

Ontario Centres of Excellence and the Centre for Excellence in Mining Innovation

are working with Mining sector and NSERC to fund **\$2 million** in university and industry based, transformative R&D in

Productivity, Energy, Water and Waste

as it relates to

Ontario's Mining Industry and its Value Chain



Be part of projects that will help transform the mining sector. We encourage companies and researchers in non-mining sectors to participate in the initiative and bring cross-sector expertise and ideas to the table. Most funding will flow to universities; some can flow to participating companies and/or colleges.

Steps and Timelines

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- Jun 4, 2012** Save-the-date email and Call for Expressions of Interest (EOI) information on OCE's website. To submit an EOI, connect with an OCE Business Development Manager:
<http://www.oce-ontario.org/contact-us/business-development-contacts>
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- Jun 28, 2012** One-day Partnership Forum at the Royal York in Toronto to learn more about the needs of the mining sector and to network with potential academic and industry project collaborators and OCE, CEMI and NSERC staff. Please follow the link to apply to the Forum. <http://miningpartnershipforum2012.eventbrite.com/>
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- Jul 27, 2012** EOIs submitted to OCE-CEMI through OCE's online system. The EOI/Proposal title must start with "CEMI-12:....". The top ranked EOIs will be invited to write full proposals through NSERC's Collaborative Research & Development (CRD) process. [High quality EOIs not selected for this initiative may be redirected for consideration by OCE, CEMI or NSERC individually]. Application documents can be viewed at:
<http://oce.smartsimple.ca/files/156198/98279/CEMI-12?name> and
http://www.nserc-crsng.gc.ca/Professors-Professeurs/RPP-PP/CRD-RDC_RDC_eng.asp
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- Sept 7, 2012** First Draft due to NSERC CRD Program
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- Oct 5, 2012** Full Proposals due to NSERC CRD Program
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- TBD** Awards notification
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Company Outcomes

- Participating Companies will have full access to the researchers, the graduates and the results of the R&D projects.
- Any IP generated by academia will be offered to participating companies according to a predetermined research agreement.
- Companies can expect to exploit research results for their own and/or their supply chain's commercial advantage.

OCE, CEMI and NSERC have an enviable record of helping generate new knowledge, new ideas, highly qualified innovative graduates and transformative technologies for Canadian companies. If your company wants to be a part of one of Canada's fastest growing sectors, ensure a senior member of your management team participates in this initiative.

Focus Areas

Research projects will be in the area of Advanced Manufacturing with a demonstrated immediate upstream or downstream benefit to the Mineral industry, leading to novel, newly adapted or adopted processes, products, or services. The following topics will receive highest consideration:

Transformative Productivity Improvements for the Mining and Related Sectors

Productivity is a measure of the efficiency of production. Productivity is a ratio of production (output) to what is required to produce it (inputs). Input is the cost of labor, capital, materials, energy, and purchased services, etc. Output is expressed as value added, which is the value of sales minus the cost of inputs. Factors that *lead* to improved productivity are deemed acceptable in our definition e.g. improvements to quality, flexibility, environmental footprint, production speed/capacity, logistics, management behaviour, space utilization, capital/asset management, etc.). Transformative means that there must be a **big idea** that is **novel** and has **wide reaching applicability** across Ontario's Mining/Manufacturing industry.

Management of Water for the Mining and Related Sectors

Research related to accessibility and transport of water used within the mining cycle; creation, use, re-use and recycling; optimization and consumption decrease in physical processes; water alternatives; issues or opportunities presented by water temperature; challenges related to geography (e.g. mines in remote areas, extreme temperatures, etc.)

Management of Energy for the Mining and Related Sectors

Energy optimization; energy generation, capture and transformation; energy alternatives - within any point in the mining cycle or in activities undertaken by the supply and service sector.

Waste Management for the Mining and Related Sectors

Waste is broadly defined and includes waste rock, tailings, and organic waste. Examples include process or product improvements to reduce waste, more economical waste transport logistics within a mine site; commoditizing or repurposing waste, decreasing the cost and efforts towards waste maintenance, waste storage.

Proposal Expectations

Proposals must succinctly describe the specific challenge or opportunity and the big idea that is proposed that will address it. The metric/s that quantify the *before* and *after* state should be described with an estimated % improvement. The transformative idea may be a product, tool, process, methodology, business model or philosophy.

Co-funding Ontario-based companies (industrial research partners) must be proposed at the EOI stage and confirmed by the full proposal submission deadline. OCE-CEMI staff will be available to help broker industry-academic partnerships for EOIs that are selected to move forward to the full proposal stage. NSERC staff will review and advise on drafts of full proposals.

The **Commercialization Strategy** of the transformative productivity improvement will need to be *best-estimated* at the EOI stage (who, how, how long and at what cost). Ideally, the industry partner/s will lead the write up of this section.

Preference will be given to EOIs that:

- Demonstrate tight industry-academic collaboration
- Have broad industry applicability and impact (economically and/or environmentally and/or socially)
 - Are straightforward and low cost to implement
- Demonstrate a good ROI for OCE-CEMI-NSERC (e.g. a proposal that delivers high impact for the research dollar)

Funding Limits and Matching

Applicants are eligible to apply for up to \$400,000 per project. A project that maximizes government investment may be funded as follows: Industry cash \$80K (minimum) + OCE \$80K + CEMI \$80K + NSERC \$160K = Total Project Cash Value of \$400K + \$80K industry in kind. University overhead policies apply.

	Total incl. O/H	Eligible Fund Destination (\$ 1000's)		
		Companies, Colleges, Not-for-profit Organisations	Ontario Universities	Rest of Canada Universities
Industry Cash (minimum)	\$ 80	NA	\$ 40 (minimum 50%)	\$40 (remaining \$)
OCE	\$ 80	NA	\$ 80	NA
CEMI	\$ 80		\$ 80	
NSERC*	\$ 160	NA		\$ 160
Total	\$ 400			
Industry in-kind (minimum)	\$ 80		\$ 80	

*Contributions must comply with NSERC CRD Program requirements

http://www.nserc-crsng.gc.ca/Professors-Professeurs/RPP-PP/CRD-RDC_eng.asp

Eligibility

Eligible Applicants: To be eligible as an applicant or co-applicant, you must hold or have a firm offer of an academic appointment at an NSERC-eligible Canadian university at the time of application. The appointment can be a tenured, tenure-track or lifetime professor emeritus position; or a term or contract position of no less than three years. Full-time adjunct professors at an accredited university may be considered on a case-by-case basis. Colleges and not-for-profit research organizations may participate as co-investigators

Eligible activities include: Experimental design, lab testing, pilot projects, in-situ experiments and data collection, workshops and meetings, cross-disciplinary exploratory meetings, HQP development, intellectual property development.

Eligible uses of funds include: Salaries and benefits not paid by public institutions, including, but not limited to students (undergraduate and graduate), post-doctoral fellows, technicians, technologists, subcontracts, equipment, materials and supplies, travel, project management. Principle investigators are not supported by this grant.

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