



COSIA

Communicating Ocean Sciences
to Informal Audiences

WHAT IS IT?

- COSIA is a network of partnerships between universities and informal science education institutions (aquariums, science centers, museums).
- Led by the Center for Ocean Sciences Education Excellence-California (COSEE-CA) at Lawrence Hall of Science (LHS), University of California, Berkeley.

WHAT ARE THE GOALS?

1. Provide a model for establishing substantive, long-term partnerships between scientists and informal science education institutions to meet their respective outreach needs.
2. Provide future scientists with experiences communicating science concepts & research to the public in informal environments, and promoting the broader impact of scientific research.
3. Provide informal educators with access to cutting-edge science and effective strategies to incorporate it into their practice.
4. Provide diverse role models and inquiry-based ocean sciences activities for children and families visiting informal education institutions to increase diversity in the geosciences.
5. Offer regional professional development opportunities for scientists and informal educators led by regional hubs of informal science institutions and universities.

WHAT IS IN THE NETWORK?

- **COSIA college course.** Scientist & informal educator co-teach a course that introduces science students to learning & teaching science, & offers students practical experience in communicating their scientific knowledge to the public. Currently being taught in 6 universities nationwide.
- **Museum Educators Reflecting On Practice.** Professional development program for science educators in informal science education institutions. Currently being field tested in 10 institutions nationwide.
- **Scientist Workshops.** One-day & multi-day workshops for scientists to learn how to communicate their research effectively & develop ways to improve their broader impacts.

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INTRODUCTION. Partnerships between scientists and educators have been occurring as mechanisms for science education reform over the last two decades. The work they have done together includes: scientists providing science content as part of professional development for teachers and development of curriculum; and graduate students teaching lessons in K-12 classrooms. In most of these instances, the scientists provide their science expertise, which the educators use to ensure the scientific accuracy and credibility of their activities. For this project, informal science education institutions (ISEIs) are explored as venues for scientists to communicate with the public and engage in a different model of partnership. In this instance, ocean scientists and educators develop new understanding and practice, as they co-teach a college course.



COSIA students communicating their understanding of science concepts with children through hands-on, inquiry-based activities.

COSIA COLLEGE COURSE. For this partnership, scientists and educators go beyond these typical roles, as the content material of the course is peripherally the expertise of both. That is, COSIA is a science course that focuses on pedagogy, and is co-taught by an ocean scientist and a science educator in an informal environment. COSIA uses ocean and climate sciences as the subject matter to introduce undergraduate and graduate student scientists to inquiry-based science pedagogy and engages them in learning and teaching science as they participate in outreach activities at ISEIs as part of their practicum. For research scientists, teaching COSIA draws on their expert knowledge of sciences, and encourages them to think about how they communicate this content based on how people learn. For informal educators, teaching COSIA utilizes their expert knowledge of learning and teaching in informal environments, and also requires them to articulate and share their knowledge with scientists and college students.

CREATING A NEW COMMUNITY. A community of practice is a group of people engaged in shared customs and habits, and is characterized by four activities: *joint enterprise* towards goals and purposes, *mutual engagement* in activities, development of a *shared repertoire* of habits and traditions, and the process of *negotiating meaning* in practice. In this process of crossing boundaries between communities of practice, scientists and educators are creating a new community where members inform and develop their professional knowledge and sustain their relationship beyond this individual course.

FINDINGS. Findings offer insight on collaborative relationships between scientists and educators, as well as universities and ISEIs, which have implications for ways in which we think about, and draw upon, all available resources to improve science literacy.

One scientist said: *I think the biggest benefit to [the scientist] is that a lot of times they are taught how to become a scientist but lose touch with how to present that science.* This is of particular benefit, as scientists' ability to communicate with the public is increasingly seen as a priority in scientific and policy domains.

According to scientists, teaching COSIA has provided them with expanding opportunities for future outreach work that are gaining increasing recognition for their importance in the professional development of the scientific community of practice: *We really need to be able to communicate well why our research is important, and it's not formally trained...we need it to teach in the future, for outreach events, grant proposals, and in order to summarize what we do.* The boundary crossing that scientists experience through COSIA also allows them to cultivate a network of contacts and resources within the education community of practice, focused on the application of ocean sciences research and content.

WHO IS IN THE NETWORK?



HOW TO JOIN THE NETWORK?

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