



# CLIMATE, PEOPLE, AND THE ENVIRONMENT PROGRAM SEMINAR SERIES



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## The Arctic in Rapid Transition

Observations in 2016 showed a continuation of long-term Arctic warming trends which revealed the interdependency of physical and biological Arctic systems, contributing to a growing recognition that the Arctic is an integral part of the globe, and increasing the need for effective environmental intelligence gathering. In a year of unprecedented, record setting conditions, the average surface air temperature ending September 2016 was by far the highest since 1900, and new monthly record highs were recorded for January, February, October and November 2016. After only modest changes from 2013-2015, minimum sea ice extent at the end of summer 2016 tied with 2007 for the second lowest in the satellite record. Spring snow cover extent in the North American Arctic was the lowest in the satellite record and in 37 years of Greenland ice sheet observations, only one year had earlier onset of spring melting than 2016. Furthermore, the Arctic Ocean is especially prone to ocean acidification, due to water temperatures that are colder than those further south and the short Arctic food chain leaves Arctic marine ecosystems vulnerable to ocean acidification events. On land, thawing permafrost is releasing carbon into the atmosphere. The impacts of the persistent warming trend over the last 30 years are clearly evident in the land and ocean environments and are cascading outward to effect weather patterns across the Northern Hemisphere. This presentation will discuss the current state of the Arctic environment and the impacts that rapidly changes conditions have on ecosystems, commercial development, and national security.

**Tuesday, March 14, 2017 1:00 pm**

**AOSS Building, Room 811**

**1225 W. Dayton St.**

Please join us for coffee at 12:45 in Room 853