

# CSI for Coral Reefs: live web-broadcasts for high school students

COSEE Gears Follow-up Project

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For students living in inland states, exposure to the ocean environment and marine sciences is often limited. Exposure to scientific careers through interactions with researchers can spark interest and make science more accessible for these students. For my COSEE Gears follow-up project, I chose to create and present a series of live web-broadcasts for Idaho high school students. The first set of broadcasts “CSI for Coral Reefs”, were based on my path as a scientist, and ongoing coral reef research on Christmas Island in the Pacific.

## Gear 1 – Deconstruct

I chose to use “CSI for Coral Reefs” as the story arc to frame my scientific story. First, I introduced the background story (the importance of coral reefs, and the threats they face) and the characters (the colorful residents of the reef, including corals and their symbionts). Secondly, I discussed what it means for scientists to go out into the field – linking this process to CSI members going out to collect evidence. Then I talked about what scientists do in the lab – how we can use DNA from a drop of water to determine “who’s who” in the marine environment. Finally, I concluded with an explanation of how scientists work to put all the pieces of the puzzle together – using previous knowledge, field work, and lab work to understand what’s going on in the ocean (and so we can learn how to better protect it).

## Gear 2 – Understand

The students (10<sup>th</sup> grade Intro Biology) had very limited knowledge of marine biology and field-based science before these broadcasts. They had a basic background in biology, and were excited to learn about an ecosystem that seemed so far away. This topic was relevant, because it engaged the students and gave them a glimpse into the excitement of science careers.

## Gear 3 – Build

Each web broadcast was structured with a 20 minute PowerPoint presentation (with many pictures), followed by a 30 minute question & answer session with the students. The teacher gave the students a brief overview of coral reef ecosystems and coral symbioses the day before our broadcast, and students submitted questions to ask ahead of time. During the Q&A, I was able to answer the questions students submitted ahead of time, and also on the spot questions that they thought of as we went along.

#### Gear 4 – Broaden

This project would not have been possible without the enthusiastic support of the participating teacher, Debi Smith. We spoke on the phone multiple times before the broadcasts in order to ensure that the students would be prepared to learn, and that the material contained in the broadcast would be interesting and appropriate for their level. Additionally, I received support from Kristin Hunter-Thomson during the planning and development stages. Her support was immensely helpful both for logistical aspects, and in learning how to communicate my science to high school students.

In the future, I hope to expand to conduct more broadcasts at other schools in Idaho, and in other inland states. A while back, a presentation like this one helped me get interested in ocean sciences. I hope these presentations will do the same for the next generation of scientists.