



By way of introduction, Isaac Asimov once said that science gathers knowledge much faster than society gathers wisdom; I think that is pretty appropriate in view of our discussion about the climate debate. The Navy's position is this: There is broad scientific consensus on global warming, on the fact that global warming exists, and on the changes that are currently happening and projected to happen with our climate. If you look at the history of this debate, the reality is that the consensus is so strong that it really should not even be regarded as a debate. Back in the 1600s, there was a debate as to whether the Earth revolved around the sun or vice versa. I think the scientific consensus is established today, and there is really little discussion about that fact. The same should be the case for the climate discussion. Climate change is occurring, and the vast majority of scientists agree and view it as such, so the Navy does not really respond to much of the noise that we hear.

With regard to research, one of Task Force Climate Change's goals is reducing the current uncertainties in climate changes and in the projections regarding those changes, as well as identifying potential engineering solutions that might be required to adapt to those changes. Over the past 2 days, we have heard about some of the significant issues that affect maritime forces with regard to climate change. For example, Rear Admiral David Titley described

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how the melting of the ice sheets in Greenland and Antarctica is contributing to sea-level rise. We need to know when and to what extent that sea level will affect our installations. So, that is certainly an area of research interest for the Navy. There is also the question of timing with respect to the reduction in Arctic sea ice.

Yet another area of interest for us is better understanding the relationship between climate change and storm intensity. Earlier, Rear Admiral Titley showed data for what is called the average cyclone index; based on such information, there does not appear to be a global consensus on what storms are doing. The often-cited connection between climate change and increasing storms appears a little fuzzy. So, that is clearly an area where additional research could prove beneficial.

There are many other areas of potential interest as we will soon discover from four very distinguished, accomplished, and very capable speakers who are established leaders in the federal government with regard to climates and environmental science and applications.