STAM MTS PD Day
October 25, 2024

Innovations in Science and Education

The 64th Annual STAM MTS 2024 Professional Learning Conference takes place
Friday October 25th 2024
There are **ON-SITE** sessions at **Garden City Collegiate**, **VIRTUAL** sessions,
and various sessions **OFF-SITE** including at
the Assiniboine Park Zoo, Birds Hill Park, the Boreal Woods Nature Centre,
Fort Whyte Alive, Kelburn Farm, the Royal Aviation Museum,
the St. Boniface Hospital Research Youth BIOlab and the University of Manitoba.

STAM is pleased to welcome
Dr. Denise Koh
as our keynote speaker.

Please register online at mbteach.org

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 $25)

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.

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.

Dr. Denise Koh

The Evolving Role of Technologies in Health Care and Addressing Public Health Inequities

Denise Viardo Koh, BSc, MD, CCFP, MPH, FRCPC, ACBOM
Public Health and Occupational Medicine Specialist, Assistant Professor, University of Manitoba, President, Federation of Medical Women of Canada - Manitoba Branch
Founder, MedResRx; Creator, the MedResRx Hypnotherapy App drdenisekoh.com

Dr. Denise Viardo Koh is an award-winning Canadian Tsinay Public Health and Occupational Medicine specialist, hypnotherapist, life coach, speaker, author, assistant professor, and President of the new Manitoba Branch of the Federation of Medical Women of Canada. She has consistently put her training, analytical skills, broad systems thinking, story-telling and connections to use through action, advocacy, and leadership. As Manitoba's former Chief Occupational Medical Officer/Medical Officer of Health she led the Workplace COVID Unit and the response for Food Processing, Temporary Foreign Workers, and other high risk/racialized worker groups. She founded MedResRx which runs a Facebook Canadian physician support network for medical learners and an informal Canadian Physician Suicide Log. Her MedResRx Hypnotherapy App and virtual group therapy allows anyone to access her motivational, Burnout Blaster, and other wellness programs anytime anywhere.

Her healer superpower is turning patients into powerhouses in record time. She heals systems by assessing risk and championing complex issues in dynamic systems using innovative approaches. She promotes equity, diversity, inclusivity and representation by sharing her experiences with anti-Asian racism and sexism in Medicine and the workplace, her insights into what makes racialized workers sick, and the pandemic learnings we're not putting into practice.

During the presentation Dr. Koh will address aspects of the scientific method, traditional research, and evidence-based medicine that have put our population's and society's health at a disadvantage and review how system inequities contribute to poorer population health for all as a rationale for reframing our *why*. She will outline key shifts in thinking related to technology that we have learned from the pandemic and the ones we need to embrace. She will discuss current work and initiatives that address equity issues and contribute to putting healing back in health care and medicine. Let's get excited about your role in teaching science in this new era of technology and ways we can work together!

The keynote session will be livestreamed.

Friday October 25th 2024 OFF-SITE SESSIONS

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

The Modern Zoo, You, and Your Student Crew - 1:30-3:30 p.m.
Barret Miller, Manager of Education, Assiniboine Park Conservancy bmiller@assiniboinepark.ca
Level: General (maximum 24 participants)
Location: Assiniboine Park Zoo, Special Events Entrance, 54 Zoo Drive, Winnipeg, MB
A visit to Assiniboine Park Zoo builds connection with animals - but also can connect students to career paths in STEM fields, inspire personal sustainability efforts, and raise awareness of conservation science in Manitoba. This 2-hour session will take you behind the scenes to the technical side of a modern zoo's animal care operations, highlight what is happening locally to protect endangered species, give you the chance to see our Conservation and Research team in action, and show you how science at any grade level can connect to Assiniboine Park Zoo.

Educational programming at the Royal Aviation Museum - 1:00-3:30 p.m.
Brianne Vielfaure, Candace Kostna & Marc Neufeld, Royal Aviation Museum of Western Canada
Level: General
Location: Royal Aviation Museum of Western Canada, 2088 Wellington Avenue, Winnipeg
An overview of our curriculum-based and STEM focused courses offered at the Royal Aviation Museum of Western Canada for students between kindergarten and grade 12.
https://royalaviationmuseum.com/
programs@royalaviationmuseum.com

Connecting the Forest to your Curriculum – 10:00 a.m. – 2:00 p.m.
Mike James, Boreal Woods Nature Centre
Level: 2-12
Location: Boreal Woods Nature Centre 100 003 Highway 59N (just south of the Grand Beach turnoff)
An opportunity for teachers to learn of forest activities that their students can participate in, on a field trip to the forest nature centre during April, May or June. Access to classroom and washrooms. Please bring a bag lunch and dress for the weather. Fire pit and shelter available. Arrange your own transportation. www.theoutdoorclassroom.net

Earth Science and the Wallace Building 9:00 a.m. -3:00 p.m.
Jeff Young, Department of Earth Sciences, University of Manitoba
Level: 4-12 (maximum 20 participants)
Location: Wallace Building, University of Manitoba
We will spend the day introducing teachers to some activities we offer in support of the Manitoba science curriculum. We will also explore some additional Earth science activities that may be used to enhance curriculum objectives. Lunch is provided and parking passes available upon prior request.

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 share activities and resources for engaging in science learning outdoors! We will be featuring environmental science activities from FortWhyte's school field trip programs, and featuring Riverwatch water monitoring, an outreach program we offer which can get your students outside safely monitoring the water quality of a local waterway. Please dress for the weather. www.fortwhyte.org

Health Science Learning at the Youth BIOlab
9:30 a.m. – 11:30 a.m.
Steve Jones & Meghan Kynoch, Youth BIOlab-St. Boniface Hospital Albrechtsen Research Centre
Level: 8-12
Location: Youth BIOlab - St. Boniface Hospital Albrechtsen Research Centre, 351 Tache Ave, Room RL016
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 at St.Boniface Hospital Research, a unique teaching lab for grade 5-12 students, as we share our model for connecting health science and current medical research to classroom curricula through experiential learning activities that you can incorporate into your units on health, cells, and body systems. Learn about cardiovascular research at St. B as we guide a pig heart dissection and see live heart cells in the lab. www.youthbiolab.ca
sjones@sbrc.ca

Feeding the World 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; Registration @ 8:30 a.m.
Join us for a day of activities related to a question that Canada is poised to have a huge impact on - "how will we feed an estimated 10 billion people by the year 2050"? Similar to STAM 2023 we hope to expand the impact and offer some additional options while reinforcing the best from last year's event. Appropriate for last year's participants looking for "more" or new folks wanting to explore food security options. Great connections to Grade 10 Science, Grade 10 Social Studies, Agriculture, Current Topics or Integrated Science Courses.
www.nutrientsforlife.ca info@nutrientsforlife.ca

Manitoba Envirothon Engaging Youth in Environmental Science 9:00 a.m. – 3:30 p.m.
Kathryn Gibb, Manitoba Association of Watersheds
kathryn@manitobawatersheds.org
Level: 9-12
Location: Fort Whyte Alive, Climate Lab
The Manitoba Envirothon is a STEM-based environmental education competition for grades 9-12 from across Manitoba, designed to encourage team work, problem-solving skills, and public speaking skills while fostering an appreciation for current environmental issues. Envirothon combines the exhilaration of team competition, the challenge of learning about environmental issues, and the experience of using this knowledge in hands-on activities. This approach to environmental education helps students develop skills necessary to address environmental issues, such as collaboration, critical thinking, and public debate. Schools or clubs enter teams of 5 that will then study provided resource materials about five key disciplines: Aquatic Ecology, Wildlife Ecology, Plant Ecology, Soils & Geology, and a rotating theme. Teams then attend a one-day regional event with an outdoor field test and oral presentation, in order to qualify for Provincials. Provincials take place over 3 days at the end of May where top teams compete for a qualifying spot at the International NCF Envirothon Competition. This session will give teachers the chance to learn about this engaging program and participate in a mini-Envirothon off site at Fort Whyte Alive. Please dress for the weather, as some activities will be outside. Please bring a bag lunch. Snacks and coffee will be provided.

Friday October 25th 2024 VIRTUAL SESSIONS

The following sessions take place virtually. Virtual links will be provided to attendees.

Virtual Session 10:30 a.m. -11:30 p.m.

Welcome to Let's Talk Science

Tamara Smith, Let's Talk Science

Level General *Repeated Session*

Join us for this information session with Let's Talk Science! Explore some fun, free, low-prep, and easy-to-implement K-12 STEM programming and resources for your classrooms. Discover events for students, National STEM Projects, career and competition opportunities, and curriculum-aligned resources that are readily accessible on our website. Learn about our professional learning micro-credentialling program, Learning Pathways, where educators of all levels can participate in a professional learning journey that builds towards certification in STEM-based concepts. 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

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

Hands-on STEM Enrichment from Scientists in School

Michelle Butler, Scientists in School

Level: K-8 (maximum 25 participants)

Scientists in School is an experiential STEM education charity offering English and French curriculum-aligned hands-on science workshops to elementary schools. Each 1-hour workshop session is led by a live, interactive, STEM-expert presenter, and hands-on materials for each student are sent ahead so that everyone is actively engaged in discovery. Since 1989, they have engaged 11 million young scientists. In this session, we will discuss the importance of experiential learning and the positive outcomes our programs have for youth, especially girls, in terms of increased interest and confidence in STEM. Most of this 1-hour session will be a hands-on demo workshop, with participants are invited to role-play as students and personally experience a Scientists in School workshop. https://scientistsinschool.ca

Virtual Session 11:30 a.m.-12:30 p.m.

Manitoba's Sea Bear

Kayla McCurry, Polar Bears International

kmccurry@pbears.org

Level: General

From cub to parent, the polar bear lives an extraordinary life that's uniquely adapted to Arctic sea ice. Polar Bears International hosts free webcasts, teaching and learning materials, and fun activities for classrooms, so you and your students can follow your curiosity and be inspired to make a difference. Joins us for a session about Manitoba's charismatic bear, the important science and innovations that go into understanding their ecology, and the myriad offerings available to you as an educator! www.polarbearsinternational.org

Virtual Session 1:00 p.m.-1:45 p.m.

Decoding AI: Helping Students Look Beyond

Dr. Anju Bajaj, Let's Talk Science

Level: General *Repeated Session*

Support students in making smart choices about using technologies driven by artificial intelligence (AI). This Let's Talk Science session will also show you how AI can be used in math, making learning more contextual. You will also learn how to use AI responsibly, encouraging critical thinking and helping students become responsible digital citizens in a world where AI is everywhere.

Virtual Session 2:30 p.m.-3:30 p.m.

Welcome to Let's Talk Science

Tamara Smith, Let's Talk Science

Level: General *Repeated Session*

Join us for this information session with Let's Talk Science! Explore some fun, free, low-prep, and easy-to-implement K-12 STEM programming and resources for your classrooms. Discover events for students, National STEM Projects, career and competition opportunities, and curriculum-aligned resources that are readily accessible on our website. Learn about our professional learning micro-credentialling program, Learning Pathways, where educators of all levels can participate in a professional learning journey that builds towards certification in STEM-based concepts. 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

Virtual Session 12:45-1:30 p.m. TIME CHANGE

Systems Thinking for Climate Action: Interactive Online Workshop

Janice Williams Pinnacle Educational Services | EnROADS Climate Ambassador

Level: 9-12 ZOOM Link will be provided (maximum 50 participants)

Empower students to understand and address climate change through systems thinking and computational modelling. Participants in the workshop will explore the EnROADS global climate simulator, cultivating systems thinking habits of mind. They will engage in scientifically rigorous climate dialogue, test various policies, and assess their impacts in real-time. This session is suitable for high school educators, but open to all passionate about fostering meaningful change. Gain innovative tools to navigate complex challenges beyond the classroom and equip the next generation of problem-solvers. This workshop will empower you with practical skills and knowledge to foster systems thinking in your students, preparing them to tackle real-world issues with confidence and creativity. TECH CONSIDERATIONS: N.B. You will need access to a desk or laptop computer. The EnROADS simulator does not run on smart or handheld devices.

EnROADS Climate Solutions Simulator: https://www.climateinteractive.org/en-roads/

Virtual Session 3:00 p.m.-3:45 p.m.

Decoding AI: Helping Students Look Beyond

Dr. Anju Bajaj, Let's Talk Science

Level: General *Repeated Session*

Support students in making smart choices about using technologies driven by artificial intelligence (AI). This Let's Talk Science session will also show you how AI can be used in math, making learning more contextual. You will also learn how to use AI responsibly, encouraging critical thinking and helping students become responsible digital citizens in a world where AI is everywhere.

Friday October 25
2024 GARDEN CITY COLLEGIATE SESSIONS

The following sessions take place at Garden City Collegiate.

Friday All Day Sessions 10:30 a.m.-3:30 p.m.

Hands-on, Minds-on
Science Activities
Gabrielle David, Let's Talk Science
Level: General
Let's Talk Science is a National non-profit organization that delivers free science activities and workshops to K-12 classrooms throughout Manitoba, including within rural schools. Learn more about how you can implement their outreaches into your class curriculum.

Project Learning Tree
(PLT) Training
Jenna Forslund, Project Learning Tree Canada
Level: 5-8 (maximum 12 participants)
Project Learning Tree Canada (PLT Canada) is committed to advancing environmental education, forest literacy, and green career pathways, using trees and forests as windows on the world. PLT Canada's new Explore Your Environment: K-8 Activity Guide includes 50 hands-on, multidisciplinary activities to connect children to nature and increase young people's awareness of and knowledge about their environment. Ready- to-use activities integrate teaching about nature into a multitude of subjects using hands-on experiences and outdoor field investigations. By attending this workshop you will engage with a growing national network of educators in Canada, receive a copy of the Explore Your Environment: K-8 Activity Guide, and help to create future forest, conservation and education leaders.

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

Project WET
Water Education for Teachers
Emily Davidson, Oak Hammock Marsh
Level: K-6 e_davidson@ducks.ca
This activity book is filled with activities, experiments, and games that will keep your students engaged while covering your science curriculum outcomes.

Counter-Storytelling: Turning Toward an Anti-Racist Science Pedagogy
Peiki Loay, Clearspring Middle School, HSD
Level: K-8
In this session, we will explore anti-racist science pedagogy with a focus on how counter-stories can be mobilized in your science classroom. Come unpack and grow your science lens(es) in a supportive space while participating in inquiry experiences. We will also spend time exploring resources and engaging in some preliminary planning relevant to your own personal teaching context. What to bring: electronic device for accessing any digital materials, resources you love and might want to share with others, and an open heart (because engaging in anti-racist pedagogy is heart-work indeed). Other notes: Specific resources may skew grades K-8, but anti-racism is for everyone. High school teachers are welcome too!

K-10 Arctic Science Make & Take

Jacqueline Monteith, Frontier School Division

Level: K-10

Approaching K-10 Science concepts with a northern perspective is fun and inspiring to both students and teachers. This session will provide K-10 teachers with exciting hands-on activities to use in the classroom immediately. Activities will span all grade levels and will help students explore multiple Science strands.

Manitoba Envirothon -
Engaging Youth in Environmental Science

Kathryn Gibb, Manitoba Association of Watersheds
kathryn@manitobawatersheds.org

Level: 9-12 *Repeated Session*

The Manitoba Envirothon is a STEM-based environmental education competition for grades 9 - 12 from across Manitoba, designed to encourage team work, problem-solving skills, and public speaking skills while fostering an appreciation for current environmental issues. Envirothon combines the exhilaration of team competition, the challenge of learning about environmental issues, and the experience of using this knowledge in hands-on activities. This approach to environmental education helps students develop skills necessary to address environmental issues, such as collaboration, critical thinking, and public debate. Schools or clubs enter teams of 5 that will then study provided resource materials about five key disciplines: Aquatic Ecology, Wildlife Ecology, Plant Ecology, Soils & Geology, and a rotating theme. Teams then attend a one-day regional event with an outdoor field test and oral presentation, in order to qualify for Provincials. Provincials take place over 3 days at the end of May where top teams compete for a qualifying spot at the International NCF Envirothon Competition. This session will give teachers the chance to learn about this engaging program and participate in a mini-Envirothon.
https://manitobawatersheds.org/about

https://static1.squarespace.com/static/5d1970615efdf4000145bc48/t/65b2aacadfccf5039e4cfb1a/1706207961790/MB+Envirothon+Advisor%27s+Guide+%281%29.pdf

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

SEL and KBI: Drivers of Innovation in the New Pilot Science Curriculum
Gigi Fallorin, Ed.D., Teacher, Hugh John Macdonald School, Winnipeg School Division
KBI National Teacher Advisory Group
Level: General
SEL or SocIal Emotional Learning drives all successful learners. The 21st century learning skills on collaboration, communication, critical thinking, and creativity, often referred to as the 4 Cs of SEL serve as main anchors now in the delivery of the Middle Years program at Hugh John Macdonald School, effective this new school year 2024-2025. This is also reflective of the six global competencies (critical thinking, communication, citizenship, connection to self, creativity, and collaboration) that we can see in most curriculum pilot programs across various subject disciplines, including science. The idea of having TAGs or Teacher Advisory Groups is an innovative approach to education in general and science in particular. With focused time to be with our students at the start of the day, we are intentionally building on getting to know and understand them better as learners. One might ask- how can KBI or Kids Boost Immunity complement SEL and have both as drivers of innovation in science education? At HJM, it means having a trusted science learning partner like KBI who shares our passion for science learning that engages and promotes the 4Cs and the global competencies.

Firstly, the session will focus on getting to know the KBI platform, how to register for a class, and explore the various modules or lessons that can be accessed. Secondly, the case of HJM's experience with KBI will be shared as it explores SEL and its connectedness with the five dimensions of the new pilot science curriculum on • Indigenous People within the Natural World • Science Identity • Scientific Knowledge • Practical Science • Nature of Science

Science Safety in the Classroom
Jason Braun, Manitoba Education and Early Childhood Learning, Jason.braun@gov.mb.ca
Level: General *Repeated Session*
Manitoba Education is planning on renewing the Science and Safety publication and seeking feedback from educators. This session will provide a forum to discuss science safety in schools.

The Nature of Science – Perimeter Institute
Andrea Misner, Seven Oaks School Division
Level: 9-12 *Repeated Session*
Thinking of doing a science project with your students? Not sure where to start on building students' skills for investigating science? Or just looking for some interesting activities to include at the start an any science unit? Join us for some interactive activities from the Perimeter Institute on the nature of science!

Caring for Our Watersheds- Ideas into Solutions
Kandra Forbes, Ducks Unlimited - Oak Hammock Marsh
Level: 9-12 *Repeated Session*
Caring for Our Watersheds is a contest for Grade 7-12 students where they answer the question: "What can you do to improve your watershed?". Students must research their local watershed, identify an environmental concern and draft a written proposal containing one realistic solution, while connecting to Sustainable Development Goals. The top ten ideas have a chance to win up to $1,000, with a matching prize for the school. Students are encouraged to implement their ideas and there is funding available. This program is Monday morning ready and fits into STEM curriculum. The program is offered at no cost, that's right - FREE. Classroom presentations start booking in September. Deadline for proposals is in March.
https://caringforourwatersheds.com/
cfow@ducks.ca

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

K-10 Science Draft Curriculum
Jason Braun, Manitoba Education and Early Childhood Learning jason.braun@gov.mb.ca
Level: K-10 *Repeated Session*
This session will provide a status update on the draft curriculum including the structure and outcome categories.

Why You Should Encourage Scientific Inquiry Through Science Projects and Fairs
Lucy Rocha St Lawrence, MSSS Executive Director
Level: 3-12 *Repeated Session*
This learning session is for every teacher who wishes to instill a passion for scientific inquiry and curiosity in their class. Every year, the Manitoba Schools Science Symposium provides the venue to showcase future researchers and innovators from grades 4-12. This program is open to all students in Manitoba. From there, the best grades 7-12 projects are selected to represent the MSSS at the Canada-Wide Science Fair. But how do you get there? This session will provide some tips on how to get started and what you will need to run a successful fair, from as small as the classroom setting to a school-wide fair. Resources and tips and information on how your role will evolve throughout the process will be shared. A teaching package will be available for the teacher participant to help get your class engaged and inspired to pursue their passion for research and innovation. Information about the Manitoba Schools Science Symposium will be presented, including up-and-coming teacher programming/ professional development at the 2025 MSSS.

Caring for Our Watersheds- Ideas into Solutions
Kandra Forbes, Ducks Unlimited - Oak Hammock Marsh
Level: 9-12 *Repeated Session*
Caring for Our Watersheds is a contest for Grade 7-12 students where they answer the question: "What can you do to improve your watershed?". Students must research their local watershed, identify an environmental concern and draft a written proposal containing one realistic solution, while connecting to Sustainable Development Goals. The top ten ideas have a chance to win up to $1,000, with a matching prize for the school. Students are encouraged to implement their ideas and there is funding available. This program is Monday morning ready and fits into STEM curriculum. The program is offered at no cost, that's right - FREE. Classroom presentations start booking in September. Deadline for proposals is in March.
https://caringforourwatersheds.com/
cfow@ducks.ca

The Nature of Science – Perimeter Institute
Andrea Misner, Seven Oaks School Division
Level 9-12 *Repeated Session*
Thinking of doing a science project with your students? Not sure where to start on building students' skills for investigating science? Or just looking for some interesting activities to include at the start an any science unit? Join us for some interactive activities from the Perimeter Institute on the nature of science!

Physics Escape Room
Daniel Colonval, MAPT & Fort Richmond Collegiate, dcolonval@pembinatrails.ca
Level: 9-12
Escape boxes are a great way to engage kids in reviewing material. This interactive session will share how to use them in high school physics, demonstrate examples of ones that have been used in the classroom, and provide some tips if you are interested in creating your own.

Cancelled

Utilizing Building Thinking Classrooms
Quinn Derksen, Red River College Polytechnic
Level: 9-12
As a Math and Science Instructor at Red River College Polytechnic, Quinn has incorporated Peter Liljedahl's "Building Thinking Classrooms" (BTC) strategies into the Math and Science Classroom. A wide range of students from Indigenous and International backgrounds make up these math and science classes and often form the majority of the students in each class. These BTC strategies have been implemented to improve student engagement within the classroom, problem-solving skills, and maximize student success on assessments. While the 14 BTC practices will be referenced during the presentation, relevant BTC classroom strategies incorporated will be discussed more extensively during this presentation. These strategies will include innovative note-taking procedures; effective and collaborative-based assessment; and minimizing forward-facing instruction in favour of collaborative learning that encourages students to practice problem-solving effectively rather than extensively.

Friday Afternoon Sessions 1:30-3:30 p.m.

Project WET
Water Education for Teachers
Emily Davidson, Oak Hammock Marsh
Level: 8-12 e_davidson@ducks.ca
This activity book is filled with activities, experiments, and games that will keep your students engaged while covering your science curriculum outcomes.

Manitoba Envirothon - Engaging Youth in Environmental Science
Kathryn Gibb, Manitoba Association of Watersheds
kathryn@manitobawatersheds.org
Level: 9-12 *Repeated Session*
The Manitoba Envirothon is a STEM-based environmental education competition for grades 9 - 12 from across Manitoba, designed to encourage team work, problem-solving skills, and public speaking skills while fostering an appreciation for current environmental issues. Envirothon combines the exhilaration of team competition, the challenge of learning about environmental issues, and the experience of using this knowledge in hands-on activities. This approach to environmental education helps students develop skills necessary to address environmental issues, such as collaboration, critical thinking, and public debate. Schools or clubs enter teams of 5 that will then study provided resource materials about five key disciplines: Aquatic Ecology, Wildlife Ecology, Plant Ecology, Soils & Geology, and a rotating theme. Teams then attend a one-day regional event with an outdoor field test and oral presentation, in order to qualify for Provincials. Provincials take place over 3 days at the end of May where top teams compete for a qualifying spot at the International NCF Envirothon Competition. This session will give teachers the chance to learn about this engaging program and participate in a mini-Envirothon.
https://manitobawatersheds.org/about
https://static1.squarespace.com/static/5d1970615efdf4000145bc48/t/65b2aacadfccf5039e4cfb1a/1706207961790/MB+Envirothon+Advisor%27s+Guide+%281%29.pdf

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

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 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 in the school or at home.

Sustainable Development Goals and Design Thinking: Design a Seed Saver
Jennifer Tessier, Let's Talk Science
Level: K-6
Bring real-world issues to the classroom using Design Thinking to solve food security problems highlighted by the UN Sustainable Development Goals. During this Let's Talk Science session, you will discover how students can design seed savers from simple materials to protect seeds for future use.

K-10 Science Draft Curriculum
Jason Braun, Manitoba Education and Early Childhood Learning jason.braun@gov.mb.ca
Level: K-10 *Repeated Session*
This session will provide a status update on the draft curriculum including the structure and outcome categories.

Extracurricular Science
Jen Piasecki, MAPT & Fort Richmond Collegiate, jpiasecki@pembinatrails.ca
Level: 9-12
Encouraging student involvement through science experiences (science fairs, citizen science, international experiences, university involvement and outside organizations). This session will share many of the opportunities available for middle school and senior high school science students. There will also be some time dedicated to sharing ideas from participants.

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

Science Safety in the Classroom
Jason Braun, Manitoba Education and Early Childhood Learning
Jason.braun@gov.mb.ca
Level: General *Repeated Session*
Manitoba Education is planning on renewing the Science and Safety publication and seeking feedback from educators. This session will provide a forum to discuss science safety in schools.

Why You Should Encourage Scientific Inquiry Through Science Projects and Fairs
Lucy Rocha St Lawrence, MSSS Executive Director
Level: 3-12 *Repeated Session*
This learning session is for every teacher who wishes to instill a passion for scientific inquiry and curiosity in their class. Every year, the Manitoba Schools Science Symposium provides the venue to showcase future researchers and innovators from grades 4-12. This program is open to all students in Manitoba. From there, the best grades 7-12 projects are selected to represent the MSSS at the Canada-Wide Science Fair. But how do you get there? This session will provide some tips on how to get started and what you will need to run a successful fair, from as small as the classroom setting to a school-wide fair. Resources and tips and information on how your role will evolve throughout the process will be shared. A teaching package will be available for the teacher participant to help get your class engaged and inspired to pursue their passion for research and innovation. Information about the Manitoba Schools Science Symposium will be presented, including up-and-coming teacher programming/ professional development at the 2025 MSSS.

Physics Teachers' Favourites
Trevor Friesen-Stoesz, MAPT & WC Miller Collegiate, StoeszT@blsd.ca
Level: 9-12
This session focuses on demos and equipment used to demonstrate a variety of topics and phenomenon. Some demos have roots in chemistry topics as well. A listing of equipment and links will be available.

Improving Science Education: It's Not Rocket Science: It's Harder!
Brian Dentry, STAM & Perimeter Institute for Theoretical Physics
Level: K-12
How can STAM support teachers and students in science education? Education is more than the delivery of content. It's learning how to learn and how to think. When we learn how to learn and we learn how to think, that's something that serves us, not only in the classroom but in everyday life. During this session, we will look at STAM supporting science education, plus:

- Educational resources from the Perimeter Institute for Theoretical Physics
- How do we know what we know?
- The Learning Brain – Cognitive Development and Cognitive Neuroscience
- Changes in brain activity that occur during science class reasoning and activity, suggest that reasoning is modifiable by thoughtfully designed curriculum and pedagogy.
- The Unknown

REGISTRATION AND MEMBERSHIP INFORMATION

PLEASE READ CAREFULLY

Registration available online mbteach.org

STAM Membership 2024-2025 *(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 $25

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 ($25 Pre-ordered)
Caesar and cranberry apple salads
Roasted pork loin with apple sage sauce
Herb grilled chicken breast in tomato ragu
Herbed baby potatoes with butter and onions
Vegetable medley in lemon rosemary butter
Chickpea curry with rice (vegan/vegetarian)
Dinner rolls, drinks 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.

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