

**ATS/CIRA Colloquium**

**Julienne Stroeve**

Visiting CSU ATS from the National Snow and Ice Data Center

**Sea Ice and Consequences of an  
Ice-Diminished Arctic Ocean**

Hosted by Dave Randall

**Thursday, December 13, 2012**

**ATS room 101; Discussion will begin at 3:30pm  
Refreshments will be served at 3:00pm in the weather lab**

The Arctic is currently undergoing rapid environmental changes. Over the past few decades, the Arctic has warmed at about twice the rate as the rest of the planet. As a result, significant changes are happening in the Arctic sea ice cover, with potentially large implications not only regionally but also for the global climate. Arctic sea ice is an important regulator of the exchange of heat and moisture between the atmosphere and the ocean. The presence of the sea ice cover insulates the relatively warm ocean from the colder atmosphere and because of its high reflectivity, its presence helps to keep the northern high latitudes cool by reflecting a large portion of the sun's energy back to space. Sea ice also exerts a strong influence on global atmospheric and oceanic circulation. Because of the Earth's orientation relative to the sun, the equator receives more incoming solar radiation than the poles. The inequality in the amount of solar radiation received gives rise to a temperature gradient that drives the circulation of air in the atmosphere that transports heat from the tropics to the poles.

This talk discusses recent changes happening to the sea ice cover, the factors responsible for these changes, what climate models project for the future and our current understanding of the climatic impacts of continued sea ice loss.

Link to colloquium videos and announcement page: <http://www.atmos.colostate.edu/dept/colloquia.php>