

## CENTERS FOR OCEAN SCIENCES EDUCATION EXCELLENCE (COSEE) IMPLEMENTATION STEERING COMMITTEE REPORT

### OVERALL RECOMMENDATION:

The Steering Committee recommends that the Ocean Sciences Division of the National Science Foundation provide funding for a national network of Centers for Ocean Sciences Education Excellence (COSEE) and that two types of entities be established:

- ❶ Individual collaborative centers that will collectively create the COSEE network; and
- ❷ A Central Coordinating Office for the COSEE network.

The Division of Ocean Sciences should be prepared to make a long-term commitment over multiple funding cycles. Initial awards should be of significant duration, preferably five years, with an annual budget of up to \$500,000 for each COSEE entity. NSF should require annual progress reports with an in-depth review at the end of three years.

Initially, a minimum of three to four COSEE entities should be established (two to three Centers with a regional and/or programmatic function and one Central Office). From the outset, other Federal agencies and other potential funding sources should be identified and encouraged to participate and provide financial support so the network can improve and expand as quickly as possible to meet community needs.

Each Center should be a multi-dimensional partnership. A variety of organizations should be encouraged to participate including:

- Institutions of higher education;
- Research laboratories;
- Informal educational institutions such as aquaria or science centers;
- National professional associations or societies; and
- School districts or other recognized formal educational entities.

The Steering Committee envisions each Center consisting of partners from a minimum of three organizations with at least one research-focused partner and two different educational entities.

The Steering Committee's specific recommendations as to the guiding principles and highest priority tasks for COSEE are presented below, followed by a list of key attributes that should be incorporated into plans for all aspiring COSEE entities. The Steering Committee urges NSF to encourage all applicants to review the May 2000 *COSEE Workshop Report* before applying for funding.

### GUIDING PRINCIPLES AND PRIORITIES CONSIDERED ESSENTIAL BY THE STEERING COMMITTEE:

**VISION:** Citizens of all ages will have a scientifically grounded understanding and appreciation of the oceans and their relevance to everyday life.

**MISSION:** The mission of the Centers for Ocean Sciences Education Excellence (COSEE) is to significantly enhance ocean learning opportunities for all age levels (including adult and non-formal education) by incorporating the work of ocean science researchers into high-quality educational products and services, and providing opportunities for networking between oceanographic researchers and educators. The COSEE network will serve as a window to ideas, information, and resources that connect and celebrate ocean sciences teaching, learning and scientific discovery at all levels.

**GOALS:** The overarching goal is to increase and enhance collaboration and communications among ocean scientists, educators and the general public. **Specific objectives include:**

- Increased integration of research into high-quality educational materials and programs;
- Enhanced capacity to understand and deliver high-quality educational programs in the ocean sciences by pre-service and in-service teachers, informal educators, undergraduate faculty and educational institution administrators;
- Increased use of the creativity and expertise of science educators by the oceanographic research community;
- A deeper public understanding of the ocean and its influence on quality of life and prosperity on a global scale; and
- Improved access to information on ocean sciences research and educational opportunities by a diverse population.



Precollege students enjoying hands-on learning activities involving reptiles and their habitats in an informal education center.

#### CENTRAL COORDINATING OFFICE FUNCTIONS:

- ① **SERVE** as the COSEE network's advocate for Ocean Science Education Excellence via communications, marketing, public relations and promotion activities.
- ② **COORDINATE** with federal agencies and with national organizations with similar missions.
- ③ **ORGANIZE** an independent national oversight committee that will help shape the COSEE network.
- ④ **COORDINATE**, facilitate, and enhance collaboration among centers and others connected to the COSEE community.
- ⑤ **DOCUMENT** COSEE activities and outcomes through appropriate:
  - a) Data collection and record-keeping; and
  - b) Maintaining the COSEE users' list.
- ⑥ **BUILD**, coordinate and maintain the primary COSEE web site with access to an inventory of high quality (COSEE-approved) resources with a connection to DLESE. \*\*
- ⑦ **COORDINATE** services to the broader COSEE community.
- ⑧ **IMPLEMENT** fundraising and leveraging activities at the national level; conduct needs assessment for additional Centers and COSEE network activities; and advise the COSEE community about federal sources of funding.

- ⑨ **DEVELOP** evaluation paradigms and instruments, both formative and summative.
- ⑩ **ENCOURAGE** and promote diversity in all COSEE activities, and in ocean sciences and ocean sciences education careers.

\*\* The function of electronic coordination, i.e. web site design and management may be performed by either the Central Coordinating Office or an individual Center. Only one National web site should be established with each Center maintaining pages on and/or connections to that web site.

Although the Committee recognizes that institutions wishing to establish the COSEE Central Coordinating Office can be located outside of the Washington, D.C. area, the Steering Committee recommends such partnerships be required to demonstrate how they will provide a Washington, D.C. presence to fulfill coordinating, fundraising and leveraging responsibilities.

#### THE ROLE OF INDIVIDUAL CENTERS:

Each Center should be a multifaceted collaborative with the primary goal of improving the integration of ocean sciences education, outreach and research.

Although a Center may work to foster demonstration programs consistent with one or more of these approaches, its primary role should be catalytic, not programmatic. For example, COSEE funds might be used to organize workshops that provide opportunities for a two-way interchange of ideas, and expertise between scientists and educators.

A Center should implement several of the approaches listed below—preferably a majority of them, but not necessarily all of them. Planning documents should identify which approaches will be addressed during the initial year and in subsequent years.

## POSSIBLE APPROACHES FOR A CENTER:

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| <ul style="list-style-type: none"> <li>• Establish and/or expand linkages among those conducting ocean science research, education and outreach among diverse communities.</li> <li>• Facilitate the integration of research into high-quality educational materials.</li> <li>• Provide research-based pedagogical expertise and guidance for scientists involved in education.</li> <li>• Build, coordinate and maintain a COSEE site web page and/or the primary COSEE web site with access to an inventory of high-quality (COSEE-approved) resources with a connection to DLESE. (Note: This may also be a Central Office function).</li> <li>• Create long-term professional development opportunities and pathways for a variety of COSEE users.</li> </ul> | <ul style="list-style-type: none"> <li>• Provide incentives and assistance for school districts and teachers to integrate standards-based ocean sciences resources into their curricula.</li> <li>• Provide evaluation expertise and design instruments that can be used by the ocean sciences education community.</li> <li>• Emphasize increased diversity as a pervasive theme to ensure that historically underrepresented groups/communities in the ocean sciences have complete access to education and research results and activities.</li> <li>• Foster the effective use of information technology.</li> <li>• Establish internships and provide career information.</li> </ul> |
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## ALL COSEE PLANNING DOCUMENTS SHOULD INCLUDE:

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| <ul style="list-style-type: none"> <li>• A coherent and well-organized management plan and timeline.</li> <li>• An advisory board with representation from each of the following sectors (informal ocean sciences education, K-12 ocean sciences education, undergraduate ocean sciences education, teacher preparation and teacher enhancement/professional development, ocean sciences research, and information technology).</li> <li>• Proactive outreach to segments of the population that have historically been underrepresented as learners, teachers and researchers in ocean sciences.</li> <li>• Clearly defined roles for all collaborators/partners.</li> <li>• Commitment to serve or promote all education sectors and levels.</li> <li>• Capacity to function as a facilitator or catalyst of change.</li> </ul> | <ul style="list-style-type: none"> <li>• Capacity to understand and bridge research, media and education cultures.</li> <li>• Capacity to identify additional funding sources to promote the COSEE vision.</li> <li>• Demonstration of the resources and expertise to use evaluation paradigms for programs/products affiliated with all phases of COSEE.</li> </ul> <p>Budgets may include salaries for staff (at up to a 100% commitment). Relevant staff may include the principal investigator, administrative officer, research specialist, education specialist, and public affairs/media/marketing specialist. Participant support costs (travel and workshop per diem) should also be a significant portion of the budget.</p> |
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