



## UNLOCKING LAKE ONTARIO'S SNOWY SECRETS

Scientists and students from across the country will converge along the shores of Lake Ontario during December 2013 and January 2014 to understand better the atmospheric conditions and controlling mechanisms responsible for extreme snow accumulations across the region each winter. The project is called OWLeS (Ontario Winter Lake-effect Systems) and will utilize a network of specialized weather instrumentation, including an instrumented research aircraft, three Doppler on Wheels (DOW) mobile radars, several weather balloon sounding systems, a vertically pointing radar wind profiler, and other instrumentation to study the interior workings of lake-effect snow storms in unprecedented detail. Although lake-effect snow storms occur over all of the Great Lakes, the region of New York adjacent to Lake Ontario experiences some of the most intense snowfall events, with average annual snowfall amounts of over 100 inches. Certain locations, such as the Tug Hill Plateau, can receive upward of 250 inches/year. But, lake effect snow events are not limited to the shores of Lake Ontario. The New York State Finger Lakes region also can experience lake-enhanced snowfall and the complex interactions between the local environment and the far-reaching influence of Lake Ontario can significantly impact the amount and location of snow bands. As the snow begins to fall, scientists and students will be heading out to collect data to better understand lake-effect snow processes, which will lead to increased predictability of, and preparedness for, these events.

Some of the key questions scientists will investigate during OWLeS include:

- What environmental factors and internal processes have the greatest influence on the amount of snowfall and location of snow bands over and near Lake Ontario?
- How do the other Great Lakes affect the amount of snow that falls near Lake Ontario?
- When does thundersnow occur? Are convective snow events more likely to produce more snow?
- How does the interplay between wind circulations and cloud processes produce long-lived snow bands persisting far downstream of open water?
- What processes and interactions are essential to capture in the numerical models in order to forecast accurately the snowfall amount in, and persistence of, these events?
- How do lake effect snowstorms evolve as an air mass progresses over multiple stretches of open water and intervening land?
- How does the local terrain influence the strength and longevity of these systems?

OWLeS is funded by the National Science Foundation (NSF) and is a collaborative effort among nine universities and one non-profit organization. Participants will come from across the country from: University of Wyoming (UW), University of Illinois, University of Utah, SUNY Oswego, Hobart and William Smith Colleges, Millersville University, Penn State University, University of Alabama in Huntsville, SUNY Albany, and the Center for Severe Weather Research (CSWR).

***Media and the community are invited to the Penn Yan Airport from 10:00 AM to 1:00 PM EST on 4 December to tour the NSF-sponsored Wyoming King Air and the DOW mobile radars, and the Mobile Integrated Profiling System, and meet with the scientists and students involved in the OWLeS project.***

### **Media Contacts:**

Cheryl Dybas, NSF, 703-292-7734, [cdybas@nsf.gov](mailto:cdybas@nsf.gov)  
Scott Steiger, SUNY Oswego, [scott.steiger@oswego.edu](mailto:scott.steiger@oswego.edu)  
Karen Kosiba, CSWR, 720-304-9100, [kakosiba@cswr.org](mailto:kakosiba@cswr.org)  
Ron Podell, UW Public Relations, 307-766-2929, [rpodell@uwyo.edu](mailto:rpodell@uwyo.edu)

### **Related Websites:**

<http://www.eol.ucar.edu/projects/owles/>  
<http://www-das.uwyo.edu/~geerts/owles/>  
<http://owles.org>

### **Information about the NSF facilities:**

Wyoming King Air: <http://www.atmos.uwyo.edu/n2uw/>  
Doppler on Wheels (DOW) Mobile Radars: <http://cswr.org/>



University of Wyoming King Air.



DOW Mobile Radar.