

**Here are some examples of the types of things my students learned by looking at the posters and talking to the researchers. Each researcher was sent an email that said something like this:** “Hello! My students and I attended the 2002 ASLO/AGU Ocean Sciences conference at the Hawaii Convention Center last month. Several of my students were able to look at your poster, and I wanted to share with you what 14-year-olds learned from your research. Thank you for sharing your work with them!”

If the students spoke directly with the researcher, I thanked them for their time and patience with the students. Each email then contained the notes you see below on what the students said in their reports about the poster. Please notice that I especially included the comments where students indicated how appreciative they were about the time the scientists took and how well they could explain their work.

Benoit-Bird, Kelly and Christopher Kelley. Two New Submersible Techniques for Deepwater Fisheries.

- The camera uses lasers to get a good approximation of the length of the fish.
- “She was nice and patient and explained everything at high school level.”
- “They put their sub on the sea floor with a new closed-circuit, low light camera. This way the fish does its everyday thing without the light bothering them when they take the pictures.”
- “She is using her studies to help the depleted native Hawaiian fish, like Opakapaka and Ehu, to increase the populations. I think that is very important to us because it affects our ecosystem”

Connelly, Douglas. Geochemical Anomalies over the Knipovich Ridge: Evidence for Hydrothermal Activity.

- This project was about trying to find hydrothermal vents on the seafloor because there are many kinds of metals that fall to the bottom around vents. The metals are worth \$\$.
- He found 10 vents on a slow-moving plate (one with a ridge) that proved his hypothesis that slow plates can have vents too!
- “He was a very good presenter and was able to make his project easily understood.”
- “He must be very interested in his subject, because he talked to me for around 45 minutes! I would say that he was by far the best person that I interviewed.”

Johansson, Mona. Red Tides and Parasites.

- “Red tides” are actually dinoflagellates and are poisonous to some marine life and to humans. They are “tough” and can create a cyst around themselves to protect themselves from danger.
- There is a parasite that kills the red tides, which is a good thing for humans. They want to find out why the parasite is there sometimes and not at other times.
- “Ms. Johansson was an excellent presenter. She was the friendliest and most open scientist I talked to at the conference.”
- “She didn’t really seem like the 10,000 questions we asked bothered her either.”

Kellogg, Christina, et al. African Dust Microbes: An Inoculum for Coral Reef Disease?

- They studied how African dust is being blown across the Atlantic Ocean.

- It is a dust cloud the size of Spain and it is reaching coral reefs and has the same DNA in it as in coral fungus and disease. When she took samples of the dust, she found that one part of it was *Aspergillus sydowii* and it caused disease when exposed to healthy coral.
- The dust is made from soil and sand from the desert and each year there is half a billion to a billion tons of dust. “That is amazing!”
- “I think this was the most interesting poster; she was really nice and a good explainer.”
- “I thought that this exhibit was really neat and interesting.”
- “This poster was very interesting and she was good at explaining it to us at an understandable level.”

Kennedy, C.B., FG Ferris, and SD Scott. Bacteriogenic Iron Oxide Deposits from Axial Volcano, Juan de Fuca Ridge, North-East Pacific Ocean.

- They investigated the relationship between bacteria and Mid-Ocean Ridge iron oxide deposits near vents.
- Bacteria draw iron out of the water, making iron deposits (Iron gets stuck to the charged bacteria).
- He said that bacteria have a major role in cycling minerals.
- I learned that “the bigger the surface area, the more the bacteria will suck up.”
- “Mr. Scott was very nice. He gladly answered any questions I had, and if he didn’t know the answer, he was honest and explained that he hasn’t found it out yet.”
- “I liked Chris because he used analogies to help explain his experiment that I could understand, which helped me in understanding his experiment and what its purpose was. He was awesome!”
- “I had one question that I was too afraid to ask. If these iron oxide deposits on Mars do contain fossilized bacteria, what then? How has it changed man’s future?”

Nordstrom, Patty and Liz Goehring. Ridge 2000.

- I learned that chemosynthesis is when bacteria use chemical reactions to make energy. It is like photosynthesis without sunlight. The bacteria eat hydrogen sulfide, which is toxic to most animals.
- I learned that in a vent, “water seeps through, then is heated up by the magma, and since heat goes up, it comes back out through the vents. Since this water is a lot hotter than the bottom of the ocean floor, it makes a very thing black smoke then it comes out. These “volcanoes” can last a couple hundred years.”
- The amazing thing is the temperatures—the water around the vent is near freezing, but the smoke coming out is really really hot. How do organisms survive there? The answer is chemosynthesis. Other organisms have symbiotic relationships with the bacteria.
- “I found these two women to be the most helpful of all the people we visited. We spent at least a half-hour talking to them. They taught us a lot and gave me a new understand about why marine science is important. I think this field trip was a great idea, and I am very glad we went, because now I think marine science is a possible field I could go into!”
- This information led one student to do outside research on chemosynthesis. His overall conclusion was that he thought it was very interesting research and he had no idea there was life such as this at the bottom of the ocean. Thank you!