches

Jacqueline Monteith, Frontier School Division,
jacqueline.monteith@fsdnet.ca

Level K-10

Participants will explore approaches to teaching K-10 Science in multiple curricular areas. This exploration will include Scientific Method, Design Process, Scientific Studies, and Phenomena. The session will be hands-on, and teachers will leave the session with ideas and materials for immediate implementation. Teachers will be able to customize their own learning experience during this session with their own grade and cluster interests.

STAM100 Let's Get Experimental

Belinda Jaksic, RETSD

Level 9-12

In this session we will explore a variety of hands-on science activities and experiments that can be investigated in high school science. This session will provide participants with new ideas and resources to bring into the classroom. Participants will receive a document including all the experiments and activities and their curricular outcomes. Join us as we perform a DNA extraction from bananas, observe sugar density in water, and explore many more activities!

Friday Morning Sessions 10:30-11:30 a.m.

STAM18 The Micro:Bits of Technology in the Classroom

Melissa Smith, Louis Riel School Division, &
Caleigh Bell, WISE Kid-Netic Energy & Collège
Béliveau

Level General

In this session we explore the use of technology in the classroom using Micro:Bits. With a focus on effective pedagogical practice, participants will begin by learning how to program a Micro:Bit to create a name tag and will learn about other activities that can be used in various subject areas including math, science, computer science, social studies, music, French, English and physical education. Participants will be primarily working with the MakeCode (block-based) editor to write code, but for those who are already experienced

with the concept of coding, they can add the challenge of working in Python or JavaScript. Additional cross curricular ideas will be shared, and participants will leave with all the activity details from the session. Participants can bring their own laptops and will leave with their very own Micro:bit to bring back to their classroom! No prior experience with coding is required.

STAM19 How to incorporate Let's Talk Science into your classroom

Kim Haesu, Let's Talk Science

umanitoba@outreach.letstalkscience.ca

Level K-6

Repeated Session

Let's Talk Science is a national charitable organization committed to preparing youth for evolving career and citizenship demands in a rapidly changing world. Our goal is to positively impact every child in Canada. We do this primarily by providing programs and resources for educators that help them improve youth education and engagement in science, technology, engineering and math (STEM). Our robust suite of programming is available in English and French at no cost to schools, early years centres, community organizations and parents/caregivers. We also support a diverse network of volunteers, the majority of which are postsecondary students who build career-readiness skills themselves by delivering and participating in Let's Talk Science programming. Let's Talk Science is committed to developing youth who are creative, critical thinkers and knowledgeable citizens prepared to participate and thrive in a complex global environment. In this virtual session you will learn from a Let's Talk Science Coordinator how you can bring Let's Talk Science programming into your classroom and many other ways to get involved.

STAM20 Explore energy efficiency resources for your classroom

Generation E, Efficiency Manitoba

Level K-6 & 9

Discover Generation E, an exciting Efficiency Manitoba education initiative that brings the conversation about energy efficiency and sustainability to Manitoba classrooms. In this session, you'll have the opportunity to explore Generation E's activities and resources, learn how you can incorporate them into your lessons, and share your insights.

STAM21 K-10 Science Curriculum Renewal Project - Update

Jason Braun and Greg Johnson, Manitoba Education and Early Childhood Learning; Laure Ghia, Bureau de l'éducation française

Level K-12

Repeated Session

Science consultants from Manitoba Education and Early Childhood Learning will present an update on the K-10 science curriculum renewal project.

Educators will also have an opportunity to provide feedback to further guide the renewal of the K-10 science curriculum.

STAM22 The Good Life and KBI: Celebrating Indigenous Perspectives

Gigi Fallorin, Kids Boost Immunity (KBI)/Hugh John Macdonald School

Level 4-12

The Good Life refers to living a well-balanced life where all four components of a human are being addressed—emotional, physical, mental, and spiritual. “It is through the taking of responsibility for their own personal healing and growth that individuals will be able to attain mino-pimatasiwin (Cree)—the good life.” KBI (Kids Boost Immunity) plays a pivotal role in ensuring the good life among students as they embark on using the KBI site, and celebrating indigenous perspectives on diseases and vaccines. This session will introduce the participants to what the KBI platform is all about, how to register, and explore valuable lessons at multi-grade levels. A KBI Challenge on indigenous perspectives will be the highlight. The session ends with this reflective question - where is the good life with KBI?

STAM23 The Earth's Crust Part I

Jeff Young, Department of Earth Sciences, University of Manitoba, Jeff.Young@umanitoba.ca

Level 4-12

We will discuss specific learning outcomes related to the rock cycle and potential activities that can be used in Grade 7.

STAM24 Save the Astronaut Suit

Maria Nickel, Royal Aviation Museum STEM Programs

Level 6-12

Participants will learn about spacesuits past and present and how to use the design engineering process to save an astronaut suit from damage. Come prepared to engage in hands on learning.

STAM101 Lunar Exploration – Creating Craters and Soil Sample Return

Andrea Misner, MAPT
Andrea.misner@7oaks.org

Level 8-12

This session will explore the Canadian Space Agency (CSA) return to the Moon! The hands-on activities will include creating lunar craters and taking and analyzing soil sample returns. The crater activity can be extended into Physics 30s and 40S.

STAM25 James Webb Space Telescope Classroom Connections

Kelly Foyle, Perimeter Institute

Level 9-12

Are you looking for ways to connect your students with the latest results from the James Webb Space Telescope (JWST)? Join us as we describe what the JWST is revealing and explore ways to bring the latest results into your classroom. Topics will include cosmological redshift, lensing, exoplanet atmospheres and how the JWST works.

STAM26 How to Start a High Altitude Balloon (HAB) Club

Heidi Werner, MAPT

Level 9-12

Learn all about the process of sending a HAB to space with your students! Discussions will include materials, cost, procedures, and collaboration with the school HAB community in Manitoba.

Friday Morning Sessions 11:30 a.m.-12:30 p.m.

STAM27 ININIW ACAKOSUK

Wilfred Buck

Level General *Repeated Session*

Join a planetarium session which ININIW ACAKOSUK (Cree Stars) and Indigenous Astronomy will be presented. acakwuskwun.com

STAM28 How to incorporate Let's Talk Science into your classroom

Kim Haesu, Let's Talk Science

umanitoba@outreach.letstalkscience.ca

Level K-6 *Repeated Session*

Let's Talk Science is a national charitable organization committed to preparing youth for evolving career and citizenship demands in a rapidly changing world. Our goal is to positively impact every child in Canada, from early years through secondary school. We do this primarily by providing programs and resources for educators that help them improve youth education and engagement in science, technology, engineering and math (STEM). Our robust suite of programming is available in English and French at no cost to schools, early years centres, community

organizations and parents/caregivers. We also support a diverse network of volunteers, the majority of which are postsecondary students who build career-readiness skills themselves by delivering and participating in Let's Talk Science programming. Let's Talk Science is committed to developing youth who are creative, critical thinkers and knowledgeable citizens prepared to participate and thrive in a complex global environment. In this virtual session you will learn from a Let's Talk Science Coordinator how you can bring Let's Talk Science programming into your classroom and many other ways to get involved.

STAM29 K-10 Science Curriculum Renewal Project - Update

Moved to 1:30-2:30 p.m.

STAM30 The Earth's Crust Part II

Jeff Young, Department of Earth Sciences,
University of Manitoba, Jeff.Young@umanitoba.ca
Level 6-12

We will discuss specific learning outcomes related to the rock cycle and potential activities that can be used in Grade 7.

STAM31 Physics Teachers' Favourites

Jen Piasecki & Trevor Friesen-Stoesz, MAPT
Level 9-12

STAM32 Beyond Bohr: A Quantum Approach to the Atom

Damian Pope, Perimeter Institute
Level 11

Take your students Beyond Bohr, a resource designed in collaboration with teachers and researchers from Perimeter Institute. Most high school physics and chemistry classes culminate their discussion of the atom with the Bohr Model even though Bohr himself knew the model was wrong. In this workshop we will show you how you can introduce the quantum model of the atom with classroom-ready activities.

Friday Afternoon Sessions 1:30-3:30 p.m.**STAM33 Integrating Engineering Challenges into Your Science Program**

Tina Hellmuth, STAM
Level Grades 4-9

Invite your students to practice 4 C skills while meeting curricular outcomes. This session will provide you with instant challenges that you can do with easily accessible materials that will engage and challenge your students. It will familiarize you more with Destination Imagination and other opportunities to build risk-taking reflection and resiliency. You will have a chance to try some challenges! Materials available in English and French for those French Immersion teachers who want to strengthen language skills.

STAM34 Building Thinking Classrooms Outside of Math – A Physics Example

Greg Speiser, MAPT
Level 9-12

Peter Liljedahl's *Building Thinking Classrooms* challenges math teachers to transform their instruction by offering concrete steps to create a guided inquiry environment with active, engaged learners. For some math teachers, moving away from direct instruction focused on "I do, We do, You do" towards a model that embraces some form of inquiry has mostly been an aspirational goal. Judging by the number of recent workshops, BTC is helping many math teachers transform their classrooms. But what about outside of the math classroom? To what extent can we apply the same design to non-math classes? I invite you to experience an example of guided-inquiry in "student-mode" as we visit . Don't worry if you don't teach Physics or even if you never took it in high school. While my classroom is always a work in progress, I offer a chance to participate in a learning environment driven by collaboration and student thinking. I've stolen ideas from Liljedahl and from Modeling Instruction (<https://www.modelinginstruction.org/>) in order to let you revisit your youth and become a student again—even if for only an afternoon. After we are done with "student-mode" we will have a bit of time to discuss take-aways—how we can (or cannot) apply this approach to various courses and school settings.

Friday Afternoon Sessions 1:30-2:30 p.m.

STAM35 ININIW ACAKOSUK

Wilfred Buck

Level General *Repeated Session*

Join a planetarium session which ININIW ACAKOSUK (Cree Stars) and Indigenous Astronomy will be presented. acakwuskwun.com

STAM36 K-10 Science Curriculum Renewal Project - Update

Jason Braun and Greg Johnson, Manitoba Education and Early Childhood Learning; Laure Ghia, Bureau de l'éducation française

Level K-12 *Repeated Session*

Science consultants from Manitoba Education and Early Childhood Learning will present an update on the K-10 science curriculum renewal project.

Educators will also have an opportunity to provide feedback to further guide the renewal of the K-10 science curriculum

STAM37 Empower Students on their Design Thinking Journey

Changed to Virtual Session.

STAM38 From Atoms to Sustainable Materials

Mario Bieringer, University of Manitoba

Level 4-12 *Repeated Session*

Presentation/discussion/sustainable energy activities (From atoms to sustainable materials).

STAM39 Caring for Our Watersheds

Megan Allen, Interpretive Specialist, Ducks

Unlimited Canada, m_allen@ducks.ca

Level 6-12 *Repeated Session*

Learn about Manitoba's Caring for Our Watersheds (CFOW) competition! In this session we will review information about our local watershed as well as the steps to for students in grades 7-12 to participate in the annual CFOW competition. This contest asks students to answer the question: what can you do to help improve our watersheds? By submitting a project proposal answering this question students have the opportunity to win up to \$1000 for themselves in addition to prizes for their school and further funding to implement their ideas.

STAM40 Climate Anxiety & Climate Action

Dave Fish, Perimeter Institute

Level 9-12

Anthropogenic climate change is one of the most important issues facing our students and many are feeling overwhelmed by the situation. Join us as we explore climate solutions and share classroom strategies for addressing climate anxiety. The Evidence for Climate Change resource is the product of collaboration between classroom teachers, Perimeter Institute researchers, and climate scientists.

STAM41 Physics Escape Room

Dan Colonval, MAPT

Level 9-12

Escape boxes are a great way to engage kids in reviewing material. I will share how I use them in high school physics, demonstrate some of the ones I have created and provide some tips if you are interested in creating your own for use in the classroom.

Friday Afternoon Sessions 2:30-3:30 p.m.

STAM42 Environmental Education and Outdoor Learning

Carly Gray CPAWS Manitoba carly@cpawsmb.org

Level General

In this session, participants will engage in several activities and discussions about how to incorporate outdoor learning into the classroom. We will discuss tools and tricks that help make outdoor learning fun and meaningful. Taking a holistic approach to the curriculum, we will explore how all subject areas connect to environmental and outdoor learning. The importance of outdoor learning and environmental education and how they can be incorporated both inside and outside of the classroom will be highlighted. The session will include outdoor learning resources for grades K-12. This session will be held outdoors rain or shine, so participants should be dressed for the weather and remember to bring a water bottle!

STAM43 From Atoms to Sustainable Materials

Mario Bieringer, University of Manitoba

Level 4-12 *Repeated Session*

Presentation/discussion/sustainable energy activities (From atoms to sustainable materials)

STAM44 Empower Students on their Design Thinking Journey

Changed to Virtual Session.

STAM45 Caring for Our Watersheds

Megan Allen, Interpretive Specialist, Ducks

Unlimited Canada, m_allen@ducks.ca

Level 6-12 *Repeated Session*

Learn about Manitoba's Caring for Our Watersheds (CFOW) competition! In this session we will review information about our local watershed as well as the steps to for students in grades 7-12 to participate in the annual CFOW competition. This contest asks students to answer the question: what can you do to help improve our watersheds? By submitting a project proposal answering this question students have the opportunity to win up to \$1000 for themselves in addition to prizes for their school and further funding to implement their ideas.

STAM46 Rollercoaster Physics

Kaitlynn Buffie, MAPT

Level 9-12

STAM47 The Mystery of Dark Matter

Noah Joseph, MAPT

Level 9-12

Description: This presentation will cover The Perimeter Institute for Theoretical Physics resource on Dark Matter. This resource fits well in the grade 12 physics curriculum as it includes and encourages students to apply circular motion, orbital motion, conservation of energy, and conservation of linear momentum to the concepts surrounding dark matter. It also includes additional resources on gravitational lensing and spacetime.

STAM AGM Awards and Reception 3:30 p.m.

Recognize and celebrate excellence in science education. Connect with science colleagues from around the province and beyond. New members are welcome to join the STAM BOD. Win prizes!

EVERYONE WELCOME

REGISTRATION AND MEMBERSHIP INFORMATION

PLEASE READ CAREFULLY

Registration available online STAMMTSPDDAY2023.eventbrite.ca

STAM Membership 2023-2024 (*Membership fees may be paid in conjunction with the conference fee.*)

General/Student \$20.00

Full Day Conference Fees	Early Bird (by October 1)	Regular (Oct. 2– 20)
STAM Member	\$40.00*	\$50.00*
Non-Member	\$59.00	\$69.00
Full-time Student STAM Member	Free**	\$10.00**

Half Day Conference Fees	Early Bird (by October 1)	Regular (Oct. 2– 20)
STAM Member	\$30.00*	\$40.00*
Non-Member	\$49.00	\$59.00
Full-time Student STAM Member	Free**	\$10.00**

*For **regular STAM members**, your total early bird cost for the full day conference, including a STAM membership, is **\$60.00 (\$70 after Oct. 1)**.

****Full-time** students receive a free early bird conference registration with a STAM membership (\$10.00 registration fee with STAM membership after October 1st).

LUNCH \$20

A hot buffet lunch catered by Urban Prairie Cuisine is available 11:30 a.m. – 1:30 p.m. at Garden City Collegiate ONLY.

Lunch must be pre-purchased when registering.

Lunch Menu

Caesar, cranberry apple & Greek orzo pasta salads
Roasted pork loin with apple sage sauce
Herb grilled chicken breast, tomato ragu
Herbed baby potatoes with butter and onions
Vegetable medley in lemon rosemary butter
Chickpea curry with rice (vegan/vegetarian)
Dinner rolls and dainties

- ◆ Please go to the STAM website at www.sciencemanitoba.ca and follow the link for online registration.
- ◆ Please check website for session updates on new, full, and cancelled sessions.
- ◆ Please note that while STAM will not cancel sessions, a presenter might. STAM will do its best to help registrants find alternate session(s) should that happen.
- ◆ Conference fees and STAM memberships are non-refundable.
- ◆ Registration is on a first-come basis and many sessions will fill up quickly.