

## **Possible Collaboration Opportunities between the Chinese SINOPROBE II and Canadian EON-ROSE Research Initiatives.**

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With the launch of the SINOPROBE II research initiative and the installation of the first station for EON-ROSE, there are excellent opportunities for collaboration; which could expand on the previous collaboration between the Canadian LITHOPROBE (1984 to 2004) and SINOPROBE I communities. Perhaps a memorandum of understanding (mou) between the SINOPROBE and EON-ROSE communities could facilitate opportunities such as: i) faculty, staff and student exchanges (or short term postings at other institutes), and ii) collaboration to promote community engagement to benefit the citizens of both China and Canada.

The current world's population is projected to reach 8.5 billion by 2030. In order to sustain humanity, it is critical to work towards understanding entire Earth Systems through programs such as SINOPROBE II and EON-ROSE. Together, we could develop sustainable models for the use/production/conservation of geological materials, potable water, soil preservation and reducing carbon emissions.

A well informed general public is critical for the future – in order to make well informed policies for the materials required to support humanity. Community engagement is also important for the promotion of both SINOPROBE II and EON-ROSE. The US EarthScope (with IRIS) program has created excellent community engagement and outreach tools as highlighted on their websites (e.g. education, public, news room tabs on earthscope.org; education, earthquakes and teachable moments on iris.edu). This is one of the reasons why EarthScope was named the #1 epic science experiment of the decade by Popular Science in January 2011. The EarthScope and IRIS websites also reflect the significant communications advances since the LITHOPROBE days. The LITHOPROBE Secretariat did log 200 print media releases; which included articles in national magazines such as Canadian Geographic (Wood 1996, Clowes 2010), and the “Dancing elephants and floating continents” book (Wilson 2003), with the companion “Teachers companion material” (Heenan 2004) that targeted children in classrooms.

A “Community Science Liaison” (CSL) program is being developed for EON-ROSE – a program intended to insert place- and curriculum-based citizen science research programs into the K-16 education system across Canada using the data that will be produced by the future EON-ROSE Earth System monitoring stations. Such a citizen science approach was demonstrated by O'Connor and Shaw (2015, 2014) to be exceptionally successful at guiding students towards being environmental stewards across the Yukon Territories in northern Canada. Their grade 11 course not only created engaged students but also significantly improved high school graduation rates across the Yukon. It is hoped that such an approach will greatly increase high school graduation rates across the Canadian Indigenous communities, while recruiting these Indigenous students into the sciences for their future careers (an area that is terribly under-represented).

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