

Ocean Explorer: Michael Lombardi

Real-World Geography. Explore Cool Careers.

For the complete profile with media resources, visit:

<http://education.nationalgeographic.com/education/news/real-world-geography-ocean-explorer/>

BY STUART THORNTON

Monday, April 8, 2013

Michael does scientific diving work for a variety of institutions, including the American Museum of Natural History, the Woods Hole Group, and the University of Rhode Island. One of his areas of focus is mesophotic coral ecosystems, which are deep-water coral reefs. One of the places Michael frequently dives is a 122-meter (400-foot) deep reef along Exuma Cays in the Bahamas.

A National Geographic Society/Waitt Grantee, Michael has developed an underwater portable habitat, which allows divers to safely avoid decompression sickness in a more comfortable environment.

Michael is also the founder of Ocean Opportunity, a grass roots, nonprofit organization engaged in ocean-related education and outreach activities.

EARLY WORK

Michael grew up in Seekonk, Massachusetts, a short 16 kilometers (10 miles) from Narragansett Bay.

"I spent a lot of time fishing with my dad and my brother, so I always had an interest in the water," Michael says.

In fact, Michael's father may have helped instill his son's passion for the ocean.

"My dad was in the Navy during Vietnam, so he had some sea stories along the way that surely played a role," Michael says.

While still in high school, Michael took a dive course at nearby Brown University in Providence, Rhode Island. It wasn't smooth sailing!

"I had a really hard time with the dive class," he says. "I struggled with the swim test. I struggled with putting my face in the water for the first time. I struggled with the whole thing. I was just convinced for reasons unknown at that point that I needed to be a good diver, because it was going to be a useful tool in my line of work."

The hard work paid off. After graduating from the University of New Hampshire in Durham with a degree in marine biology, Michael went to work immediately.

"After college, because I had so much dive experience at that point, I was the go-to person for challenging dives in the science community," he says.

MOST EXCITING PART OF YOUR WORK

"The most exciting thing is being in a totally new place for the very first time—the first time for me, but also the first time for

anybody. Some of these deep reefs have never been seen by humans firsthand.”

MOST DEMANDING PART OF YOUR WORK

Michael says the “overall conditioning it takes to be proficient enough to do this kind of exploration” remains challenging—and it’s more than being in good physical shape. A diver exploring the deep ocean must be in tune with technology and be psychologically centered.

“There is zero room at all for error,” he says. “There is zero room to be complacent.”

HOW DO YOU DEFINE GEOGRAPHY?

“I see geography as the study of people, places, and things—and how people, places, and things work together as a system in a particular area.”

GEO-CONNECTION

Michael hopes his diving on the deep-water reefs of the Bahamas will help alert others to a whole geographic region that is unexplored.

“What it tells us is not only is the world not flat, but there is a heck of a lot of blue out there!” he says. “It’s very, very deep, and there’s a whole other dimension that we need to start paying close attention to.”

One geographic tool Michael frequently uses in his work is the global positioning system (GPS).

“GPS is very important on the exploration front and in my day-to-day work,” he says. “It helps us map out work sites and identify new work sites or something that is lost underwater.”

Google Earth is another geographic tool Michael is excited about. “Because it is so user-friendly, it is something that everybody on the exploration side should be leveraging . . . It’s such a good conduit to bring people into our world from remote places,” he says.

SO, YOU WANT TO BE AN . . . OCEAN EXPLORER

Michael suggests students take an interdisciplinary approach to their studies.

“While you might say you want to be a marine biologist, being a marine biologist doesn’t mean that you are just going to be studying sharks or dolphins,” he says. “You are going to be working closely with technology people and closely with geography people and closely with educators.”

Michael sees one particular field that will be essential to the future of ocean exploration: engineering.

“In my opinion, in terms of future careers, I really think there is going to be a shortage of engineers that have a good handle on exploration and exploration-related technology,” he says.

VOCABULARY

Term	Part of Speech	Definition
complacent	adjective	pleased or satisfied with yourself or your situation.
conduit	noun	method or means of communication.
coral reef	noun	rocky ocean features made up of millions of coral skeletons.

decompression sickness	<i>noun</i>	serious condition resulting from gases forming tiny bubbles in the bloodstream as a body adjusts to a major change in atmospheric pressure. Also known as DCS, divers disease, and the bends.
ecosystem	<i>noun</i>	community and interactions of living and nonliving things in an area.
engineering	<i>noun</i>	the art and science of building, maintaining, moving, and demolishing structures.
geography	<i>noun</i>	study of places and the relationships between people and their environments.
Global Positioning System (GPS)	<i>noun</i>	system of satellites and receiving devices used to determine the location of something on Earth.
grass roots	<i>adjective</i>	made up of people who are not socially or economically elite and do not represent the government.
habitat	<i>noun</i>	environment where an organism lives throughout the year or for shorter periods of time.
interdisciplinary	<i>adjective</i>	having to do with more than one academic subject, or discipline.
marine biology	<i>noun</i>	study of life in the ocean.
nonprofit organization	<i>noun</i>	business that uses surplus funds to pursue its goals, not to make money.
technology	<i>noun</i>	the science of using tools and complex machines to make human life easier or more profitable.

FOR FURTHER EXPLORATION

Video

- National Geographic On Assignment: Portable Underwater Habitat Boosts Extreme Dives

Websites

- Ocean Opportunity
- National Geographic Explorers: Michael Lombardi



© 1996–2014 National Geographic Society. All rights reserved.