

## **Evolution of the COSEE Evaluation Community: From Individual Centers to a Community of Shared Inquiry and Practice**

*Note: This document highlights the development of the evaluation community within COSEE from the perspective of COSEE Center evaluators and the Evaluation Working Group. This is not a history of evaluation within COSEE or the impacts of COSEE. This review is of the major events and developments that highlight our community's evolution and so this perspective may differ from others within COSEE.*

### **Summary**

The Centers for Ocean Sciences Education Excellence (COSEE) Network was originally created by the National Science Foundation (NSF) to actively nurture “collaborations among scientists and educators to advance ocean discovery and make known the vital role of the ocean in our lives.” Over the past nine years, as this novel Network developed, a shared community of practice developed within COSEE—an evaluation community. This has been an unanticipated outcome of the funding of COSEE and has become one of the strengths of the COSEE Network.

Since the beginning each COSEE Center has had, as part of the team, an external evaluator tasked with assessing the accomplishments and contributions of that particular Center. As the Network developed, evaluators contributed expertise and insights to each of their Centers, as well as shared resources and results with one another. However, in 2008, Center evaluators as a group evolved from a loose aggregate of contributors into a learning community and inquiry team. And now, along with supporting individual Centers and the Network, Center evaluators are poised to pursue significant cross-Center evaluation projects and research studies to answer broad questions about scientists’ engagement in ocean sciences education.

This document chronicles our progress from individuals within a Network to an inquiry community. This evaluation community was slow to develop for several reasons. First, it took each of the Centers a year or two to get organized and focused (due to the different missions and audiences of the three mandated partners) and so it took Center evaluators some time to become familiar with their Center’s goals and start their work. Second, communication between the initial COSEE Central Coordinating Office (CCO) and Network Evaluator and Center evaluators was neither open nor supportive of communication and collaboration. Third, no one viewed Center evaluators as a Network resource and so did not set as a priority cross-Center evaluation communications or collaborations. The COSEE evaluation community did not blossom until Center evaluators began communicating regularly, meeting regularly as a group and setting the agendas based on evaluator needs, working on collective tasks, and receiving support from the CCO, COSEE PIs and NSF. Since 2008, the more Center evaluators have worked together, the more efficient and effective the group has become. We are now a community in service to and in support of COSEE and NSF’s Division of Ocean Sciences. Our evolution has not always been smooth, but we have learned along the way and hope our lessons will be useful to others.

### **Introduction**

In this document we are aligning our community’s evolution (based on a literature review) with the Waltonen-Moore et al (2006) five-stage model of community development. Those are:

1. Introduction: meeting each another
2. Identification: identifying, connecting and relating to one another
3. Interaction: first semblances of interactions with some self-imposed goals
4. Involvement: engaged, deliberate task-oriented interactions, cooperation and cohesion

5. Inquiry: application of learning and skills to new tasks, reaching beyond what is required

After reflection, we (Center evaluators) believe we have moved through the first four stages and are poised to tackle the fifth stage–inquiry.

### **Stage 1A: Introductions at the start of COSEE**

The initial 2001 NSF Division of Ocean Sciences (OCE) program announcement for COSEE funding encouraged, but did not require, evaluation and the hiring of Center evaluators. According to the program announcement, NSF desired to “establish a network of coordinated Centers that will facilitate collaborations and communications between ocean science researchers and educators. COSEE will foster the integration of ocean research into high quality educational materials, allow ocean researchers to gain a better understanding of educational organizations and pedagogy, provide educators with an enhanced capacity to understand and deliver high-quality educational programs in the ocean sciences, and provide material to the public that will promote a deeper understanding of the ocean and its influence on each person’s quality of life and our national prosperity.”

The announcement continued with two “potential activities” for new Centers specifically related to evaluation:

- “Provide expertise and design evaluation instruments that can be used to assess and strengthen new or ongoing efforts. Because oceanographers are largely unfamiliar with the specialized techniques used to evaluate educational effectiveness, the COSEE community must provide knowledgeable personnel who are fully aware of both evaluation fundamentals and the specific challenges of ocean education. For example, COSEE staff could design evaluation plans for ongoing or new ocean education programs or run workshops on evaluation for those wishing to improve their efforts. As nationally recognized experts in evaluation, COSEE staff could also serve as consultants on future proposals, strengthening both the proposals and future programs if funded.”
- “Demonstration of the resources and expertise to use evaluation paradigms to promote COSEE goals.”

Included in this original announcement was solicitation for a Central Coordinating Office (CCO) with one of the functions to: “evaluate the effectiveness of COSEE activities and develop evaluation paradigms and instruments.”

In the fall of 2002 NSF funded a CCO and seven regional Centers, each of which had, to some degree, a contract with one or more external evaluators. The role of and funding for each Center evaluator varied widely depending on the Principal Investigators’ (PIs) interpretation of the solicitation, anticipated needs and experience with program evaluation and evaluators.

The first meeting of Center evaluators, with their PIs, occurred in May 2003 in Washington D.C. The goals were to become familiar with COSEE, learn what each evaluator was planning, initiate a network of evaluators by identifying common and unique projects and characteristics, develop evaluation support systems including communications, and consider national initiatives such as a system for compilation of results, the meta-analysis of findings, variables and metrics, and the evaluation of the Network. Facilitating the discussion was Dr. Mike Seaman, who worked for the University of South Carolina, Office of Program Evaluation (OPE). OPE was the COSEE Network Evaluator, as well as the evaluator for COSEE Southeast (SE).

The Center evaluators were enthusiastic about being part of the COSEE Network and the opportunity to meet one another. We were willing to share and collaborate albeit within the constraints of our contracts. Most of us felt that our primary commitment was to our individual Centers, but agreed with the need to share more broadly. This was the first time that many of us were informed of the need for network-wide contributions, but we recognized the importance. Some evaluators recommended establishing common data collection schema at that meeting. The decision-makers, however, were hesitant and felt COSEE was not yet ready, and so that task did not occur at our first meeting.

The Center evaluators suggested that because we were a small group (only six), we could work together as a group. The Network Evaluator, however, wished to work with a smaller group of Center evaluators on Network evaluation issues and communications.

In September 2003, the Network Evaluator (OPE's designate Dr. Seaman) began requesting data from Center evaluators. His plan was to analyze and synthesize the data to determine common themes and methods, suggest potential collaborations, and develop Network evaluation questions. He was also tasked with creating a COSEE evaluation website (launched in February 2004) for document exchange and to serve as a central repository of evaluation plans, instruments, activities and reports. Over the next several months, Dr. Seaman produced a series of planning documents with recommendations on coordinating Center evaluators and setting criteria for common data collection. The documents were thoughtful and well written and, for the most part on target. At the fall 2004 COSEE Council meeting in Florida, Dr. Seaman proposed that 10% of all Center evaluators' contract time be dedicated to Network evaluation needs, and the Council approved.

During 2003 and 2004 all communications from the Network Evaluator to the Center evaluators were directive, rather than inclusive or collaborative. Although the Network evaluation plans and recommendations were valid, they were not communicated well and so were minimally implemented. During this time evaluation efforts for Center evaluators focused almost exclusively on Center issues. The focus on individual Centers was not only the concern of evaluators; each Center struggled with contributions and commitments to the Network while getting started and established.

### **Stage 1B: Introductions Stall**

The second NSF OCE program announcement for COSEE funding was released in 2004 for funding in 2005. To encourage dedicated time to the Network, the announcement stated that as part of the budget "7% of COSEE Center funding [was] required for network support," which included Network meetings and collaborations. The RFP's language with regard to evaluation was very similar to that in 2001. The only difference was that this RFP stated, "...participation in national evaluation efforts is required," although there was no established percentage for evaluation time or funding for Center evaluation or Network evaluation efforts.

In the fall of 2005, NSF funded three new Centers, and so the Network added three new evaluator(s). The new evaluators were never officially introduced to the other Center evaluators. At this time Dr. Seaman also officially assumed the role of Network Evaluator under contract with the CCO. In his new role, he began organizing the Network evaluation goals and systems for data collection from the Centers. He also established the Evaluation Advisory Committee and

recruited Dr. Rena Dorph of COSEE California (CA) and Patricia Kwon of COSEE West to advise him and communicate with the other Center evaluators. A sub-committee of the COSEE Council, called the Evaluation Working Group (EWG), was established to provide COSEE PI feedback and advice to the CCO and Network Evaluator.

The Network Evaluator established, with Council approval in May 2005, five key evaluation questions examining the effectiveness of the COSEE Network, with emphasis on the first two questions for all Centers and on the remaining three for Centers for which they were pertinent.

- How do scientists and educators participate in the COSEE Network and what are their perceptions about the roles and impact of COSEE?
- What are the characteristics of the COSEE Network and how is the Network functioning at local, national and international levels? What are the characteristics of local networks that have been created at each site?
- What professional development models have been developed and how do these models influence attitude, knowledge and practice?
- To what extent has the COSEE Network been successful at promoting equal access to quality ocean science education?
- What is the COSEE Network doing to influence K-16 and informal education?

During 2005 and early 2006, the Network Evaluator's work focused on:

- Creating a web-based searchable Network database (launched in 2006) containing relevant data from each Center on the five key questions above, and common survey and interview questions for participants of COSEE program activities
- Collecting evaluation reports and survey instruments from the Centers to determine common evaluation elements that could be employed in the Network evaluation
- Updating the Network evaluation website to enable the dissemination of information regarding the ongoing activities conducted by the evaluators and to provide access to evaluation documents and links to Center evaluators
- Developing a COSEE Network archive to store documents, instruments and data

Throughout 2006 COSEE Centers submitted to the Network Evaluator reports, instruments, and other documents for sharing via the archive, as well as adding activities data to the Network database. Unfortunately, because parameters for data entry were not rigorously defined or controlled, and not all Centers entered their data consistently, the data were not viewed as reliable and the COSEE community questioned conclusions drawn from these data.

In late 2006, NSF OCE issued a dual program announcement for COSEE funding: one for new (or refunding of) Centers to begin in 2007 and a second for a CCO and new collaborations with existing Centers to begin in 2008. The language in this RFP with regard to Center evaluation was the same as that of previous solicitations. As a result of this solicitation, six Centers were funded or re-funded and new evaluators joined the COSEE Network. The new evaluators were not officially introduced to the other Center evaluators and there was little change in the interactions between the Network Evaluator and the Center evaluators.

Dr. Seaman's contract as the Network Evaluator formally ended in January 2008 and he concluded his work in mid-2008. Findings from his final evaluation report included:

- The COSEE Network has become a strong collaboration of ocean sciences educators and scientists from across the country

- The COSEE initiative has directly created and strengthened connections among scientists and educators
- Professional development is the most common element and strongest strand running through local implementations of the COSEE initiative
- Pre-service ocean sciences learning is being addressed through course and curriculum development but has not reached the level of in-service efforts
- The COSEE initiative has established an ongoing and effective program of public awareness that is primarily regional
- COSEE Centers have produced an impressive array of products about the ocean sciences and ocean science education
- Direct efforts to increase and diversify the ocean sciences workforce and to increase access to and participation in ocean sciences education are limited
- The COSEE initiative has resulted in partnerships with diverse organizations that have a stake or interest in COSEE goals
- Network outcomes are primarily the result of local Center efforts and informal collaborations
- CCO evaluation findings have not been adequately communicated

Based on his review of all that COSEE had provided him, his final recommendations were:

1. Explicate shared goals that should be addressed either as a Network or throughout all Centers and distinguish these from other goals that represent work distributed among subsets of individual Centers
2. Develop a Network logic model
3. Conduct a needs assessment and select a limited number of Network-level initiatives based on the results of this assessment
4. Focus on outputs but identify a limited number of outcomes
5. Increase the attention given to pre-service education
6. Develop a mechanism for capturing data from collaborations that originate outside of formal Network settings
7. Establish a contract with an external evaluator

Through 2006 and 2007, Network evaluation tasks for Center evaluators were primarily to provide requested data to the Network Evaluator. Communications between the Network Evaluator and Center evaluators remained directive and diffuse (via PIs or the Evaluation Advisory Committee). He requested data, documents and information, and Centers honored the requests as best they could. A few evaluators knew one another and viewed each other's work on the collective archive or talked individually, but there was no communication or collaboration among Center evaluators. With the departure of the Network Evaluator, the Center evaluators continued working with their individual Centers.

## **Stage 2: Identification as COSEE Evaluators**

In late 2007 NSF revised and re-issued the previous program announcement, with some changes and the addition of a request for proposals to conduct an evaluation of the impact of the COSEE National Network. The EWG, the Council sub-committee led by Craig Strang of COSEE CA, with the aid of an advisory group of evaluators from outside COSEE consulted with NSF on the preparation of this announcement. No advice was solicited from the Center evaluators.

The language in the 2007 RFP with regard to evaluation was more detailed than previous announcements: “The intention of this Program Solicitation is to request proposals for activities to strengthen the coordination, evaluation, and breadth of COSEE Network activities.” And within the solicitation, the tasks of the Center evaluators as related to a National Network Evaluator (NNE) were described: “Each COSEE Center conducts an evaluation of the effectiveness and impact of its own activities using internal and/or external evaluators. The evaluations conducted at each COSEE Center include topics specific to the individual Center as well as topics that all of the Centers have agreed to collect in an effort to assist the national Network evaluation effort. This evaluation information is reported to the incumbent NNE, who is responsible for the synthesis, analysis, and interpretation of these data.”

“Annual evaluation reports on the effectiveness and impact of the COSEE Network are prepared for the COSEE Council and NSF. NSF intends to upgrade the scope of this Network-level evaluation and is soliciting proposals to lead this evaluation for a time period of up to five years. It is NSF’s intent that the evaluation of the activities of the individual COSEE Centers will remain under the direction of the Principal Investigator of the Center, but the Centers are expected to report the results of their evaluation to the NNE in a timely manner, with the details to be decided among the NNE, NSF, and the COSEE Council.”

The solicitation continued to enumerate the leadership role that the NNE was expected to play in the Network and with Center evaluators, in particular:

- “Working with the evaluators from the COSEE Centers so that the combined evaluation plans for the individual Centers and the COSEE Network are effective at assessing the activities and impacts of COSEE as a whole.”

As a result of this solicitation, NSF funded a new CCO, five Center collaborators, and a NNE: Dr. Mark St. John and his team at Inverness Research. The NNE began working with COSEE in the fall of 2008. While awaiting NSF’s award of the NNE contract and the start of work by that evaluator, the EWG was inactive.

During 2008, before the NNE started and as the departing Network Evaluator ended his work, a change occurred among the Center evaluators resulting from an unexpected meeting—a meeting that catalyzed the launch of the COSEE evaluation community.

The annual national COSEE Network meeting in May 2008 was hosted by COSEE West on Catalina Island. Attending that meeting were most of the Center evaluators. We did not realize that so many of us would be there until we arrived, and we took the opportunity to introduce ourselves, get to know one another and learn about each other’s evaluation projects. We found we had many common concerns and issues, and shared a desire to discuss them in detail. We organized an evaluators meeting—the first such meeting since 2003. Included in our ad hoc gathering were the CCO director, Dr. Scowcroft, and NSF program officer, Elizabeth Rom.

On a sunny patio overlooking the Pacific, we discussed our need to share each evaluator’s work more effectively, our need to discuss challenges and solutions, our need to work on common metrics, and our desire to meet regularly. NSF and the CCO agreed to support an annual evaluators’ meeting, and we decided that early fall was the best time of year. During our discussion, NSF highlighted their wish for common metrics and informed us that a collective

metric should focus on COSEE's impact on scientists. That emphasis startled many of us who had been diligently assessing COSEE's impact on education and public audiences.

The Center evaluators left Catalina armed with a shared focus and a commitment to collaborate. During that single meeting our community jumped from introductions to shared identification as COSEE evaluators. The COSEE evaluation community had started to gel.

Our first collective task was to document who we were. We developed an Evaluators' Matrix that included each evaluator's contact information and expertise, as well as each Center's evaluation focus and audiences. This helped to facilitate communications.

Our second task was to plan for our first annual COSEE evaluators meeting, scheduled for September 2008 in Rhode Island. The evaluators, led by Patricia Kwon of COSEE West, organized the meeting agenda and discussion items, with assistance and support from the CCO. Most of that meeting focused on getting to know each Center's evaluator and his/her work better, as well as learn how we could contribute to understanding the Network's impacts. In attendance were all Center evaluators, COSEE Ocean Systems (OS) staff to aid with concept mapping, the new NNE, NSF and the CCO, who hosted and provided administrative support.

During that meeting NSF and the CCO raised the issue of the 2012 NSF 10-year COSEE program review and the need for answers to these Network questions:

- How does COSEE facilitate productive interactions with scientists and educators?  
What are the impacts?
- How does the Network contribute to the building of individual/organizational capacities?
- How has COSEE supported scientists in communicating research to broader audiences?

By the end of the meeting, Center evaluators were ready to interact collaboratively and collectively.

The COSEE Council reconstituted the EWG at the start of 2009, chaired by Rosanne Fortner, PI for COSEE Great Lakes (GL). As part of its new charge, the EWG developed a mission statement and scope of work, later approved by the COSEE Council. The primary functions were: "To serve the COSEE Network, its sponsors, Center Evaluators (CE) and the NNE by providing information and advice on: 1) collective evaluation needs, 2) existing resources and collaborative opportunities that document the extent to which COSEE goals and objectives are achieved, as well as the Network's impacts." EWG members included five PIs (including the CCO), seven Center evaluators, NNE, and NSF program officers. CCO associates provided vital administrative support by taking notes and posting them to COSEE archives. Typically 8 to 10 people regularly joined the weekly or bi-weekly EWG calls.

With the inclusion of Center evaluators, the "new" EWG was the first opportunity for Center evaluators to officially advise on decision-making regarding the Network and how to measure its impact. To ensure that all Center evaluators, as major COSEE evaluation stakeholders, were apprised of discussions and decisions, Chris Parsons, the COSEE Networked Ocean World (NOW) evaluator, agreed to be the communications liaison between the EWG and Center evaluators, however, with seven evaluators on the EWG, there were multiple liaisons.

### Stage 3: Network Interactions

The official meeting of COSEE evaluators in September 2008 and our inclusion in the EWG had propelled the evaluation group into true COSEE community engagement and interactions. We had multiple platforms for communications about evaluation issues and needs. Communications were open from the CCO and Council to Center evaluators, between the Center evaluators and the NNE, and among the Center evaluators. Our interactions were also becoming task-oriented. Specifically, we were interested in how to measure collective impacts of the COSEE Network—13 different Centers, each with multiple partners, engaging hundreds of scientists and reaching out to the public in hundreds of different ways.

To begin measuring collective impacts, the EWG's first major task was to define COSEE audiences and activities. Only then would we be ready to collect reliable common cross-Center data. EWG discussions in early 2009 began with the definition of “scientist” and “educator” and what information would be needed (or could be gathered) to classify and categorize those two groups. In addition, due to the failure of the previous COSEE database, we knew we had to develop and define parameters for all of COSEE's activities, e.g., What constituted a workshop? How was that different from a lecture series or a forum? For data to be comparable across Centers, we needed clear and concise definitions.

While the EWG was working on definitions, Center evaluators continued communicating regularly about each other's work and possible collaborations. Taking advantage of an open invitation for Center evaluators to participate in national COSEE Network meetings, most of the evaluators attended the May 2009 meeting in Hilton Head, South Carolina. Again, we organized our own discussions within the Network meeting agenda and outside the Network meeting. With the NNE and using an online survey, we developed a collaborative agenda and used Skype to bring in evaluators who could not attend the meeting in person.

At that meeting we tried to tackle too much given the limited time and the NNE's desire to formulate cross-Center research projects to meet a looming grant deadline. We were not successful at following our agenda. However, we were able to continue involving as many Center evaluators as possible in the communications and discussing both Center issues and Network issues with the NNE. We also spent time planning a session for the ASLO Ocean Sciences meeting to be held in Portland in February 2010. The session was entitled: COSEE Evaluations: What We've Learned and Implications for the Future. We planned to have scientist PIs, Center evaluators and the NNE present the results of a variety of studies on COSEE audiences, scientist-educator collaborations and education activities, showcasing what we had learned and discussing implications for future COSEE strategies and evaluation efforts.

By December 2009, after a year of almost weekly conference calls, the EWG, Center evaluators and NNE completed a definitions document: *Recommended Scheme for Cross-Center Data Gathering*, referred to internally as the “bins” document. In this document we clearly defined scientists, educators, the activities that COSEE engages them in, and the broad evaluation questions that Network-wide data gathering should address. We also established a set of basic test questions for information gathering: Is it easy enough to gather? Will it result in information and findings that are compelling? Is it credible? Is it cost effective?

Due to the often-detailed nature of EWG discussions and the workload, by the fall of 2009, Chris Parsons, the COSEE NOW evaluator, transitioned from co-chair of the EWG to chair. Patricia



Kwon took on the role of communications liaison between the EWG and Center evaluators. At that time the membership of the EWG included three PIs, six Center evaluators, a National Advisory Council (NAC) member, the NNE and NSF, with support from the CCO. Usually 6 to 8 people participated on the nearly weekly EWG calls.

The Center evaluators also communicated regularly, via the EWG and individually. In the summer of 2009, we started planning our annual September 2009 meeting in Rhode Island. We wanted to develop goals and strategies for cross-Center evaluation activities, identify tasks for Center evaluators in support of the NNE, identify our role in the NSF 10-year COSEE program review, assist with a subsequent workshop on best practices for teacher professional development (in which several Center evaluators participated), and continue to share and learn from one another.

What we didn't anticipate when we began the 2009 evaluators' meeting was the change in schedule for the NSF 10-year COSEE program review, or Decadal Review. We learned from NSF that the deadline had been moved up and that any work we were going to contribute to the Decadal Review had to be completed in early 2011—about 18 months away. Given that this was a review of our accomplishments, we immediately recognized the role of the Center evaluators.

Because we had been working together closely over the past year, we were able to plan quickly for the Decadal Review. We built a schedule, charted the role of Center evaluators in relationship to the NNE and CCO, and identified the role of Centers' data/evidence in the Decadal Review document. We also gathered final feedback on the "bins" document and prepared for the early 2010 launch of the Network-wide scientist and educators surveys. In addition, we began a "best practices" matrix on teacher professional development activities that COSEE had been engaged in and common metrics currently used to assess such activities. We also encouraged everyone to submit abstracts to our accepted ASLO Ocean Sciences 2010 session. With our concerted focus on the Decadal Review and our planned Network-wide surveys, we agreed to hold regular Center evaluator teleconferences on the third Monday of each month. Everyone was clearly engaged and involved, the beginning of stage 4 of our community.

Shortly after the evaluators' 2009 meeting, with the "bins" document approval by the COSEE Council, Center evaluators prepared COSEE's first Network survey—a Scientist Engagement Survey. It took the EWG and NNE, with review by Center evaluators, the remainder of 2009 to finalize the survey and develop guidelines for consistent implementation and then transfer of the data to the NNE, who compiled, tallied and analyzed the collective data set. The Scientist Engagement Survey, launched in January 2010, provided COSEE and NSF with the first set of reliable, consistent and coherent Network-wide data about the number of scientists, their personal characteristics, and their engagement with COSEE during a single calendar year (2009).

In February 2010 the Center evaluators met in Portland at the ASLO Ocean Sciences meeting. We had both an oral session and a poster session focused on COSEE evaluation strategies and results—the first such session at any national meeting of scientists. At that meeting we refined our second Network-wide survey—the Educator Engagement Survey. With its launch in March 2010, we had collected a second set of reliable, consistent and coherent Network-wide data about the number of educators, their personal characteristics, their engagement with COSEE, as well as benefits from that engagement during a single calendar year (2009).

Although from start to finish it took over a year to conduct two COSEE Network audience surveys, we showed that the EWG, NNE and Center evaluators working as a team could develop common metrics and implement them across the Network to collect reliable data and produce useful results.

At the May 2010 national COSEE meeting in Seattle, the Center evaluators scheduled an all-day meeting prior to the Network meeting to continue to work on Decadal Review documents. The EWG had been tasked early in the year by the Decadal Review Working Group (DRWG) with writing: 1) a summary of the results of the scientist and educators surveys, 2) a synthesis of the accomplishments of COSEE based on evidence loaded into an “evidence bank wiki” provided by the NNE, 3) a synopsis of the evolution of the evaluation community and 4) a view of evaluation within COSEE into the future.

At the May meeting our discussions focused on the Decadal Review documents and what needed to be done. We also shared strategies for Center evaluators supporting the NNE’s work and the NNE supporting Center evaluators’ work. At the Network meeting we reported the results of the Scientist Engagement Survey, and although results were not yet available, updated the Network on the Educator Engagement Survey. We had finally made significant progress addressing the first question raised by the Network Evaluator in 2005.

#### **Stage 4: Involvement and Inclusion of New Evaluators**

In the fall of 2009 NSF released a program solicitation for new and renewing COSEE Centers. The language of this RFP with regard to evaluation was the most explicit to date: “Each COSEE Center is expected to have a Center evaluator. The Center evaluator must participate in and contribute to efforts of the NNE. NSF expects that the primary role of the Center evaluator is to participate in the national evaluation effort that is structured and coordinated by the NNE and the EWG. NSF expects that 5% of the total budget should be allocated for this purpose. Other evaluation activities at the Center level may be necessary for the effective development and/or management of the Center's activities. If so, a plan for these other evaluation activities, and their estimated costs, should be described in a document that’s included as a Supplementary Document.”

“The NNE is responsible for collecting, organizing, and interpreting data on activities that occur at the Network Level. The NNE and the EWG can serve as intellectual resources for the evaluation efforts at the Center Level, but all evaluation efforts for Center activities are the responsibility of the Center evaluator(s).”

In 2010 as a result of this solicitation, NSF funded three new Centers and refunded three. Because they did not renew contracts for an additional three existing Centers, we lost three Center evaluators and gained four (three from the new Centers and one from a refunded Center). We knew that it was critical to get the new Center evaluators quickly and properly introduced into the COSEE evaluation community, and so we requested that they participate in the annual evaluators’ meeting in September 2010 in Rhode Island. NSF and the CCO agreed.

To prepare the new Center evaluators for their role in COSEE, Romy Pizziconi an associate at the CCO, suggested an Evaluators’ Welcome Kit. She worked with the EWG chair and communications liaison to pull together an online kit that contained everything that a Center evaluator new to COSEE would need to fit in quickly, including an updated Evaluators’ Matrix,

definitions for COSEE acronyms and commonly used EWG and Decadal Review terms, copies of the “bins” document and the two audience engagement surveys, information on COSEE’s history, organizational structure and plans, a backgrounder on each Center, and more.

The annual evaluators’ meeting in Rhode Island in September 2010 was attended by 11 Center evaluators, the NCO (formerly CCO), the NNE, and NSF. To orient the new Center evaluators we presented diagrams and discussed the relationships between Center evaluators and the EWG, DRWG, NNE, NCO and NSF with regard to the operation of COSEE and the Centers, but also with respect to the Decadal Review. The new Center evaluators asked many questions about how COSEE had been operating, but more importantly how it might move into the future given NSF’s new requirement of 5% of a Center’s budget to national Network evaluation efforts. The new evaluators called for a cross-Center evaluation plan (in addition to a Network evaluation plan). They wanted to know how they fit into the Network evaluation, as well as how they were expected to collaborate with Center evaluators on measuring COSEE impacts.

This was challenging because the established Center evaluators were focused on the Decadal Review documentation. We all agreed that the Decadal Review was the priority and that we would repeat the Scientist Engagement Survey in 2011 (for two years of comparable data). But we also recognized the need to engage the new Center evaluators and to plot a future for evaluation within COSEE.

We agreed that established and new Center evaluators would begin the development of a cross-Center evaluation plan in the spring of 2011. We thought that that would also be a good time to start discussing cross-Center collaborative evaluation and/or research projects. At that meeting, we were clearly operating as an involved community and were preparing for the next community phase in which the community applies its learning to inquire into broader questions.

### **Stage 5: Inquiry Community**

By the first quarter of 2011, the EWG finalized a document that recommends the future of evaluation within COSEE, which we call the Futures document. In addition to recommending that Center evaluators continue contributing expertise and insights to each respective Center, this document proposes that our future consist of working together to develop a rigorous COSEE database (planning began in March 2011), to collaborate on cross-Center evaluation projects and, if funding can be found, on evaluation research projects on scientists’ engagement in ocean sciences education. The Center evaluators’ Futures document is a plan for realizing the fifth stage—a community of shared inquiry within the COSEE Network.

### *Reference*

Waltonen-Moore, S. et al. (2006). *From virtual strangers to a cohesive online learning community*. *Journal of Technology and Teacher Education*: 14(2), 287-311.