UNIVERSITY of
NORTHERN COLORADO

Earth Sciences Program

Final report for UNIDATA equipment award:

Advancing education and research in meteorology at the University of Northern Colorado using the Unidata Internet Data Distribution

June 8, 2007

UCAR
P.O. Box 3000
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Boulder, CO 80307-3000

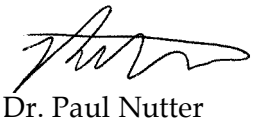
A Unidata Equipment Award was granted to The University of Northern Colorado (UNC) Earth Sciences Program in June 2006. The award enabled the purchase of a Hewlett-Packard ProLiant DL380 Server and ten Dell Optiplex GX620 PCs configured with Redhat Fedora Linux and relevant Unidata Software including the LDM, Gempak, and IDV. The new equipment provides UNC with previously unavailable capability to access Unidata's IDD. Motivated by the installation of these new resources, the UNC Provost committed funds to purchase eight additional PCs to update an adjacent "Metlab" adjoining the primary meteorology classroom. Five of these institutional PCs were configured with Microsoft Windows for students to check email, browse the web, run IDV or EdGCM, and complete C++ programming homework. Three of the institutional PCs were configured as clones of the classroom PCs for use in Linux and Gempak homework assignments and independent study available anytime of day or night. This rebuilt and expanded Earth Sciences computer network provides new capability to reinvigorate and grow the program.

The new equipment had an immediate impact on our capability to align curriculum with the fundamental technical training that undergraduate students require to advance into graduate studies or forecasting careers with public and private sector institutions. Freshman students are now being introduced to Linux computing and the use of Gempak for visualizing meteorological data. Content presented to senior students in the Synoptic Meteorology lab course nearly doubled over prior years due to the new capability to assign homework that could be completed outside of class. Finally, senior students are beginning to engage independent study research intended to prepare them for employment or graduate studies as well as produce conference publications. Indeed, one student has already been offered a graduate assistantship at another institution based directly on his work with the computers purchased on this grant. The new equipment has also had an impact on campus computing priorities. The PI has formed a relationship with information technology administrators, and they no longer

marginalize the role of linux platforms on campus. The very presence of our participation in the IDD contributed to a successful bid for UNC to join Internet-2 connectivity.

Long term objectives stated in the original proposal will continue to be developed. In particular, the use of computers will continue to expand to include more courses at all levels of curriculum while increasing the use of IDV in the classroom. Inquiry-based learning modules for undergraduate courses will be developed using real-time data, including both majors and non-majors. Meteorology students have initiated a custom weather forecasting service (http://www.unco.edu/AMS/forecast.htm) that will continue to grow for enhanced program visibility, community outreach, and student growth. Students will continue to engage independent research projects for the senior capstone course. Students are also being recruited to assist with the development of our program web site that will emphasize an integrated display of earth sciences data and information. Such data will be available for use in outreach with regional K-12 programs and may be presented using a kiosk display at a high-traffic location on campus. None of these growth opportunities would have been possible without the equipment purchase enabled by the Unidata grant.

Sincerely,



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