



Dr. Christopher Sabine

*NOAA Seattle - Pacific Marine Environmental
Laboratory Director*

will speak on

“Our Evolving Understanding of the Global Carbon Cycle and how it Drives Climate Change and Ocean Acidification”

**November 7th, 2013 at 5 p.m. in Lecture Hall 3
The Evergreen State College
Free and open to the public**

Abstract: Understanding of the Earth’s carbon cycle is an urgent societal need and a challenging intellectual problem because of its intimate connection with the Earth’s climate system. The impacts of human-caused changes on the global carbon cycle will be felt for centuries to millennia. The ocean plays a major role in the global carbon cycle through the uptake and redistribution of atmospheric carbon dioxide. Since industrialization, the ocean has reversed its role from a small global source of CO₂ to the atmosphere to a major atmospheric CO₂ sink. This role reversal has resulted in measurable ocean chemical changes, including a decline in seawater pH, termed ocean acidification. Increasing acidity and related changes in seawater chemistry can affect reproduction, behaviour, and general physiological functions of many marine organisms and lead to significant shifts in marine ecosystems. A range of field and laboratory studies suggest that impacts of acidification on some major marine organisms may already be detectable and will likely increase in the future. Both the changing ocean chemistry and potential changes in marine ecosystems suggest that the oceans are undergoing significant changes due to rising CO₂. As the world begins to address the issue of global climate change we need to recognize that temperature and sea level rise are not the only concerns, but that the rising CO₂ is having a direct impact on the environment and its ecosystem services.

Dinner with the speaker at 7.00 p.m. at the Budd Bay Café in Olympia
www.buddbaycafe.com

RSVP for dinner reservations only by 11/1/2013 at
bopegedd@evergreen.edu or (360) 867-6620

Park in Lot B (cost is \$1.25) for easy access to the Lecture Hall building
Driving directions to Evergreen is available at www.evergreen.edu/tour/gethere.htm

**Sponsored by: The “Earth Matters: Geology and Chemistry” Program and The
Evergreen Chemistry Club**