

Centres for Research in Youth, Science Teaching and Learning – the NSERC CRYSTAL Pilot Program

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“To remain among the world’s most innovative nations, Canadians must build a better foundation of understanding and appreciation of science and math among young people and attract them to science and engineering careers”

– Lucienne Robillard 2004

The NSERC CRYSTAL program is a five year (2005-2010), university based, pilot program to conduct research on the teaching and learning of science and mathematics (K-12), and to increase our understanding of the best ways to enrich the preparation of young Canadians in these foundation subjects. Increased understanding of the skills and resources, including teacher training, development of teaching tools and approaches, and outreach programs, needed to meet these objectives are a major part of the research agenda.

The NSERC program funds five centres across Canada; CRYSTAL Atlantique (University of New Brunswick), Centre de recherche sur l’enseignement et l’apprentissage des sciences (University of Sherbrooke), CRYSTAL Manitoba (University of Manitoba), CRYSTAL Alberta (The University of Alberta), and Pacific CRYSTAL (University of Victoria). The goals of these research centres are diverse, but all aim to bring together the many partners that share an interest in enhancing the science preparation of our students, including teachers, school boards, ministries of education, community educators and leaders, scientists, and science education researchers.

- CRYSTAL Atlantique (www.crystalatlantique.ca) theme is to understand and promote the culture of science, mathematics and technology across the Atlantic Provinces, through informal learning contexts such as clubs, museums and science centres and everyday experience.
- CREAS Quebec (www.educ.usherbrooke.ca/recherches/creas/indexang.html) seeks to enhance the competencies

of natural sciences, technology and mathematics (STM) secondary school teachers, through training and research activities such as analysis of teaching practices and design of development activities.

- CRYSTAL Manitoba (www.umanitoba.ca/outreach/crystal) is researching the ‘risk factors’ and ‘protective factors’ associated with student success in the sciences, and how to increase resiliency by implementing and monitoring new and existing interventions.
- CRYSTAL Alberta, (<http://www.uofaweb.ualberta.ca/ed/policystudies/crystalalberta.cfm>), which also coordinates the project nationally, conducts research and provides guidance to teachers, curriculum developers, publishers and outreach providers, to heighten students’ interest in and engagement with science and mathematics.
- CRYSTAL Pacific (<http://www.educ.uvic.ca/pacific-crystal/main.html>) is studying the impact on science interest and literacy, of a range of informal and authentic science experiences for students and teachers, such as SeaQuaria and SeaChange (offered by community partners), internships in science labs, as well as enhanced classroom programs. Integration of successful science experiences into the regular classroom programs will be carried out through Lighthouse Schools, with teachers providing leadership for development and implementation.

The CRYSTAL program was designed to cover all of the sciences, mathematics and computer science, and Earth scientists are involved with several Centres across the country, e.g. Toon Pronk CRYSTAL Atlantique, John Murray CRYSTAL Manitoba, and Eileen Van der Flier-Keller Co-director Pacific CRYSTAL.

It is not too late to become involved. If you are interested, contact any of the CRYSTALS, and keep an eye out for results from these programs. **R**

Have you moved?

Do you know someone
who has moved?

Let us know



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