

### PhotoHighlight



Guests from South Korea attend the McIDAS training.

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### 2006 Unidata Training Workshop

by Jo Hansen, Unidata Program Center

The weather outside may have been frightful, but the enthusiasm inside was delightful. That slight rewording of an old pop tune may be strained, but it accurately reflects the first ten days or so of Unidata's annual training workshop. In addition to Unidata's warm welcome, falling snow provided its own welcoming, though chilly, attraction.

Unidata has always been pleased with the wide community representation and participation in its training workshop, and this year is no exception. It's quite probable that the first session ever in netCDF and the addition of THREDDS training as well were major attractions. The visualization and analysis package training sessions held in the first couple of weeks have also attracted enthusiastic participation.



International guests enjoy the snow at the 2006 Training Workshop.

A really newsworthy aspect of this training workshop is the great diversity represented. Of 72 individual participants, 52 are from our traditional community, while four are from the private sector, and 16 are non-U.S. residents. As Unidata seeks to raise its international profile, this latter factoid is particularly relevant. Participants from Africa (Burkina Faso and Mali), from France, Spain, South Korea, Canada, and Latin America bring fresh perspectives and an eagerness to participate in the community which will, ultimately, enrich all joint community endeavors.



### The North American Regional Climate Change Assessment Program (NARCCAP)

by Gene Takle, Ray Arritt, and Bill Gutowski of Iowa State University

*Editor's Note: This article is the part of our series of snapshots of current research in the atmospheric sciences and examples of innovative uses of weather data and technologies.*

Various constituencies from the public and private sector have asked for information on future climate change at higher resolution than currently is provided by global climate models. NARCCAP will systematically investigate the uncertainties in regional scale projections of future climate and produce high-resolution climate change scenarios for use in studies of impacts of climate change. Multiple regional climate models (RCMs) are being nested within multiple atmosphere-ocean

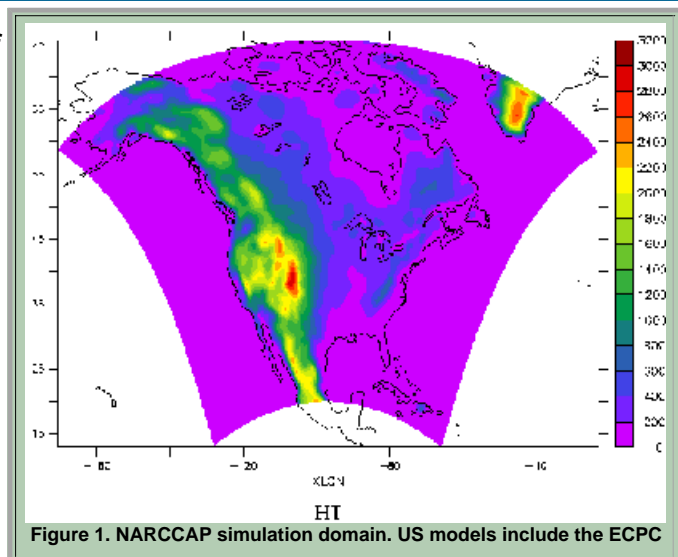


Figure 1. NARCCAP simulation domain. US models include the ECPC

general circulation models (AOGCMs) forced with the A2 SRES future-emission scenario, over a domain covering the conterminous US, northern Mexico, and most of Canada. The plan also includes an evaluation phase, being led by the Regional Climate Modeling Laboratory at Iowa State University, that nests participating RCMs within reanalyses of observations.

regional spectral model (RSM), MM5, and the Weather Research and Forecasting Model (WRF). AOGCMs include the NCAR CCSM3, the Canadian Climate Centre CGCM3, the GFDL CM2.1, and the Hadley Centre HadAM3.

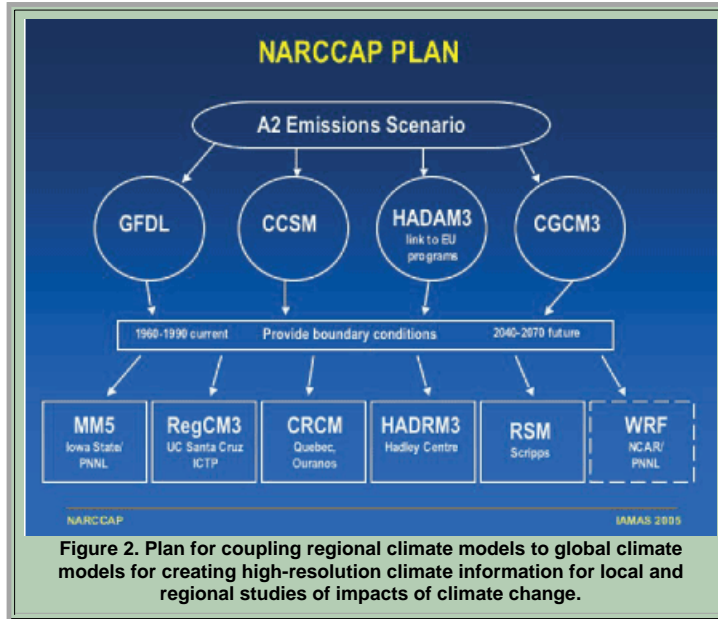


Figure 2. Plan for coupling regional climate models to global climate models for creating high-resolution climate information for local and regional studies of impacts of climate change.

This international program, led by Linda Mearns of NCAR, includes RCMs developed or maintained by modeling groups from Europe, Canada and the US. (See figure 1 above.) High resolution (50 km) global time slice experiments based on the GFDL atmospheric model (AM2.1) and the NCAR atmospheric model (CAM3) also will be produced and compared with runs of the regional models, also run at 50 km resolution. The resulting regional climate model and time-slice selections will form the basis for multiple high-resolution climate-change scenarios that can be used in climate impacts assessments in the US and Canada. All output (140 Tbytes) will be made available to the climate analysis and the climate impacts assessment community. Regional investigations of the North American monsoon, the low-level jet, and snow evolution will be conducted in all simulations.

These simulations will provide decision-relevant information for public policy, in part through a user-oriented data access, formatting, and archival facility. NARCCAP will contribute to a wide range of research in the climate community by producing regional-scale projections of climate change with estimates of uncertainty. In doing so, the program will enhance the infrastructure for climate-change research by linking several North American and European institutions in a collaborative network for multi-model simulation, output analysis and data dissemination. The program's output will promote undergraduate and graduate research at the participating institutions and foster cross-disciplinary links across campuses and between institutions.

### Longer Term Rolling Data Archive at Unidata

by Tom Baltzer, Unidata Program Center

To facilitate greater access to near real-time and historical data, Unidata is now leveraging the LEAD project in providing a longer term archive for the benefit of the community. Unidata's commitment to its community includes maintaining a seven day archive of key datasets on its motherlode system in forms that facilitate ready use with tools provided and/or supported by Unidata. When seeking older data, community members find that long term archive centers often provide their datasets in forms that are not immediately compatible with Unidata tools. As a result, many organizations within the Unidata community create their own longer term ad-hoc archives and sometimes share them with other community members. The archive on our LEAD test bed system is intended to fill this gap for community members.

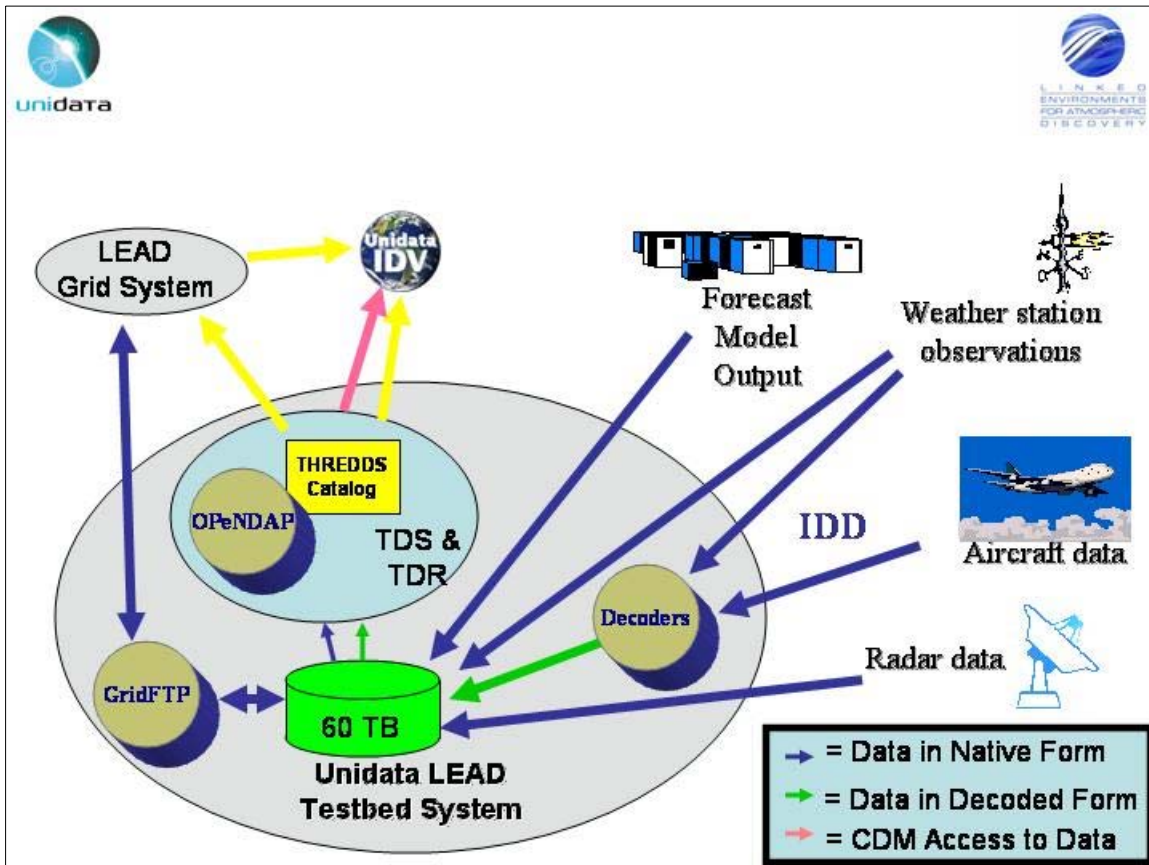
The test bed build out includes setting up a large rolling archive of IDD and other meteorological datasets for use by LEAD and the Unidata Community in general. Given the available storage capacity, we are aiming for a 6 month archive of datasets including:

The Linked Environments for Atmospheric Discovery (LEAD) project is funded by a large ITR grant from NSF and brings together nine institutions to achieve its overarching goals (see <http://lead.ou.edu>). In addition to providing data services and tools, and software design and development expertise to the project, Unidata has built and is maintaining a test bed system of capabilities as previously described in the [October 2005 CommunitE-Letter](#) and the [Unidata Seminar Series](#).

- Model Output from operational and research models
- Surface and Upper Air Observations
- WSR 88-D Level II and III Radar data and products
- Satellite Data

as well as plenty of space to store output generated by LEAD users.

The concept of the Test Bed system is shown in the figure below.



Data is received both via the real-time LDM/IDD streams and from systems that make up the LEAD Grid (Test Beds at other LEAD institutions and TeraGrid nodes). These data are stored on the Unidata LEAD Test Bed in rolling archives with varying longevity depending upon the data in question (for some examples see: [LEAD Data Descriptions](#)) or permanently in the case of products generated by LEAD users.

There are two key THREDDS Data Server (TDS) access points for the data being stored on the system. The first provides a structure and interface that mirrors the motherlode system and can be found at:

<http://lead.unidata.ucar.edu:8080/thredds/catalog.html> for html access

<http://lead.unidata.ucar.edu:8080/thredds/catalog.xml> for XML access

(E.g. for use in the catalogue field of the IDV data chooser).

The second is designed for use within the LEAD project and is thus regularly cross walked into the LEAD Metadata Schema for use in the LEAD Resource Catalog. It can be found at:

<http://lead.unidata.ucar.edu:8080/thredds/topcatalog.html> for html access

<http://lead.unidata.ucar.edu:8080/thredds/topcatalog.xml> for XML access

We invite members of the Unidata community to make use of these resources and additionally invite participation in the LEAD Beta Test Program. Please contact Tom Baltzer at [support-lead@unidata.ucar.edu](mailto:support-lead@unidata.ucar.edu) for information and support.

Please send comments to [support-eletter@unidata.ucar.edu](mailto:support-eletter@unidata.ucar.edu)  
The CommunitE-letter is produced by editor, Jo Hansen, and production manager, Emily Doremire

