

The COSEE Network Strategic Business Plan

Draft 11.11.09

Mission - Our Collective Purpose

Engaging scientists and educators to transform ocean sciences education for all

- Bringing current scientific research into education
- Actively engaging scientists in the education process
- Bringing the nature of science to educators
- Presenting the ocean in an Earth system perspective
- Engaging informal and formal education and public audiences in the ocean science enterprise

Values - What We Stand For

Excellence

- We are strategic visionaries, leaders and catalysts for change.
- We are passionate and tenacious about delivering quality results that matter to the world.
- We are committed to the generation and dissemination of new knowledge.

Collaboration

- We recognize the value of diversity and the power of our collective work.
- We create a “bridge” between industry, research scientists, educators and the public.
- We build strong partnerships to leverage greater outcomes than we could achieve alone.

Innovation

- We embrace natural curiosity and inspire transformative learning.
- We encourage risk-taking that leads to new ideas and novel solutions.
- We use creative means to broaden participation.

Vision - Our Picture of the Ideal Future

The COSEE Network is a sustainable force ...

- Ocean scientists, ocean engineers, educators and public and private leaders have forged powerful partnerships to deliver relevant, exciting products and services that inspire and inform the public
- A vibrant and effective National COSEE Network has expanded its partnerships and influence throughout the Nation
- The public values the ocean as an integral part of the Earth system
- Diverse people of all ages are learning about the ocean and pursuing careers in science
- Science discoveries are contributing to effective ocean policy decisions as well as science education reform
- We have internationally recognized spokespersons and exciting, ongoing media coverage about the ocean
- The National COSEE Network is well-funded by multiple public and private institutions

...we are transforming ocean education!

Key Goals and Outcomes for the Next 5 Years (2010-2014)

Goal #1: Build capacity of the National COSEE Network

In order to realize its potential to achieve greater national impact, we need to increase investment in the National COSEE Network and build its capacity in several key areas.

We need to use planning, reporting, and evaluation to drive high performance; build strategic partnerships; build NCN leadership and accountability; develop a nationally recognized COSEE brand; and increase the fundraising expertise and resources available to COSEE.

Key outcomes include:

Planning, Reporting and Evaluation Capacity

- Network Annual Operating Plan (AOP) has clearly articulated goals and metrics for (1) Participation, (2) Programs, (3) Products, (4) Impacts
- Network reporting and evaluation demonstrates progress on metrics for (1) Participation, (2) Programs, (3) Products, (4) Impacts

Capacity to Develop Strategic Partnerships

- Network has dedicated resources for strategic partnership-building
- COSEE has the capacity to maintain a balanced portfolio of partners (federal agencies, industry, international, NGO's, professional societies, STEM organizations) to support capacity building, outreach, and program delivery (i.e., to accomplish Goals #2 and #3)

Capacity for Leadership and Accountability

- Clearly documented roles, responsibilities, expectations and operating agreements for CCO, Centers, NAC, NSF, and other partners are reflected in RFPs, the AOP, and successfully drive performance
- Established mechanism that allows for professional development of COSEE's "deep bench" staff and allows for their voice in the Network

Marketing Capacity

- COSEE brand is well-known nationally in industry, academic, and government organizations
- Industry views COSEE as a "go to" place for educating the workforce and translating science into useful information
- The scientific community views COSEE as a trusted resource for achieving broader impacts
- COSEE has a set of champions helping to spread awareness

Fundraising Capacity

- Dedicated resources (non-federal funding) and expertise for network level fundraising
- Doubled investment in COSEE with multiple funders from private and public sources (including NSF and other NOPP agencies)
- Increased funding for the CCO and the portfolio of network level activities, primarily from other-than-NSF partners

Goal #2: Propagate effective practices, innovations, and products

In order for COSEE to achieve its mission of excellence, it must identify and propagate effective practices, innovations, and products that emerge from its research and development (R&D) efforts.

“Excellence” is achieved when Centers:

- Develop effective practices, innovations, and products through R&D
- Incorporate effective practices, innovations, and products from other Centers or from outside the Network
- Retain ideas and practices that have been shown to be more effective, and “let go” of ideas or practices that have been shown to be less effective
- Share and disseminate their work (including programs, tools, publications, or other intellectual property such as “Ocean Literacy” principles).

Key outcomes include:

Identification

- Common agreement on definition of “excellence,” “effective practices,” and criteria for judging/evaluating
- COSEE conducts annual review to identify effective practices, innovations, and products with defined criteria and processes to judge what is “excellent”
- COSEE has a well-documented portfolio of repeatable, proven education and outreach programs (ways to fulfill broader impact) in which scientists as well as educators can engage

Adoption

- Effective practices are rapidly shared and adopted throughout the National COSEE Network
- Programs that have reached a level of maturity are disseminated within the National COSEE Network

Dissemination

- Programs that have reached a level of maturity are disseminated beyond the National COSEE Network

Publication

- Documented evidence that multiple COSEE effective practices, innovations, and products are being used broadly within and across Centers in the National COSEE Network and externally through strategic partnerships
- Portfolio of publications describing COSEE impacts and effective practices, innovations, and products
- COSEE’s “intellectual property” is well represented in professional presentations and peer-reviewed publications that are widely recognized and cited

Goal #3: Create strategic partnerships to extend COSEE's reach

For COSEE to achieve its goal of transforming ocean education, it needs to reach a “tipping point” of recognition and participation – within the scientific community, among under-represented audiences in the ocean sciences, and geographically.

Through strategic partnerships, we need to expand COSEE's reach while maintaining an R&D focus.

Key outcomes include:

Scientific Community

- There is a measurable increase in quality engagements between COSEE and the academic, private, and government scientific community
- COSEE can demonstrate its success in helping scientists achieve broader impacts for their research
- COSEE has a presence in every relevant professional society, all major ocean graduate programs, and relevant ocean science agencies / organizations

Underrepresented Audiences

- COSEE is using innovative and effective approaches to overcome barriers to access and participation for underrepresented and underserved audiences
- The National COSEE Network has diverse representation at all levels (staff, managers, PIs, advisors, and the audiences we serve).
- COSEE has 3-5 quality partnerships at the Network level that focus on underrepresented/underserved groups in the ocean sciences

Geographic

- People in the “heartland” have access to COSEE
- All 50 states have an ocean sciences education initiative
- COSEE has an international presence

3 Year Implementation Plan (2010-2012)

Goal 1: Build capacity of the National COSEE Network

Assumptions

- The Annual Operating Plan (AOP) will be a rolling three-year plan, developed in the Fall of each year for review and approval at the November NCC/NAC meeting

Considerations

- “Activities that have a national impact” include both Center and Network level activities, and they should be captured in reporting and evaluation.
- Reporting by Centers and evaluators should be adequate for documenting progress on participations, programs, and products.
- The involvement of Center evaluators and NNE is needed to document impacts. The EWG can help to make sure that Center evaluators and NNE have adequate lead time to gather the data needed for review of the AOP.
- The Decadal Review will be a major focus of Network activity in 2010 and 2011. It will consume significant time, but will also help to clearly document COSEE’s impact.
- The CCO should play a coordinating role in partnerships, so potential Network level partners are vetted by the Council, and partnership agreements are developed and maintained.
- In developing partnerships, we should take advantage of COSEE’s existing partnership categories and guidelines (see www.cosee.net/about/join).

Action/Deliverable	Lead	When	Additional Resources
Objective 1.1: Improve Planning, Reporting and Evaluation			
1. Develop draft Annual Operating Plan (AOP)	SBPWG	Sep 2009 - Nov 2009	N/A
2. Review and approve AOP with NCC, NAC, NSF	ExComm	Nov 2009	N/A
3. Track AOP implementation	NCC	Dec 2009 – Nov 2010	N/A
4. Gather participation, program, and product data (from Centers and Decadal Review)	Centers & DRWG	Jul 2010	N/A
5. Gather impact data (from Center evaluations and Decadal Review process)	EWG, DRWG & NNE	Jul 2010	N/A

6. Review progress on a quarterly basis (Feb, May, Aug, Nov)	NCC	Dec 2010 – Nov 2010	N/A
7. Make adjustments and develop next AOP (then repeat steps # 2-6 annually)	SBPWG	Sep 2010 – Nov 2010	N/A
Objective 1.2: Support Strategic Partnerships			
8. To retain the strongest partnerships and activities from Centers whose funding has ended, create 2-3 collaborations with currently funded Centers to support these “legacy” programs	NCC	2011	Funding will be needed to support these activities
9. Develop a Partnership Working Group to identify and vet potential partners, create templates for partnership agreements, and help to create a balanced portfolio of COSEE network level partnerships.	CCO	2011	[Received NSF funding for Collab. & Partnerships Coordinator]
Objective 1.3: Enhance Leadership and Accountability			
10. Develop concise list of expectations and responsibilities for Center PIs and staff (including “deep bench” staff beyond the PI’s) participation in Network level activities	ExComm	Nov 2009	N/A
11. Identify changes in “Network architecture” needed to support vision and goals	GWG	Spring 2010	N/A
12. Review and update operating agreements for CCO, Centers, NAC, NSF and other partners	GWG	2010	N/A
13. Incorporate expectations (#10), operating agreements (#12), and Center responsibilities to the Network into the COSEE website, for new PIs or those applying for COSEE funding	CCO	Nov 2009	N/A

Objective 1.4: Build COSEE's Profile Among Key Constituencies			
14. Establish SI Ocean Hall science lecture series	SI/CCO/MMWG	2010	[Received NSF funding]
15. Continue to develop and enhance COSEE's web presence to facilitate partnership building and outreach	WWG	2010-2014	[Received NSF funding]
16. Develop 13 multimedia case studies of successful scientist engagement	SEWG/MMWG	2010-2012	[Received NSF funding]
17. Establish/maintain COSEE "presence" at 4-6 key national professional meetings per year (esp. ocean science and science education)	CCO	Ongoing	[Received NSF funding]
18. Develop annual award program for scientists or private sector entities who contribute to COSEE's success	CCO	2011	[Received NSF funding]
Objective 1.5: Increase fundraising capacity			
19. Obtain \$50-100K in non-federal resources to support fundraising activity	CCO	2011	Will need some seed funding and additional personnel
20. Develop local/regional business partnerships	Centers	2011	N/A
21. Pursue 3-5 additional funding sources beyond NSF-OCE (including multiple funders from private and public sources, including NOPP agencies, industry, etc.)	CCO	2012	Requires resources from #21 above

Goal 2: Propagate effective practices, innovations, and products

Assumptions

- Definition of “effective practices:”
 - May be different for practices, products, or intellectual property
 - programs – methods or processes that most efficiently achieve the desired outcomes at the highest measurable degree of success
 - tools – elegant as well as useful, “know it when you see it”
 - intellectual property – highly valued by the professional community, well-cited
 - Have a common definition at the Network level
 - Should be based in the research literature. However, in some cases COSEE models/programs may define new or additional effective practices, and therefore may not entirely employ all the traditional effective practices as defined in the literature
 - Informed by COSEE experience, evaluation data, and judgment of experts
 - Continually refined and improved, there is no “end point”
 - “Promising” practices have emerged from an R&D process with third-party evidence. “Best” practices have been spread into the field and taken to scale, and are backed up by multiple sources of evidence.

Considerations

- Topics/themes for “effective practices” should be central to COSEE’s work. For example: teacher professional development, diversity, and engaging scientists.
- Challenges in propagating “effective practices” in COSEE:
 - Centers operate in a competitive environment (easier to be rewarded for your own innovations than for adopting those created by others)
 - Center activities are distributed and diverse
 - Each Center has separate funding and scope of work
 - There is a need to protect, as well as disseminate, intellectual property
- In order to identify effective practices, we need to:
 - Be knowledgeable about the relevant research literature
 - Reflect honestly on Center practices – to define the key elements, and how they mesh with what the literature says
 - Develop a common perspective (as informed by the literature and our practice).
 - Clarify what is unique to COSEE vs. what is in common w/ others in the field
 - Identify when it is appropriate for COSEE to evaluate itself vs. use external validation (literature, outside experts, external partners)
 - Identify when COSEE should lead in defining effective practices, collaborate with others, or primarily draw from others
- In order to propagate effective practices we need to:

- Reflect on our experience. What models have been successful in COSEE so far in terms of effective pathways for propagating successful programs?
- Choose the right vehicle for dissemination depending on the nature of the practice, program, or tool.
- Decide who is suited to manage a partnership (center, CCO, etc.). Include the center(s) that designed/developed an effective practice/program in its dissemination
- Use the CCO’s capacity to broker, convene partners, develop agreements, etc. Take advantage of personal relationships to develop partnerships, where appropriate
- Form *ad hoc* or permanent working groups as needed (e.g., *ad hoc* Professional Development Working Group formed in 2009)
- Look for opportunities to institutionalize successful programs
- The scale of dissemination will determine implementation and funding requirements:
 - Small scale – Individual Centers adopt new practices, programs, tools, etc. or modify their practices, programs, etc. within their existing budgets (\$10-20K)
 - Medium scale – Centers (individual or collaborative) apply for internal NSF COSEE funds (“fund for excellence” or new collaborations funded by NSF) (\$100-200K)
 - Large scale – Centers/Network seek major external funding within NSF GEO, EHR or other agencies (>\$1M)
- In developing partnerships, take advantage of COSEE’s existing partnership categories and guidelines (see www.cosee.net/about/join).

Action/Deliverable	Lead	When	Additional Resources
Objective 2.1: Identify			
22. Agree on criteria for “excellence” (see “excellence” under Values and description of “excellence” under Goal #2)	NCC	Nov 2009	N/A
23. Choose annual focus topic/theme for 2010	NCC	Nov 2009	N/A
24. Produce literature review or “white paper”	EWG	Mar 2010	N/A
25. Survey of Center activities and evaluation results (Survey Monkey)	CCO	Jun 2010	N/A
26. Summarize activity and evaluation data, including data from CCO/NSF site visits	CCO	Jul 2010	N/A
27. Conduct effective practices workshop	CCO	Sep 2010	[Received NSF funding]
28. Produce workshop proceedings	CCO	Oct 2010	
29. Document 1-2 repeatable, proven, “mature” effective practice outreach programs in which scientists as well as educators can engage to fulfill broader impact	CCO with relevant Centers	Nov 2010	May require some additional funding
Objective 2.2: Adopt within the Network			

30. Implement <u>ongoing</u> internal professional development on the annual topic/theme (e.g., via webinar, miniconference, study group, or self-assessment tools), involving external partners as appropriate	NCC	Jan 2010 - May 2010	TBD
31. Include internal professional development on the annual topic/theme at the <u>May Network meeting</u>	NCC	May 2010	N/A
32. Implementation of program(s) (from #29) on small, medium, and/or large scale as appropriate (see Considerations above)	Centers and/or Network	Jun 2010 – Dec 2010	Depends on scale of implementation
Objective 2.3: Disseminate beyond the Network			
33. Develop 1-2 strategic partnerships to extend COSEE practices to reach additional ocean scientists (e.g., through professional societies)	CCO/ Network	2010	Depends on scale of implementation
34. Identify opportunities within NSF (beyond OCE) and other federal agencies to extend COSEE practices or programs to other disciplines (e.g., in NSF/GEO geology, atmospheric scientists)	CCO/ Centers	2011	Depends on scale of implementation
35. Develop 1-2 strategic partnerships to extend COSEE practices to other networks relevant to STEM (e.g., NSTA, NABT, ASTC, AZA, NMS, Seagrant)	CCO/ Network	2012	Depends on scale of implementation
36. Institutionalize successful programs	Centers	Ongoing	N/A
Objective 2.4: Compile Evidence, Evaluate, and Publish			
37. Document evidence that multiple COSEE effective practices, innovations, and products are being used broadly within and across COSEE Centers and externally through strategic partnerships	NNE (as it relates to Decadal Review)	Nov 2010 (as part of annual review)	N/A
38. Create 1-3 peer-reviewed publications per year on COSEE effective practices, innovations, and products	Centers	Nov 2010 (as part of annual review)	N/A
39. Repeat # 23-38 annually as appropriate			

Goal 3: Create strategic partnerships to extend COSEE's reach

Assumptions

- The most effective way to expand COSEE's reach – while maintaining an R&D focus – is through strategic partnerships

Considerations

- Identify opportunities to reach multiple target audiences in one outreach effort (e.g., in expanding outreach to scientists, could we engage Latino scientists from Idaho?)
- Seek ways to include underrepresented/underserved audiences within existing programs
- Seek ways to leverage Internet-based opportunities to expand reach (e.g., websites, videoconferencing, social networking, and online collaboration tools)
- In developing partnerships, take advantage of COSEE's existing partnership categories and guidelines (see www.cosee.net/about/join).

Action/Deliverable	Lead	When	Additional Resources
Objective 3.1: Scientific Community			
40. Increase quality engagements within the academic, private, and government scientific community (leveraging effective practices from Goal #2)	NCC	2010	[Leverage new NSF-funded COSEE initiatives]
41. Develop COSEE presence in relevant professional societies	CCO	2010	[Received NSF funding for Collab. & Partnerships Coordinator]
42. Establish a COSEE presence in major ocean science graduate programs	Centers	2011	N/A
43. Increase COSEE's profile in relevant ocean science agencies and organizations. Identify 2-3 additional strategic partners (industry, NGO's, federal agencies), and establish partnership agreements.	NCC	2011	[Received NSF funding for Collab. & Partnerships Coordinator]

Objective 3.2: Underrepresented Audiences			
44. Evaluation demonstrates COSEE's progress towards use of innovative and effective approaches to overcome barriers to access and participation for underrepresented and underserved audiences	NNE	2011	TBD
45. Increase diversity in the NAC	NAC	2011	Nominating Committee
46. Increase diversity in the NCN	Centers	2011	N/A
47. Develop 2-3 quality partnerships that focus on underrepresented/underserved groups	DWG	2011	TBD
Objective 3.3: Geographic			
48. Develop 2-3 partnerships that provide access to COSEE for people in the "heartland" via other networks relevant to STEM (e.g., NSTA, NABT, ASTC, AZA, NMS, Seagrant)	CCO/ Network	2012	[Leverage renewed/new center funding where possible]
49. Build momentum for an ocean science education initiative in all 50 states	NCN	Begin in 2012	TBD
50. Develop an international presence for COSEE	NCN	Begin in 2012	TBD

Explanation of COSEE Acronyms

AOP	Annual Operating Plan
Centers	Individual Centers for Ocean Sciences Education Excellence
CCO	Central Coordinating Office, funded by NSF which houses the National Network Director (NND) and the National Network Secretary (NNS).
DWG	Diversity Working Group
DRWG	Decadal Review Working Group
EWG	Evaluation Working Group
ExComm	COSEE Executive Committee (includes the past-Chair, current Chair, and Chair elect of the NCC, with the National Network Director serving as ex-officio).
GWG	Governance Working Group
MMWG	Messaging/Marketing Working Group
PWG	Partnership Working Group (to be created)
PDWG	Professional Development Working Group (currently an <i>ad hoc</i> group)
NAC	COSEE National Advisory Committee, which serves as a source of advice for the National COSEE Network (NCN) and provides recommendations to the NCN and funding agencies on improving the effectiveness of the national COSEE program.
NCC	National COSEE Council, the governing organization for the NCN, which includes representatives and alternates from each individual Center and the CCO
NCN	National COSEE Network, composed of the individual Centers and the CCO
NNE	National Network Evaluator
NSF	National Science Foundation
OCE	NSF Division of Ocean Sciences
PWG	Partnership Working Group (to be formed)
SBPWG	Strategic Business Plan Working Group
SEWG	Scientist Engagement Working Group
SI	Smithsonian Institution
WWG	Web Working Group

Strategic Planning Process

This document represents the product of strategic planning work undertaken by the National COSEE Network in 2009. Key steps included:

1. Strategic planning meeting held March 4-6, 2009 in San Francisco, CA

The goal of the meeting was to develop the strategic business plan framework for the National COSEE Network (NCN). Additional details can be found in the meeting notes.

The planning group, facilitated by Cindy Zook, included:

- National Advisory Committee members: Dan Whaley, Carroll Hood, George Matsumoto, Mike Loudin, Gordon Kingsley
- COSEE Council leadership (past, present, future Chairs): Janice McDonnell, Billy Spitzer, Sharon Walker, Annette, deCharon, Lundie Spence
- COSEE Central Coordinating Office: Gail Scowcroft (supported by Andrea Kecskes, Romy Pizziconi)

Over two full days, the agenda for the group included:

- Opening remarks from NSF
 - With appropriate planning and strong progress, COSEE is generally on track for a successful 10 year review
 - Need to focus on COSEE's connection to the scientific community
 - Opportunity to expand what the NCN can become
- Review of last 3 years – successes, misses, lessons learned
- Review of mission, vision, values from 2005 strategic plan
 - Revised mission: “Engaging scientists and educators to transform ocean sciences education”
 - COSEE's focus is on innovative activities that transform the ocean education enterprise – a balance of R&D, program delivery, and network building
 - COSEE is a key player (but not the only one) in the larger movement to spread ocean literacy – strategic partnerships are essential for COSEE to grow and spread its impact
 - COSEE achieves excellence through high performance, rigorous evaluation, and identification and dissemination of effective practices
- Review of the operating environment – key challenges and opportunities
 - Difficult economy
 - Opportunities to address key ocean-related issues such as global climate change, ocean health, etc.
- Envisioning the next 5 years – vision for growth – increase investment, activity, and impact
 - Build capacity of the National COSEE Network – for planning and evaluation, partnerships, marketing, fundraising, and governance
 - Increase proliferation of effective practices and innovations – identify, create, disseminate, and implement broadly

- Broaden COSEE's reach – within the scientific community, among under-represented groups, and geographically (especially into the heartland)
- Fallback position – maintain current level of resources, network, and impact
- Short-term – build capacity and raise additional funding
- Long-term – achieve results re effective practices and reach

2. Review/feedback at the May 2009 NAC/NCC meeting in Hilton Head, SC

The planning framework was discussed, and substantially approved with some recommendations for further refinements.

3. Development of an Implementation Plan during September – October 2009

The goal of this effort was to develop a 3 year implementation plan, including an Annual Operating Plan for 2010, for discussion and approval at the November NAC/NCC meeting.

The planning group, facilitated by Billy Spitzer, included:

- National Advisory Committee members: Carroll Hood, Sara Espinoza
- NSF: Don Elthon
- COSEE Council members: Lundie Spence, Laura Murray, Craig Strang, Shawn Rowe, Molly McCammon, Elizabeth Vernon Bell, Liesl Hotaling
- COSEE Central Coordinating Office: Gail Scowcroft and Annette deCharon (supported by Andrea Kecskes)

The process included a series of four conference calls, and document distribution and review via Google docs. The agenda included:

- Brief review of the SBP mission, vision, values and goals
- Objective: Develop an implementation plan (3 years) and annual operating plan (2010).
 - Develop clearly articulated goals and metrics for (1) participation, (2) programs, (3) products, (4) impacts
 - Assess our current state and perform a “gap” analysis
 - Define how we will achieve our goals – what, who, how, by when
 - Revisit strategic framework in 2012
- For each goal:
 - Review of the goal and five year outcomes
 - Discussion of implementation steps
 - Development of a draft implementation plan including assumptions, considerations, and action steps
 - Discussion and revision of the implementation plan

4. Review/approval at the Nov 3-4, 2009 NAC/NCC meeting in Washington, DC