

## **Title: Marine Arctic 2020: At the Intersection of Science, Education, Policy and Environment**

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#### **Abstract:**

The world has not had a "new ocean" for 500 years. As the Arctic now opens up and becomes more ice-free, we are in the position where we lack the geopolitical, economic, military and scientific systems to best understand this new environment. In this visit to WHOI, I will cover the basic impacts of climate change for marine polar regions, explore the scientific issues involved, and discuss the relationships between public understanding of the issues and scientific policy. How do we conduct science in such a vast area? What happens to the animals that need ice for their survival? How do you convince someone in the mid-latitudes that the polar regions are even important, or that climate change is a vast conspiracy? From biochemistry to policy, these are important questions that require a multi-faceted approach to our "new ocean".

#### **BIO:**

Dr. Castellini came to the University of Alaska Fairbanks Graduate School in January 2015 after being on the faculty of the UAF School of Fisheries and Ocean Sciences for over 25 years, and most recently their Dean. He was the founding Science Director for the Alaska SeaLife Center in Seward, the Director of the SFOS Institute of Marine Science, and then Associate and Dean of SFOS. He was the Dean during the construction and launching of the new UNOLS-NSF-UAF research ship the R/V *Sikuliaq*.

During his research career, his projects focused on many different aspects of marine mammal biology and medicine. Some of these included nutritional physiology of harbor seals and Steller sea lions in Alaska as related to their population declines and to the survival of their pups. Other projects included studies on lipid metabolism in marine mammals, the biochemistry of contaminants, metal chemistry, high pressure physiology and even sleep patterns in seals. These programs were conducted in the field and around the world from the Arctic to the Antarctic. He chaired or co-chaired 16 PhD or MS students and has been a committee member on dozens. Many of his students are now successful faculty, agency scientists, veterinarians, and underwater photographers.

Dr. Castellini has participated in large public outreach programs discussing climate change, the Arctic, Antarctic and how animals at those locations are critically dependent on sea ice. Some of these programs travelled the country working with students and the public (NSF Polar Palooza) and others focused on Alaskan needs (NSF-COSEE). He even has part of an island in the Antarctic named for him!

