

****Please note the special date and time****

ATS/CIRA Colloquium

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**Toward an improved understanding of the role of
surface-atmosphere exchange in climate services**

Hosted by Eric Maloney

Thursday, March 31, 2016

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

The ongoing climate emergency of 2016 emphasizes ever more strongly the central role of humans in the climate system. Many of the climate changes that we are making involve the exchange of trace gases, water, and energy between the land surface and the atmosphere. It is our responsibility to understand these processes. Here, I address the ability of surface-atmosphere exchange measurements to help reduce major uncertainties in our understanding of anthropogenic radiative forcing, namely the role of trace gases and aerosol/cloud interactions. Following a brief overview of the current state of the eddy covariance system in Earth system science and ecological research, I will present case studies involving surface-precipitation feedbacks in the Amazon and the impacts of land management to summertime climate in the northern North American Great Plains. (Initial) results will demonstrate the potential for ‘win-win-win’ management strategies that may be beneficial to conservation, economic returns, and regional climate such that these ‘climate services’ can improve our stewardship of the planet. The window of opportunity for beneficial regional climate services may be closing given global temperature trends, but creative solutions to our ongoing climate crisis are imperative to minimize the impacts of dangerous climate change.

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