



Deep Earth Academy Takes Wirecast to the Bottom of the Sea for Educational Webcasts

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- Lisa Strong, Video/Multimedia Producer for Deep Earth Academy, IODP

The Background

Deep beneath the surface of the world's oceans is an environment easily as foreign as the moon, and almost as hard to get to. The sub-seafloor is one of the few frontiers left on earth that remains largely unstudied. Due to the challenges in reaching it physically, video documentation of deep-sea research is incredibly useful.

The International Ocean Drilling Program's (IODP) mission is to work with dozens of countries, sharing resources to explore the ocean floor. In the United States, the National Science Foundation (NSF) supports operation of the JOIDES resolution, a 470-foot ship that drills and collects core samples as deep as 9km under the ocean's surface.

The education and outreach arm of the drilling program in the U.S. is known as Deep Earth Academy, which is housed under the umbrella of the Consortium for Ocean Leadership. This group is interested in finding innovative ways to tell their story," says Lisa Strong, who served as the Video and Multimedia Producer for Deep Earth Academy on the Louisville Seamount Trail Expedition. "There is life in this deep, deep darkness, which is amazing, but it is microbial. It can be a harder 'sell' than, say, cute penguins."

The folks at Deep Earth Academy try to make that "sell" by embracing alternative learning techniques, employing art, music, social media tools, and new technology – anything that will help them connect with new audiences and tell the most engaging story possible. That willingness to experiment was put into practice on a recent expedition. IODP was attempting to learn more about a



planetary level system: examining hot spots that are not on the Pacific seismic zone known as the “Ring of Fire”, studying how they work and how they create volcanoes.

The Challenge

For each expedition, Deep Earth Academy hires an Education Officer, often a science teacher, who conducts Skype chats with classes that have signed up for a live interactive experience. The education officer has at his/her disposal a PC laptop, a webcam, a wireless headset, and the ship's Wi-Fi connection.

Typically, the education officer works alone as host and camera operator, walking around the ship pointing the webcam at the action. However, it's difficult for an individual to get through heavy doors holding a laptop, talk while climbing stairs, and keep the webcam relatively steady while listening to Skype audio in noisy environments. This person is also limited in where s/he can go given the time it takes to get around a 470-foot ship. The host is also encouraged to interview on-board scientists and crew and let the audience ask questions.

Often the hosts wanted to provide additional detail, include back-story that added context, or show a part of the process that wasn't happening at that moment or couldn't easily be shot. For instance, the team wanted to show the process of core coming up from the sea, how researchers removed it from the core-sampling tube, marked it up, split it, and handled it – all of which required pre-production and editing.

The Solution

Strong had used Telestream's Wirecast on a previous job. That application demanded something light, mobile, relatively straightforward and easy, but also very functional. In that case, Strong was able to replace roughly 800 lbs. of webcasting equipment with a simple laptop solution utilizing Wirecast.

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tion, EXP 330: The Louisville Seamount Trail, there was a teacher serving as education officer, and me, a video producer. With Wirecast he could assume host duties, and I could serve as producer, camera operator and switcher.” Strong installed Wirecast on her Mac laptop and used a USB/mini-jack audio converter to feed the audio into the Mac.

The Deep Earth Academy team pre-produced video segments shot on-board the JOIDES Resolution and easily incorporated them into the webcast, allowing the scientists to tell a richer and more complete story. The team was able to cut to microscopic shots of core samples: microbe fossils and beautiful thin sections of rock. Additionally, cutaways to the pre-produced video segments gave the team an opportunity to move to new locations on the ship without compromising the program's level of interest for viewers. “I even made a little Indiana Jones-style animated map in iMovie,” said Strong. “It started from the city the school was in, and flew around to where we were at in the southern Pacific Ocean – invariably on the opposite side of the globe. It was easy to pop this new clip into Wirecast before each show and personalize it for each webcast.”

The Results

Strong says the team was able to retain the charm of a low-tech live webcast while adding more visual material and support information and generally improving the flow of the production. With Strong as the dedicated camera operator and producer, her work was simplified and she was able to follow the host with a steadier camera hand. At a certain point in the webcast the host opened the doors as they stepped out onto the ship's outdoor catwalk; yes, indeed, they really were on a ship at sea.

The team found setup to be easy and functional – “even for non-techy teachers,” notes Strong. She has recommended a tidy, easy-to-use webcasting kit for all incoming Deep Earth Academy educators with Skype and Wirecast at its core.

For more information

Telestream, Inc.

www.telestream.net | info@telestream.net

JOIDES Resolution

www.joidesresolution.org | scooper@oceanleadership.org

Deep Earth Academy

www.deepearthacademy.org