Based in the University of Alberta’s Faculty of Education, the Centre for Mathematics, Science and Technology Education (CMASTE) is a long-standing educational research and development centre that specializes in the synthesis of research, knowledge translation, and outreach.

Our membership includes educational researchers and teacher educators who work with educational stakeholders who collaborate in mathematics, science, and technology education. CMASTE serves educational communities locally, nationally, and internationally.
CMASTE's objectives include:

- initiation and facilitation of education-related research and development projects
- publication and translation of research findings in mathematics, science, and technology education
- creation and testing of research-based resources and services
- establishment and maintenance of a network of researchers, educators, and education partners

Our objectives align with the strategic goals of the University of Alberta as outlined in “For the Public Good”, the university’s institutional strategic plan for the coming decade.

Visit ua.berta.ca/strategic-plan to read the full document.

CMASTE’s objectives include:

- bringing together and coordinating personnel to ask and explore critical questions pertaining to mathematics, science, and technology education
- addressing the needs of diverse communities in the provision of science, mathematics, and technology education
- creating and sustaining a network of collaborative projects with educators and professionals in science, mathematics, and technology within the regional college/university system in Alberta and beyond
- providing a forum for the exchange of ideas with school boards, school administrators, college and university faculties, policy makers and government, business and industry leaders, members of the media, teachers, parents, and students
- providing consultative assistance for schools, government agencies, and not-for-profit organizations and undertaking collaborative research and development projects with people in these and other settings
- engaging in knowledge mobilization activities locally, nationally, and internationally
- publishing and disseminating academic and professional educational products
- seeking external financial resources to support research and development work and to fund CMASTE activities

The mission of CMASTE is to promote and encourage excellence in mathematics, science, and technology education in the province of Alberta, across Canada, and worldwide, by enhancing and encouraging the professional development of mathematics, science, and technology educators in the following ways:

- initiation and facilitation of education-related research and development projects
- publication and translation of research findings in mathematics, science, and technology education
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MISSION

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OBJECTIVES

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2016/17 PROJECTS & ACTIVITIES

SCANNING ELECTRON MICROSCOPE (SEM)

The Hitachi Scanning Electron Microscope is a joint project between the National Institute of Nanotechnology (NINT), Alberta Innovates – Technology Futures (AI), and CMASTE, funded by AI. One portable SEM is on loan from NINT and is being used from January 2016 to June 2017 in high school classrooms across the Edmonton area. The SEM is set up for at least one week at each school where students can work on independent research projects.

NORWAY ENERGY CAMP

On August 6 – 11, 2016 six Alberta science teachers and the Outreach Projects Manager facilitated the Norway Energy Camp. Two new groups of students and one returning group of students were guided through several activities each day that highlight different forms of energy and their use. This project was sponsored by Akershus County, Norway.

GLYCONET

Funded by NSERC and in partnership with the Canadian Glycomics Network (GlycoNet) this annual project involves four teachers from two different provinces who work in carbohydrate research labs with scientists, developing classroom resources for use by secondary school teachers. The resources are posted on the CMASTE website. This last year University of Alberta created 8 teacher resources and Université Laval created 8 teacher resources. The resources are posted on the CMASTE website.

LET’S TALK SCIENCE

CMASTE has been funded by Let’s Talk Science to support their evaluation of the ‘Model Schools’ project. This includes conducting a literature review; developing an evaluation framework, methodologies, and instruments; and conducting case studies of selected sites to measure impacts of the project and better understand different features of the school models.

CONSULTANCY WITH EDMONTON PUBLIC SCHOOLS

The math education group of CMASTE has been working with Edmonton Public Schools to create reference materials about numeracy and for interventions that can be used by teachers and parents.

MATH ACADEMY

The math academies professional development workshop series for K-12 teachers has continued into its second year sponsored by the St. Albert Public School District.

INDIGENOUS TEACHING GARDEN

The Indigenous teaching and learning gardens were conceived in 2011. They are a site for learning from the land and engaging with Indigenous perspectives in the teaching and learning of K-12 subject matter, with a specific focus on mathematics and the sciences.

CMASTE GRANTS

CMASTE has made four types of funding available through small grants for its members. The four types include faculty member projects, graduate student/postdoctoral projects, graduate student/postdoctoral travel, or term contract sessional projects. To date, two faculty member projects have been funded; (1) Integrating Scientific and Mathematical Reasoning in Elementary School - Dr. Mijung Kim and Dr. Janelle McFeeters, (2) Telus World of Science Collaborative Research Project - Dr. Jerine Pegg and Dr. Cheryl Poth, (3) Pre-service Science Teachers’ Personal Metacognitive Knowledge - Dr. Greg Thomas.

OUTREACH ACTIVITIES

- Mathematics Council Alberta Teachers’ Association Conference Booth
- Alberta Teachers’ Association Science Council Conference Booth
- CMASTE Panel Discussion: Is students performance in mathematics declining?
- WISEST-Women in Scholarship, Engineering, Science and Technology) Teacher Day Presentation
- Professional Development for Mathematics Teachers
- CMASTE Seminar Series
- Inservice presentation at Edmonton and Calgary Teacher’s Conventions
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FIND OUT MORE

Visit cmaste.ualberta.ca for more information about our teacher resources, projects, members and affiliates, and more.

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