PANEL III:

OCEAN EXPLORATION
Welcome back, and welcome to our panel on Ocean Exploration—one of my favorite topics. For the last 10 years, it has been both my challenge and my good fortune, to direct a United States program which is part of NOAA, the federal agency responsible for most of the ocean and atmospheric activities in the United States. My program, NOAA’s Undersea Research Program, is dedicated to research under the surface of the sea. As a result of my experience with this program and the nature of the knowledge identified through the work we do, I have become increasingly aware of just how much there is to learn about what lies beneath the surface of the waves.

The scope of the unknown in the oceans remains enormous. More than 90% of the ocean has yet to be visited by humans, either in person or remotely, and has not been studied. This includes major features such as the 50,000 km of mid-ocean ridge crest that spans the entire globe, the 8,000 km of deep sea trenches, the more than 30,000 seamounts and the water column itself. The oceans are massive. Most of this mass is cold, dark, and deep. The oceans are home to 99% of all living things on earth.

We have mapped more of the moon and its far side than we have of the ocean floor. Why is that? The ocean is opaque. We cannot see through its waters the same way we see through the atmosphere to study the moon. The ocean is a harsh and hostile environment for those of us who are accustomed to breathing air and living in moderate climates. The same tools and technologies that enable us to study the moon are not as useful in studying the oceans.

---

1 Director, Undersea Research, U.S. National Oceanic and Atmospheric Administration