

Ocean Gazing: Episode 8

The glide of a lifetime: Part II

<begin music>

Ari: You're back for more! You're listening to Ocean Gazing, the podcast where we dive into the ocean and encounter its marine majesty. We'll pick up where we left off in our last episode. Here's Scott Glenn.

Glenn: They'll tell you that the surface of Mars – that we know more about than the bottom of the ocean. We're still exploring this ocean – we still have the most unexplored piece of the planet in the ocean and we're the water planet!

Ari: Rutgers University oceanographers Scott Glenn and Oscar Schofield are passionate about creating the next generation of ocean explorers by introducing their students and the public to the wonders of the sea. Today, they'll share their deep commitment to education and why they feel it's going to help ocean science in the long run.

And, one of our listeners submitted a guess for the last sonic stumper. Stay tuned to hear if she's right!

<fade music up; music ends>

Ari: Scott Glenn and Oscar Schofield are all about collaboration, and they've been that way for a long time. Schofield explains.

Schofield: When we were first starting up the observatory in the late 1990s for ocean forecasting experiments, we wrote our proposal and we had 10 investigators on our project. It was a big project. By the time everyone else found out what we had going on in terms of observatory data, the experiment grew to be over 200 scientists, 13 ships, 4 planes. Most of them were completely unrelated to our project.

Ari: They were unrelated, but these scientists were eager to be part of a project that was gathering data from the ocean as quickly and as comprehensively as the kind that Glenn and Schofield like to cook up. And they weren't just keeping all that in the lab.

Schofield: If you go into a kids' classroom and they say, "Draw a picture of an ocean scientist," they'll draw a white guy, old, with glasses, bald. I wasn't gonna say anything. Scott's thinning.

Glenn: They draw me.

Schofield: Maybe wearing a labcoat, usually got a beard. The oceanographers tended to be those who would go out on the ships. Not everyone can go on the ships. By getting the data directly to the World Wide Web, anyone can be an oceanographer in real time. And lots of people care. We started putting data up on the web in the early 90s. Scott had gone to some talk.

Glenn: It was a great meeting. It was Keith Bedford from Ohio State. He came in here and he told us this thing called the World Wide Web. And we all wrote down in our notes, "World Wide Web." And he put his data on it and he got 30 hits a month. And we go, "Whoa! 30 hits!" with an exclamation point. And we were amazed and we said, "Oh, this is how we're gonna do it."

Schofield: So data starts going up. Satellite imagery starts getting posted. That was the technology that was most mature in the beginning of the observatory. At some point, it's like, well, let's just see if anyone's looking at the data. And yeah, there's lots of people looking at the data. Lots and lots of people. Thousands of people a month are looking at the data. It's like, there can't be that many oceanographers. And most of them are the general public. They're accessing the data on the web. And then we start getting emails from people all over the eastern seaboard. The satellite imagery we collect spans from the Gulf of Mexico up through the northeast United States.

So soon we start: if the website goes down, we have fishermen in Florida calling us. "Get it up! You're killing me! We need to go! We're going out tomorrow. Get the data back up!" You get people from the yacht's clubs who are gonna race to Bermuda. They need to know ocean conditions. It's central to what they want to do with it. And so collaboration becomes more than just a bunch of nerds obsessing about some interesting little problem. Everyone has needs for the ocean: the general public, the coast guard, the weather service. And that is what I think will change oceanography dramatically and it'll put the ocean more into people's living rooms. And then, they're gonna understand why it's so important to understand the oceans and manage the oceans. Because all this data streams directly onto the web, you start changing the definition of an oceanographer.

Ari: And the time couldn't be any riper for including lots more people in that definition.

Glenn: The population's growing. People need water. The weather is changing because of climate change. So the pattern of droughts and floods is changing, the weather is becoming more extreme. How do we get their food? How does the changing weather patterns affect the agriculture? For energy, how do we get the renewable energy resources? How do we start getting energy from the waves? From the winds at sea? That's what we're most concerned about: how do we get this generation trained to handle that? We're the ones that started this. Kind of left them a bit of a mess. And for that, we'll need a whole new generation of people and can we train 'em fast enough and start building this network of young people?

Ari: And so Glenn and Schofield are working hard to inspire young people fast. They bring them into the very heart of their real time research engine. It's called the COOL room, which stands for Coastal Ocean Observation Lab.

Glenn: By being in this room, we can place you at sea anywhere in the world.

Ari: The COOL room was modeled after the NASA control center. Rows of large, hi-definition TVs cover most of the walls. Colorful images showing wind speed, the direction of currents and water temperature dance across the screens. A round table with rolling chairs encourages collaborative conversations. The COOL room is command central.

Schofield: So this is the control center for all the technologies we've been talking about. It's a place where all the data's collected.

Glenn: This is the communication center. When you're sitting here, this is the place that if Oscar's out on the boat, this is the place that I am.

Ari: The COOL room is just one place that Glenn and Schofield use as a classroom. They teach their students how to use real time data to solve real world problems. I visited one of these classes, and walked with the students from campus down to the dock.

<fade up student chatter>

Ari: I'm Ari.

Patti: Patti.

Ari: Hi, Patti. Nice to meet you.

Patti: Nice to meet you.

Ari: So what class is this?

Patti: This is marine data analysis. Half the class is going out on the boat today and they're gonna be collecting data using different instruments. And then the other half of the class gets to see where the boat is and see the data back in the lab in the COOL room. It's a hands on class, which is nice. You get to actually not only learn about the equipment, but use it, which is the point of going out on the boats. And you don't get that experience in a lot of big lecture hall classes. It's nice to actually get to do stuff, not just hear about it.

Ari: Right, 'cause that seems to be the point of this class.

Patti: Yeah, it is: to get you excited about it and to get you into research that you want to do it too.

<cross-fade student chatter on the road with chatter on the dock>

Ari: On the dock, the students helped Glenn and Schofield get the Rutgers boat ready. It was Schofield's turn in the COOL room and Glenn's turn out on the boat.

<fade up laughter aboard the boat and boat noise>

Glenn: Alright, see you in four hours.

Ari: This noise was our last sonic stumper.

Whitmire: This is Amanda Whitmire calling from the oceanography department here at Oregon State University. And, I wanted to throw my hat into the ring for the sonic stumper.

Ari: Alright, Amanda! Whaddaya got?

Whitmire: Sounds to me that it's a boat motor idling. Anyhow, if I'm even close, that would be a lot of fun.

Ari: Close? You're spot on! It's the idling of the vessel that Glenn and his students were taking out to sea. Terrific work, Amanda! Thanks for calling in!

Whitmire: Talk to you soon. Bye.

Ari: The oceanography that Glenn and Schofield do is about sharing their excitement about the ocean and spreading their joy of discovery and exploration. They're developing some of the most state-of-the-art technology for studying the ocean that's out there. And then they're turning around and giving control of that technology right over to their students. Glenn's reasoning behind this is rather personal.

Glenn: Well, I love going to sea. But often to go to sea, you gotta spend 6 weeks, a month at a time away from your family. And I started doing that when I had kids. And my daughter had to write a story in 2nd grade about how the ocean impacts their life. And what she did is she wrote a story about how it takes me away from her, how I go to sea for a month at a time and I'm gone and the ocean really affects her life. And so I hung that story on my bulletin board, and I see it everyday. And because of that, that's one of the reasons I build ocean observatories. I still love going to sea, but I also have to be there for my family. And so this is a way to be at sea from anywhere, but still be home in time to see them in time for dinner, to see whatever plays they have and all that. Because of observatories, a lot more people can be oceanographers.

Ari: By working on technologies that do this – that create more oceanographers – Glenn gets to spend more time with his daughter. The ocean's not taking him away from her anymore. Rather: with these observatories, Glenn and Schofield are able to be at sea even when they're at home. They get to be really good scientists and really good dads, at the same time. And that kind of oceanography's bound to make a lot more sense to the next generation.

<fade up transition music>

Ari: Okay, onto this episode's sonic stumper.

<fade up sonic stumper>

Ari: Try to figure out what it is, and *where* it is. <pause>

Send us your guess like Amanda did.

Whitmire: Hi, Ari.

Ari: To do so, visit our website: www.coseenow.net and click on the podcast link. Online, you'll also find videos of Glenn and Schofield with their gliders, in the COOL room, and on the dock.

<fade up outro music>

Ari: This podcast is supported by the National Science Foundation and is produced by the Centers for Ocean Science Education Excellence. Thanks to Jim Yoder, Janice McDonnell, Sage Lichtenwalner, the Rutgers marine data analysis class and the Earth Negotiations Bulletin. Evan Sanders composed our music.

See you in two weeks!

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