

International Opportunities for the National COSEE Network

The need for greater ocean education and outreach and increased ocean literacy do not stop at the shores of the United States. Several other countries have been introduced to the goals, strategies, and impacts of the U.S. National COSEE Network (NCN) and have expressed interest in replicating the network model. Individuals in China, Mexico, England, France, Canada, Norway, and Chile have made contact with individuals within the NCN and expressed interest in learning more about how to provide excellent ocean science education opportunities and broaden the impacts of ocean sciences research. Perhaps the most developed example is the establishment of COSEE China.

The idea for COSEE China was conceived when Xuchen Wang (Organic Geochemistry, UMassBoston) convinced Bob Chen (Organic Geochemistry, UMassBoston, then Co-PI of COSEE New England and currently PI of COSEE OCEAN) to travel to China for the first time. Five universities, 6 presentations, and 6 cities later, Chen was convinced that he (and other U.S. colleagues) had to be involved in research and education efforts, as progress in China was rapidly catching up and in some cases surpassing STEM efforts in the U.S. Another visit to China, subsequent discussions on both sides, and a proposal to NSF's International Planning Workshops program resulted in the first COSEE China Planning Workshop in March 2010.

Recruiting NCN participants for the workshop was easily accomplished. Given the excellent communication channels and mutual respect among Network PIs and participants, news of the COSEE China workshop and submission of applications occurred in a matter of weeks. This test suggests that the NCN can be mobilized rapidly for any number of ocean education initiatives. The composition of the 15 U.S. delegates was carefully crafted to include COSEE Center PIs with experience leading the COSEE Council as well as education experts, scientists, community college instructors, postdoctoral researchers, and graduate students from 8 of the 12 COSEE Centers. This diverse group was enthusiastic, knowledgeable, adventurous, and capable.

As the workshop neared, the original two Chinese universities were expanded to seven, and representatives from the U.S. National Science Foundation (NSF), the U.S. Beijing NSF office, the National Natural Science Foundation of China (NSFC), the State Oceanic Administration of China (SOA), and university administrators all elected to participate. With buy-in from both countries' federal agencies, the workshop was able to take a much more prominent role in the development of ocean education efforts in China.

Chen served as both the PI for the COSEE China Planning Workshop and the facilitator, a task that was well-received within the Chinese system. The workshop was a mix of formal introductions and endorsements as well as small group discussions from all perspectives. The success of the workshop was a product of the composition of the participating group, support of the NCN, the mutual respect of participants from both nations, a well-crafted agenda, masterful facilitation, strong logistical support provided by the Chinese side, and the good will of all involved.

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Two days after the initial 2-day COSEE China Workshop in Beijing, the SOA announced that it would support the initiation of COSEE China. The subsequent visits by the U.S. delegation to Xiamen and Qingdao solidified many personal ties, offered glimpses of the Chinese school system, continued development of COSEE China, and were a rich experience within a country of growing prominence in science and education for the U.S. delegates.

As a result of the week in Beijing, Lundie Spence, Director of COSEE Southeast, spearheaded a visit by Chinese ocean scientist Prof. Min Liu to the U.S. to visit six of the COSEE Centers, observe COSEE activities, gather ocean educational resources, and discuss collaborative possibilities with many COSEE participants across the U.S. Participating graduate students continue to stay in touch through social networking tools such as Facebook.

A second COSEE China Workshop was held in August, 2010 that included representatives from 11 Chinese universities. The main result was that the participants decided that COSEE China was a necessity. A common mission and vision and a strategic operating plan were developed. COSEE China objectives are 1) To enhance the professional level of ocean science research and develop models for training high-quality, innovative talent in ocean sciences based on the integration of ocean sciences research and education; 2) To increase the scientific and professional levels of ocean literacy based on the cooperation between ocean sciences researchers and educators; 3) To encourage the collaboration with COSEE USA and other international ocean science research and education institutions; 3) To provide an example of collaboration between ocean scientific research, higher education, and literacy initiatives.

A brief report on this international effort was presented by Chen at the May, 2010 COSEE Network meeting. The report was well-received, and there was enthusiastic response for COSEE China as well as other potential international COSEE Centers. A governance model was proposed, with Chen being the liaison between COSEE China and the National COSEE Office. This model will be discussed at a future COSEE Council meeting. In the meantime, Chen wrote a successful proposal to establish a new COSEE Center entitled COSEE Ocean Communities in Education and social Networks (COSEE OCEAN) which includes COSEE China as a broader impact of its work.

Overall, NSF's support for the COSEE China Workshop has shown great impacts, as evidenced by the initiation of COSEE China, the formation of two overlapping communities of individuals and their institutions in China and the U.S., and the reflections of the US delegates. This initiative has also provided a model for how the NCN can move forward to build other substantial international partnerships.

Emerging international partnerships moving forward include efforts in Mexico, Canada, and Portugal. NCN Executive Director Gail Scowcroft conducted the first ocean sciences workshop, focused on climate change and the role of the ocean, in Mexico in February 2011. The national office has also initiated discussions with the Canadian ocean observing initiative program to hold a joint workshop in late 2011. New Center COSEE

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Technology for Engineering and Knowledge has initiated discussions with scientists in Portugal. Individuals in these three countries have demonstrated commitment to furthering ocean science education efforts in their respective countries and forging bridges between ocean sciences and education enterprises.

COSEE's international activities demonstrate the Network's evolving maturity and its capacity for future growth. The investments made in the NCN have far reaching impacts on the dissemination of ocean sciences research and the ocean literacy of the global citizenry.

