



**ATS/CIRA Colloquium**

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**Air quality impacts of oil and natural gas extraction**

**Hosted by Scott Denning**

**Friday, September 25, 2015**

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

Natural gas, crude oil, and natural gas liquids are major fuel sources in the US, and extraction of these resources has been rising substantially since the mid 2000's. This activity is associated with a range of possible environmental issues, including air quality impacts on local, regional, and global scales. Field observations of air chemistry are crucial in order to understand the extent and causes of these issues, and to develop mitigation strategies.

The NOAA ESRL tropospheric chemistry group has conducted a number of field studies to quantify atmospheric emissions from various oil and natural gas producing regions of the U.S., and to understand the chemical transformations of these emissions in the atmosphere and their contributions to ozone and particulate formation. This talk will provide an overview of this research, including ground measurements during the Uintah Basin Winter Ozone Studies in Utah from 2012-2014, ground measurements along Colorado's Front Range, and P3-Orion aircraft measurements over oil and natural gas basins during the SENEX 2013 and SONGNEX 2015 campaigns. Instrumentation and measurement approaches, major findings, and important unresolved questions will be discussed.

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