

Ocean Gazing: Episode 20 The final frontier

Dwight Coleman: Inner Space Center, University of Rhode Island

<begin music>

Ari: Ready to get a little wet? I'm Ari Daniel Shapiro and this is Ocean Gazing, the podcast where we leap into the sea and then frolic in the salty abyss. <transition to Star Trek theme music> This time we're talking about something called "inner space."

Coleman: We define inner space as the deep oceans or anything within the Earth and the oceans that we cannot see.

Ari: That's Dwight Coleman. He's not the captain of the USS Enterprise as this Star Trek outer space theme music, and our last sonic stumper, might suggest. Instead, he directs the Inner Space Center at the University of Rhode Island. It involves two big visions: first, promoting and doing archaeology research in the ocean and second, something called tele-presence. <pause> Let's talk about the archaeology part first. <fade out music>

Bob Ballard's vision is at the heart of the Inner Space Center. Ever hear of him? <pause> Lemme give you a hint. <fade up beginning of "My Heart Will Go On"> Here, let's move into the song a bit. <skip ahead> Maybe you know who I'm talking about by now. But just in case, here's a clip from when Ballard was on the Colbert Report this past February.

Colbert: You are, as I said before, a renowned archaeological oceanographer. What does that mean?

Ballard: That means I'm interested in human history beneath the sea as well as the natural history.

Colbert: Now, you've gone out there to the area where very few people have gone and you found the Titanic.

Ballard: Yep.

Ari: <bring in "My Heart Will Go On" music softly> Just so we're all on the same page, this Céline Dion song was featured in the Titanic movie. Discovering and then researching shipwrecks like the Titanic, that's at the core of archaeological oceanography and the Inner Space Center. <fade out song> Here's Dwight Coleman again.

Coleman: And we work very closely with teams of archaeologists to explore shipwrecks with a primary focus on ancient shipwrecks and exploring deep-water trade routes.

Ari: Finding any shipwreck is like finding a treasure.

Coleman: I guess an analogy would be when I was a little kid and you have that excitement about Christmas morning, right? And sometimes you can't get to sleep or sometimes you wake up really early in the morning because you have so much excitement about opening presents. So you're not sure what it's going to be: you're coming in, you're about to discover something that's new and exciting.

Ari: So is your science like a professional Christmas?

Coleman: Exactly, yes, yes.

Ari: Given this analogy, you can probably understand why it's so disheartening when these shipwrecks end up getting abused by human hands. Coleman remembers one expedition to the Titanic in particular.

Coleman: Since Dr. Ballard found it about 20 years ago, another organization called RMS Titanic Inc. obtained the salvage rights to the ship. And they've returned and done, I think more than a dozen expeditions to the site where they're collecting thousands and thousands of artifacts from the site. And so, they've done some damage to the wreck itself by landing their submersibles on the deck of the Titanic, by going in and penetrating the wreck in areas, and doing accelerated damage to the site, more than what would be done naturally. The mast is now broken, the crow's nest is gone, the light and the bell are now gone. It's really quite tragic because Ballard left it in a pristine condition and really wanted to memorialize it as a gravesite. 1500 people died that night.

Ari: I called RMS Titanic Inc. for comment, but no one responded. On that expedition, Coleman and his team documented all the changes the Titanic's endured these last 2 decades – both natural and human-induced. And they put it all in a books series and a National Geographic article.

Coleman: And soon after we did that expedition, the United States signed a treaty to protect the Titanic and agree not to have any sites mount any expeditions from the United States to go there to do any salvage operations at the Titanic site.

Ari: And what makes this expedition and others like it even better, is that they're broadcast live to audiences all over the world, on the web. And that's what Coleman means by tele-presence.

Coleman: Using satellite telecommunication technology and high-bandwidth Internet connectivity to wire in ships at sea and really create a network of ships that

are exploring the world's oceans to shore-based facilities. It's changing the way we do our business. There's no doubt about that.

Ari: Alright, so here's an example of how it's changing the way Coleman does business. In 2000, Deb Kelley from the University of Washington made a startling discovery at an underwater mountain during one of her research cruises. The peak's the size of Mt. Rainier, but it's at the bottom of the Atlantic Ocean. It was teeming with life and decorated with these white limestone chimneys that got as tall as 200 feet. Deb Kelley was awestruck.

Kelley: This place that was incredibly magical: no one had ever predicted it. We ended up calling it Lost City.

Ari: Five years later, Dwight Coleman and Deb Kelley returned to Lost City. But there was a twist. Deb Kelley never left Seattle. Coleman and his team pumped data, video and audio from the bottom of the ocean onto the Internet and into Deb Kelley's lab, with, like, a 1-second delay.

Coleman: So there they were, calling the shots on the expedition, directing what mapping exercises to perform, directing what photographs to take, and directing what samples to collect, all the while watching every move we make on her monitors.

Ari: Why not just have Deb Kelley on the ship with you?

Coleman: You want to send the ship with a team of very capable engineers and scientists who can staff the ship to collect the data you want to collect. But you're not really sure what you're going to find so it's very difficult to have the correct experts on the ship at all times. So you wanna create this network through tele-presence so that you can tap in the experts as needed.

Ari: I mean, do you feel like this is part of a growing trend in where science is going, or because of the nature of this podcast, is it that I'm just talking to scientists that are doing this?

Coleman: Oh, I think there's really a revolution that's really ongoing or about to happen not only in ocean sciences but also in education.

Ari: Turns out that Coleman, Ballard and the Inner Space Center are reaching out to schools across Rhode Island. Like Smithfield Public Schools about 20 minutes outside of Providence. Coleman's worked with Smithfield to broadcast live video feeds of actual science from the bottom of the ocean directly into the schools. Here's Superintendent Robert O'Brien, on the phone.

O'Brien: Our kids were prepared for the broadcast. They not only were able to see it live, but they were able to talk to the scientists and ask questions and get answers

right away. It was just phenomenal. And I think just watching scientists at work had a tremendous impact on our students: to be able to actually hear them talking to each other and seeing what they're seeing at the same time. We're really trying to get our kids to get an understanding of science and transfer that information to new settings. I mean, this is the way our kids learn today.

Ari: You can tell the Inner Space Center's pushing a lotta new frontiers at once. The very notion of what it means to explore the ocean. How to engage future scientists by building relationships with schools. Coleman and his team are taking the bottom of the ocean, which can seem really far away, and bringing it to the classroom next door or the computer screen on your desk. From inner space to your space, in the blink of an eye.

<transition music: "I Gotta Feeling">

Ari: Ready for next time's sonic stumper?

<play sonic stumper, and then fade under next graph>

Ari: Alright, this is the last call! We're featuring your ocean stories on our next episode. So think of a story you have about the ocean: like the time that the fish you caught wasn't exactly a fish..., or the time you forgot your bathing suit at home and went wading into the Atlantic off of Cape Hatteras in a 3-piece suit and a bowtie. It can be *anything*. To record your story, go to our website: coseenow.net/category/ocean. Once you're there, you'll see the directions, and some pretty cool pictures from the Inner Space Center. We've also got a clip of Dwight Coleman talking about mummified shipwrecks in the Black Sea.

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Thanks to Rhonda Miller, Gail Scowcroft, Janice McDonnell, Jim Yoder, and Sage Lichtenwalner. Our intro music's by Evan Sanders. That's all!

Coleman: Thanks again, Ari. Bye.

<fade up sonic stumper and then fade out>