DOW Network In Education

Streamlined NSF Request Process

Center for Severe Weather Research

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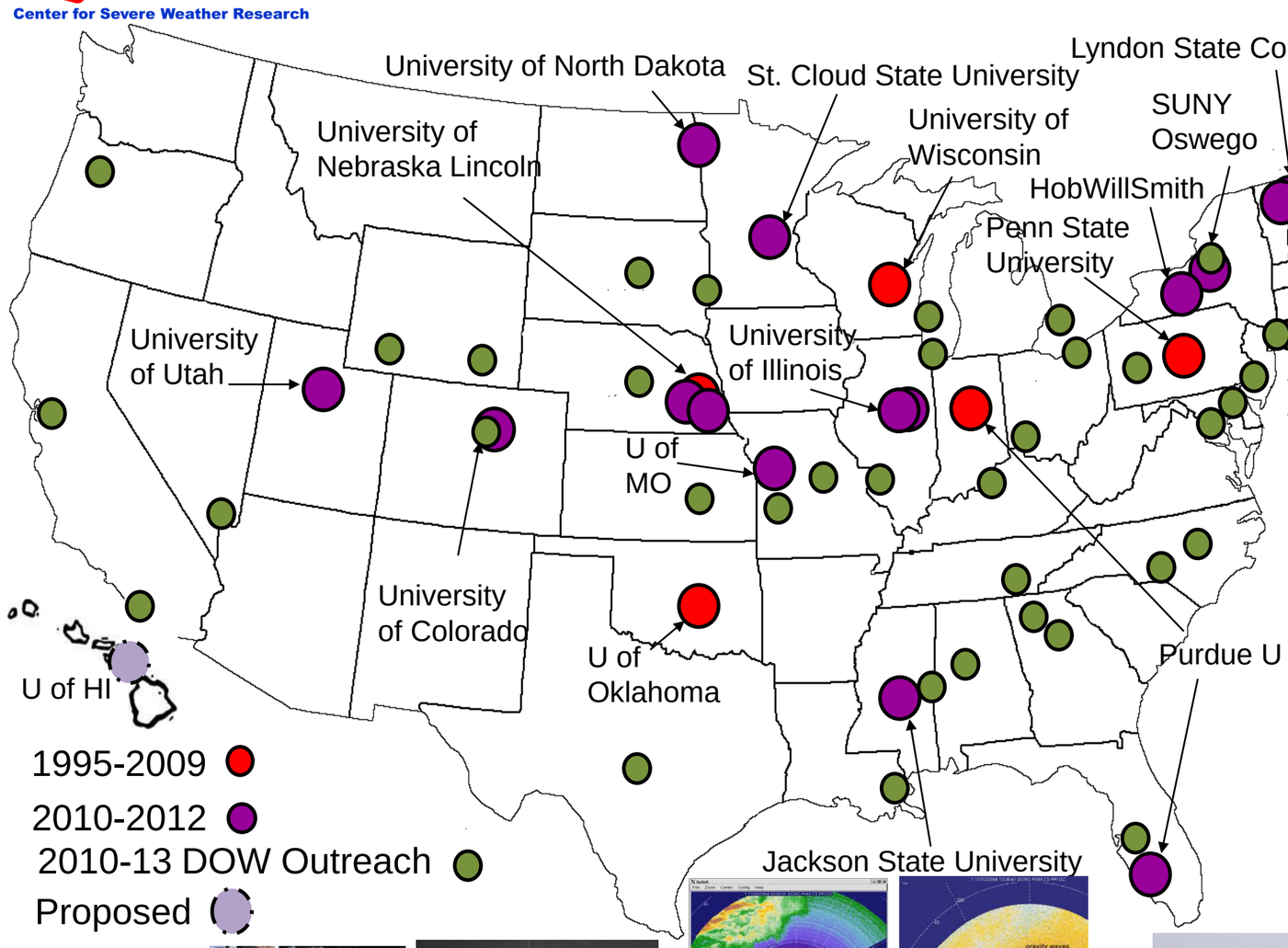
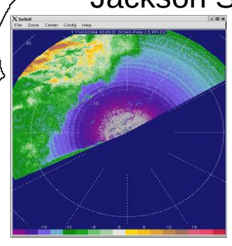


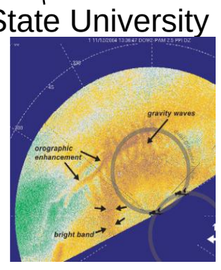
DOWs deploy to universities to support radar meteorology education.

Students design and conduct experiments and analyze DOW data.

Instructors and students are also exposed to in situ instrumentation used in the field.

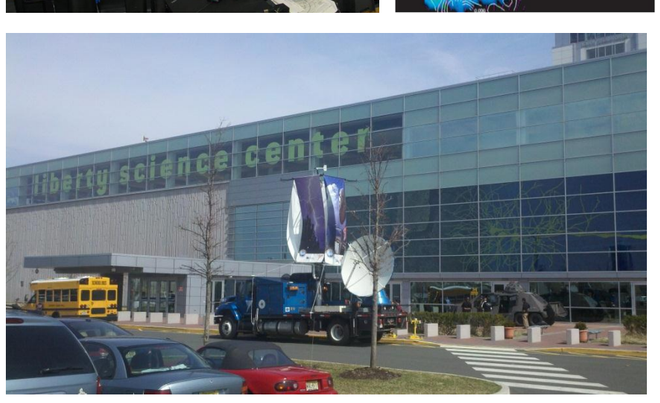
Projects range in length from one to three weeks.

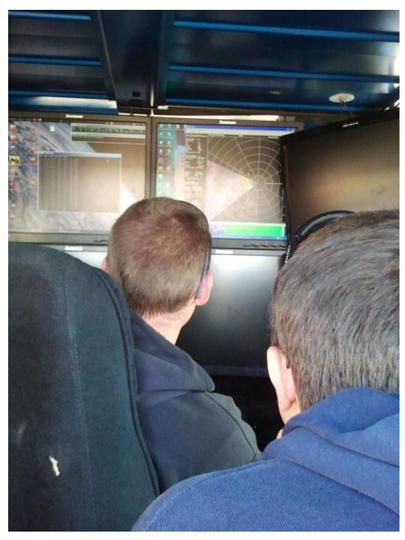




PAMREX – Penn State University

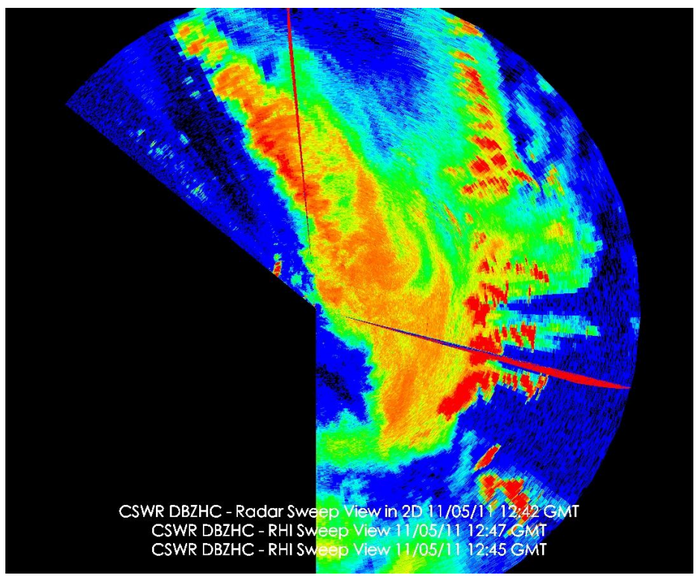
The Pennsylvania Mobile Radar Experiment (PAMREX) used the DOWs in the fall of 2003 and 2004 to study a wide variety of phenomena such as the interaction of fronts and thunderstorms with ridges and valleys, terrain-induced atmospheric circulations, and phenomena owing to atmospheric interactions with Lake Erie. Complex terrain can produce atmospheric circulations capable of triggering thunderstorms, in addition to influencing already mature thunderstorms and their attendant severe weather. Surface temperature and roughness differences between Lake Erie and the land surface of Pennsylvania routinely affect small-scale weather as well with "lake effect" snow bands being perhaps the most widely known of these lake-induced phenomena.





SCHUSS – University of Utah

During the Storm Chasing Utah Style Study (SCHUSS), one of the mobile DOW trucks was deployed to the Salt Lake Valley to investigate the inner workings of Wasatch snowstorms from October-November 2011. More than a dozen University of Utah graduate students were trained to drive the truck and use the radar dish transmitter and receiver.



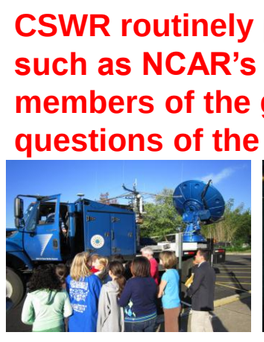
DROPS – Purdue University

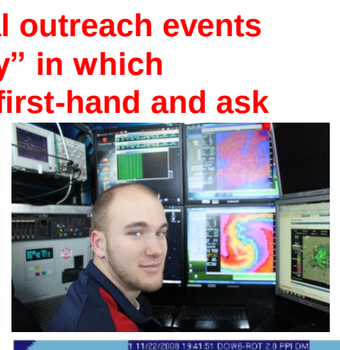
Dr. Jeff Trapp, professor in the Dept. of Earth and Atmospheric Sciences at Purdue University, requested one of the CSWR mobile weather research radars for deployment to West Lafayette, Indiana from October 21 through November 18, 2009. Student teams planned research projects related to the occurrence of isolated severe and non-severe thunderstorms, mesoscale convective systems, frontal rain bands and lake-effect snow.

UIDOW – U of Illinois

Students utilized the DOW for classroom instruction, outreach and research during a 19-day deployment in spring 2011. The radar was used to illustrate concepts taught in class (e.g., bright band identification, reflectivity in snow vs. rain, the relationship of reflectivity to precipitation rate, etc.) Data obtained from the radar was also later used in class projects.

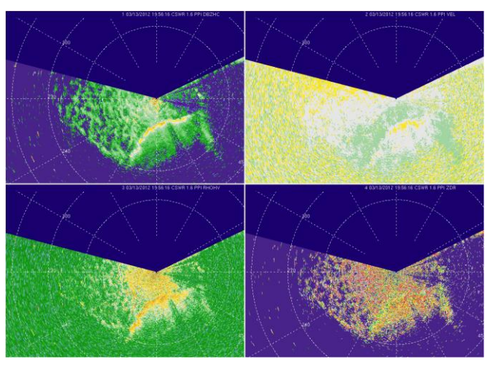
CSWR routinely participates in local, community-based educational outreach events such as NCAR's "Careers in Science" and "Super Science Saturday" in which members of the general public are able to see the instrumentation first-hand and ask questions of the participating scientists.

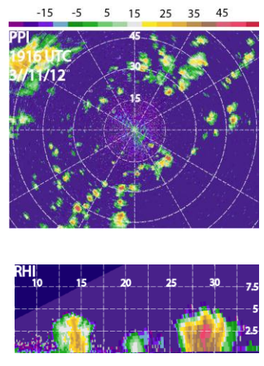


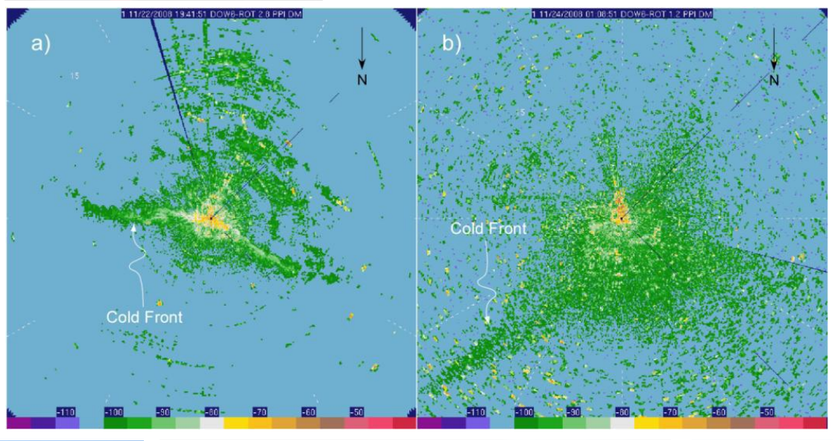


DROPS2 – Purdue University

This 2012 project consisted of a Purdue-area component and a Florida sea-breeze component. These two classes were divided into small teams of students, each responsible for the planning and execution of DROPS2 missions and subsequent data analysis.







UNDEO - University of Nebraska

The University of Nebraska DOW Education and Outreach (UNDEO) project was an NSF-funded collaboration between the Department of Geosciences at the University of Nebraska-Lincoln and CSWR, conducted in November of 2008. The project allowed a 15-day on-campus deployment of a DOW for classroom instruction and hands-on experience.