

**Final Report  
COSEE.net  
February 2005 – August 2006**

During the reporting period the project addressed the broad objective of “connecting the COSEE network to the broader community of education providers, scientific professionals, community leaders and the public” (as the goal of COSEE.net was described in NSF Award # 0451110) and the following three more specific objectives supported by this grant. This report provides a brief overview of previously reported activity earlier in the grant period and a full report on work completion, results and impacts as of the close of the grant.

**Objective 1. Produce metadata including evolving XML definitions as appropriate.**

**Objective 2. Design common format/navigation scheme across the COSEE network for unified look, feel, and function.**

**Objective 3. Post portal and main network pages and sample COSEE documents for testing.**

***Overall approach:***

The Consortium for Oceanographic Research and Education (CORE) is the site of the Central Coordinating Office for the Centers for Ocean Sciences Education Excellence network primarily funded by the National Science Foundation. To foster well-coordinated and integrated communications and educational outreach (both within COSEE and to the ocean science education community in the Southeast region and beyond), CORE (and its subcontractor the Virginia Institute of Marine Science) expanded the previous limited www.cosee.net site into a portal structured to grow with the network, providing efficient access to network staff, activities and educational resources. Through activities supported by this grant, the portal has developed in to a nationally recognizable public interface integrated with the Digital Library for Earth System Education (DLESE), contributing resources to the National Science Digital Library (NSDL), and providing access to COSEE resources to a broad national audience of earth systems educators and scientists through DLESE, NSDL, the COSEE.net website and the Bridge. An important part of this effort was preparation of web template materials for the webpages maintained by the Centers, so that they will all have a unified look and feel and be able to present the COSEE-wide news and resources search capabilities that have been developed through this grant.

***Work completed:***

*Objective 1:*

Working with Kathryn Ginger, DLESE Metadata Architect, and John Weatherly, DLESE Computer Systems Engineer, VIMS staff has completed work on Objective 1. The basic metadata structure and programming for COSEE

resources and established protocols for information management is in place and functional. Metadata has been prepared for 85 on-line COSEE resources, and these are all searchable within the COSEE system. Metadata collected include:

- Resource title and URL
- Abstract
- Grade level
- Type of resource
- Subject
- Technical requirements
- Cost / Copyright
- Publisher

The process for entering a resource into the distribution system and delivering it to users is as follows:

To upload new COSEE resources to DLESE, we first verify that all resource URLs are correct and functioning. If any dead URLs are discovered, a search is conducted to find a replacement URL. If a functioning URL is not found, the resource is deaccessioned. Following the URL check, the metadata for any new resources are checked to make sure they comply fully with DLESE's strict guidelines. If the metadata do not adhere to DLESE's requirements, the resources will not be incorporated into the discovery system making them unavailable to COSEE.net, DLESE, and NSDL.

Once the metadata have been reviewed for proper format and coding, two queries are run to extract the COSEE resources into the appropriate collection. The first collection is DLESE-accessioned COSEE resources (currently 39 items). These are resources that the DLESE Accessioning Task Force approves as fitting the DLESE scope and includes in the COSEE collection on DLESE and NSDL, in addition to their availability through COSEE.net. Records that DLESE considers to be out of scope for their digital library are maintained in a separate collection which is also made available through the COSEE.net website. On COSEE.net, these two collections are handled together; therefore, the user sees no distinction between these two collections.

Once the resources have been extracted from the database into the proper collections, the metadata are exported as XML and are uploaded to DLESE. When the XML files are delivered, DLESE is alerted to any resources new to the collection. DLESE then reviews these resources to see if they meet DLESE's scope and metadata standards and, if they pass this review, they are added to the accessioned COSEE resources collection. Resources that DLESE does not accept for reasons of scope are maintained in the COSEE.net collection. Any metadata issues must be corrected before new resources can be added to the COSEE.net collection. The final step in this process is that DLESE accessioned resources become available through the discovery systems or search utilities on COSEE.net, DLESE, and NSDL (with accompanying display of the COSEE logo).

To enable local editing of search functions, the COSEE search utility resides on the Tethys server at VIMS, but the COSEE.net system is actually queried on the DLESE server. DLESE also processes COSEE metadata for discovery on the DLESE site as a unique collection and uploads metadata on all COSEE resources to NSDL. Search applications have been installed at the COSEE.net site and the COSEE Mid-Atlantic site. As part of the next phase of this project a search utility will be installed on all COSEE websites, network-wide, enabling visitors to search COSEE for both news and resources from anywhere in the network.

Objective 1 also included development of a COSEE-wide news and announcements system.

In April 2006, a COSEE Network news and events reporting system was created for COSEE.net. A database similar to the one for COSEE resources was created as well as an online form for COSEE Centers to upload their news and announcements to the database. In addition, COSEE personnel are able to access their news and announcements from the database using a login and password and edit the submission as necessary.

The three most recent news or announcement items are drawn from the database and displayed dynamically in the right-hand column on the COSEE.net homepage. The news title, description, pertinent dates and sponsors appear and a hyperlink is provided to their website with more information. Using ColdFusion programming, the listed event date is compared to the actual date to ensure no outdated news items are displayed. Visitors can search the news and announcements using a keyword(s) and narrow the search by COSEE center if desired. The entire news system is searchable by keyword, either as a single COSEE search or a COSEE-wide search.

An overview of milestones addressing Objective 1 follows:

- April 2004 - DLESE, Bridge, COSEE collaboration begins
- Summer 2004 - Worked with VIMS IT department to set up the server, purchase and install new web applications, and install new database required to utilize the DLESE search utility.
- Fall 2004 - Winter 2005 - Reformatted and added resource database fields to align with required DLESE metadata requirements.
- Spring 2005 - Summer 2005 - Re-reviewed all database records, changed and added metadata to align with DLESE requirements. Searched all COSEE center websites for possible resources to include in database.
- October 2005 - Initial submission of COSEE collection to DLESE for accessioning.
- November 2005 - COSEE collection became viewable in the preaccessioned DLESE Discovery System. They were available for use by our search engines but did not yet appear as a collection on DLESE.

- February 2006 - COSEE Collection became live on DLESE.
- February 2006 - DLESE search technology was integrated into the COSEE website and ability to search the COSEE collections from DLESE was initiated.
- February 2006 - COSEE Collection became live on DLESE. DLESE search technology (or discovery system) was integrated into the COSEE website and able to search the COSEE collections from DLESE. The resource nomination form was made available to the network to submit new resources as they became available.
- April 2006 - News & announcements section was added to COSEE.net. On the homepage, the three most recent news and announcement items are displayed in the right hand column. A search box is available to search the entire news & announcements database by keyword and COSEE center (if desired). A news & announcements form was made available to the COSEE network to upload new items to the database.
- May 2006 – COSEE Council provided with briefing on metadata entry forms
- May 2006 -COSEE Mid-Atlantic began beta-testing of the remote COSEE.net search utility on their site.

*Objective 2:*

At the initiation of the grant period the designer previously selected by COSEE for logo and branding work was contacted and engaged in preplanning for website revisions to better support its function as a portal providing organized access to all of the COSEEs and their resources. However, the actual production work did not begin until Objective 1 work had advanced to the stage that it was clear what outputs needed to be accommodated by an updated design. Objective 2 was approached in two phases: redesign of the COSEE.net main site and interior pages, and development of template materials for use on remote COSEE sites.

A steering committee, made up of one representative of each COSEE, facilitates COSEE-wide coordinated management of COSEE's web information. Individuals on this committee advised on the development of template materials for the entire network and are responsible for ensuring that news and resource metadata from their COSEE are entered completely and correctly into the COSEE databases. Simple input forms, one to enter a resource and the other to post a news item, have been created and posted for this purpose. The forms are located in COSEE's password protected online office.



**COSEE.net home page**

Detailed specifications were delivered to the designer, Julie and Company, in February 2005, and preliminary designs were received in March 2005. The redesigned page added links to new COSEEs, a search utility that queries both databases, and area for featured programs, a dynamically populated area for recent COSEE news, COSEE special topics links, COSEE's tag line, and a compatible template for sub pages within the site. Features of the template materials created for the COSEEs includes preformatted (in html and css-based) header and footer, 508 accessibility compatibility, several editable menu buttons, and a search utility that will search all of the COSEEs or a selected COSEE for news or resources. The top menu tier is consistent across all COSEEs and the second tier is fully editable. The large central area expands vertically for site specific content. An editable logo area in the footer allows individual COSEEs to add their sponsors' logos.

The top menu tier contains links to an "about" page, as site map (text-based, for accessibility), contact information for the COSEE, the COSEE.net main page, and to the sites' home page. These informational links will assure that this basic information is available for every COSEE in the exact same location. The editable buttons in the second tier allow COSEEs to enter navigation links specific to their content.

An important feature of the page is the search box utility, which allows a visitor to search the entire COSEE network for news or for resources. More advanced search options are available on the output page. This utility is currently live on the COSEE.net home page, but the network has not yet entered sufficient news for informative output in that area. The next phase of the project is expected to bring regular network-wide submission of information about news and resources.



**COSEE.net template**

### *Objective 3:*

All resources developed have been tested and found functional. A minor browser display issue on the CSS version of the web template was discovered during final testing. This situation is currently being remedied by our contracted website designer.

### ***Problems Encountered:***

The original time frame for the project spanned ten months beginning in December of 2004. However, delays in subcontract processing at both ends delayed production schedules by approximately 2 months. Subcontract paperwork sent to VIMS January 7 required revision and renegotiation and a revised contract was not approved by VIMS until February 17. Additional delays were introduced in work with DLESE partners and the subcontracted graphic designer, and it quickly became apparent that a longer time frame would be

necessary to develop a quality product. Consequently, the project time frame was extended until August 2006.

The project proved to be more technologically challenging than was originally anticipated, but all technical issues were resolved through frequent consultations with the DLESE Program Office and the VIMS Information Technology Department. The DLESE Program Office was most helpful with customizing the management of our resources so that outputs could meet both DLESE's criteria and specifications and COSEE's needs.

***Significant Results:***

The network has developed the capacity to produce and manage metadata describing its resources and to share metadata with other national systems and throughout the network, resulting in widespread national discoverability of resources. A similar capability has been developed for sharing news and announcements nationally.

In achieving this capacity, the network has learned that, in spite of the obvious advantages of technology, collaboration with distant partners can be challenging.

***Impacts/Implications:***

The conversion of [www.cosee.net](http://www.cosee.net) to an XML based portal integrated with the Bridge and other ocean education DLESE resources is providing key audiences (classroom teachers, informal educators and the interested public) with an unprecedented, comprehensive and powerful system for obtaining quality ocean education information and resources nationally.

***Other accomplishments during the grant period:***

Project staff configured and maintained an online password protected COSEE office area to support COSEE activities. Links to this office area have been placed at the bottom of each COSEE.net page. Work in the area included installation of a new windows-style expanding menu, a text-based how to use this site overview, an announcements system (later removed due to lack of use), a javascript graphic menu for administrative events (later removed due to lack of use, and replaced with a new list-style calendar that became available subsequent to a software upgrade), several work areas for COSEE groups to share files, a form for entering metadata about new COSEE resources, a form for posting news and announcements into the COSEE news system, links to COSEE's Wikis, and links to evaluation information and materials. Washington office CCO staff manages the contents of the COSEE-wide shared file cabinet and the new administrative calendar. The COSEE evaluation group manage the contents of the evaluation section.

At the request of the COSEE Council, two Wikis were established, one for development of the COSEE Blueprint and the other as a platform for diversity related discussions. The Blueprint Wiki was used successfully to manage various drafts and input from

many members of the COSEE community at one central location. The Diversity Wiki has not been used yet.

Also at the request of the COSEE Council, a COSEE-wide listserv was launched in July of 2006. Twenty posts have been made to the list.

A preliminary communications needs assessment survey was created and distributed to the COSEE Council and the COSEE.net web advisory committee. Results were summarized and posted in the COSEE shared file area for Council consideration in as they plan future communications strategies.

***Future Work:***

Activities supported by this grant are concluded. They were the first phase of a two-part project. The second phase will support full implementation of the capabilities developed during this grant.

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