

**ATS/CIRA Colloquium**

**Dr. Shane Murphy**

Visiting ATS from the University of Wyoming Dept. of Atmospheric Science

**Reducing Uncertainties in Two Significant Climate Forcers:  
Biomass Burning Emissions and  
Methane Leakage from Oil and Gas**

Hosted by Jeff Pierce and Emily Fischer

**Friday, September 26, 2014**

**ATS room 101; Discussion will begin at 11:15am  
Refreshments will be served at 10:45am in the weather lab**

The leakage rate from new oil and gas development in the U.S. is currently a matter of intense debate because the leakage rate affects how beneficial, from a climate perspective, switching from coal to natural gas is. Black carbon, for which biomass burning is the largest global source, is thought to be one of the most important anthropogenic emissions for heating the climate, perhaps second only to carbon dioxide.

This talk will delve into recent research on both of these topics. Recent measurements of basin-wide and individual-well methane leakage rates in the Upper Green River Basin of Wyoming, the 3<sup>rd</sup> largest gas-field in the U.S. by proven reserves, will be presented. Results from a recent study of biomass burning emissions from a wide range of globally relevant fuels, entitled Flame-IV, will also be discussed. Flame-IV results demonstrate that brown carbon is a more significant contributor to solar-absorption that previously appreciated.

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