



# 2009 Unidata Users Workshop

"Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has." – Margaret Mead

Boulder  
8 June 2009

Dr. Mohan Ramamurthy, Director  
Unidata, UCAR  
Boulder, CO





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# Welcome!

- On behalf of Unidata, I welcome you to the 2009 Unidata Users Workshop. Thank you for your participation at this important meeting.
- The organizers have developed an exciting program, with a great line up of presenters and a promising array of activities to keep everyone engaged toward realizing the goals of the workshop.
- I want to thank the Organizing Committee, Users Committee, and the UPC Staff for their hard work.
- I extend a sincere thank you to NSF for sponsoring the workshop and its continued support of Unidata.
- And last but not least, I thank all of the presenters and panelists for their contributions.





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# A Dedication

- I would like to dedicate this workshop to Prof. Elen Cutrim, who passed away on 15 April 2009 after prolonged illness.
- Elen served on the Unidata Users Committee that planned this workshop. She was a Users Committee member for nearly six years.
- Over the years, she was a tireless ambassador for Unidata.
- We will continue to carry out our work with the same enthusiasm, energy, and openness that Elen exhibited throughout her life.







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# Triennial Users Workshops



- These workshops date back to 1988 and this is the eighth workshop in that series.
- All have had a focus on teaching & education.
- Topics have included Synoptic met., Mesoscale met., Remote Sensing, Educational Technologies, GIS, and Modeling.
- They have provided an important forum for sharing of ideas and resources as well as an opportunity for discussing topics important to Unidata and our community





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# Student Participation

- I extend a special welcome to all the students.
- Educating and training the next generation of students is an overarching goal of these workshops.
- We have been providing scholarships since 2006 for student participation.
- The 2006 workshop resulted in a historic appointment of a student, Sean Arms, to the Unidata Users Committee.
  - Sean has been a superb contributor and has brought an important new dimension to our governance.
  - As you know, he is one of the principal organizers of this workshop.







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# Education in Instrumentation and Observational Systems

## 2009 UCAR Community Survey:

**“Not enough instrumentation development or education on the sources and use of observational data in universities.”**

A significant problem	448	50%
A minor problem	361	40%
Not a problem	87	10%

**Has been perceived as a significant problem since 2000**





# Unidata

A program of the community, by the community, and for the community.

Conceived at a 1983 grass-roots workshop, held at Madison, WI;

Funded primarily by NSF/ATM through a core-funding proposal every five years.



UCAR

University Corporation for Atmospheric Research  
P.O. Box 3000, Boulder, CO 80307  
Tel: (303) 497-1996

16 July 1984

Dr. Richard E. Greenfield  
Atmospheric Sciences Division  
National Science Foundation  
1800 G Street, N.W.  
Washington, D.C. 20550

Dear Dick,

Enclosed are eight copies of our revised UNIDATA proposal, and also a memorandum from Stan Ruttenberg explaining how the reviewers' comments were used in the revision. If you think it would serve a useful purpose to send this explanation to your reviewers, feel free to do so.



We are planning a  
25<sup>th</sup> Anniversary  
Event on 15-16  
Oct. in Boulder

## Initial Charge:

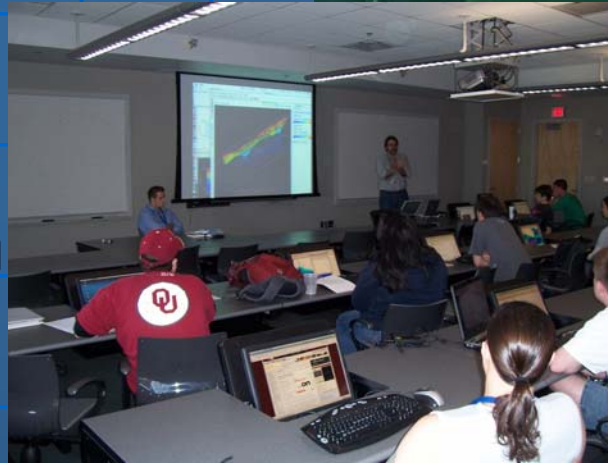
- Provide access to current & historic weather data
- Support interactive computing within Atmos. Sci. departments.
- Provide means to communicate with NCAR & NASA mainframe (super) computers
- Provide means to access data from field experiments





# Unidata: A **BASF** For Academia

- We don't do science, but we empower scientists.
- We don't teach students, but we enable education and learning.



Democratizing access to meteorological data and analysis tools is the hallmark of Unidata.

Empowering educators through integration of data and tools into hands-on learning has been a long-standing goal for Unidata.





# Mission

To provide the data services, tools, and cyberinfrastructure leadership that advance Earth system science, enhance educational opportunities, and broaden participation.

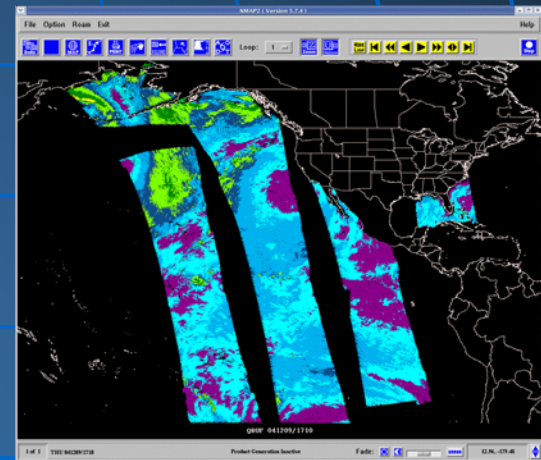
We

*Facilitate data access*

*Develop and provide tools for data management, analysis, and visualization*

*Provide comprehensive support, including training*

*Engage in community building and advocacy, and bring community together to address important issues.*







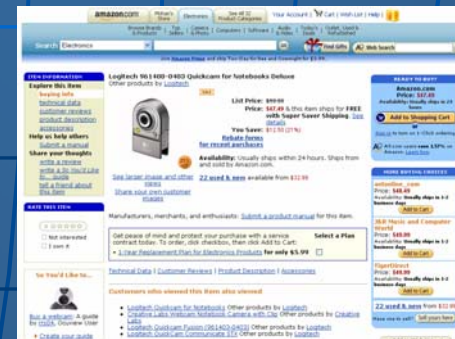
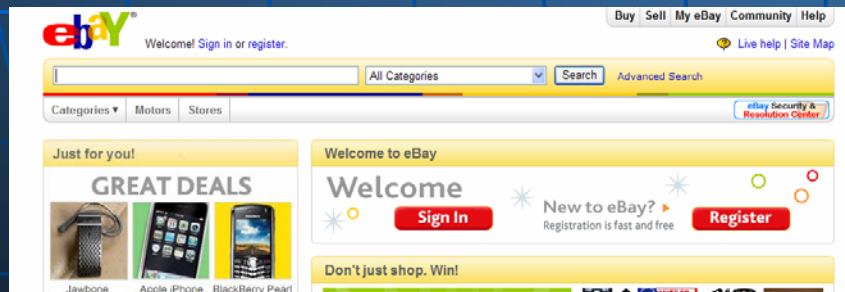
# Vision

Unidata's vision calls for providing comprehensive, well-integrated, and end-to-end data services for the geosciences community.

**You Tube**  
Broadcast Yourself™

Empower users to be contributors

Facilitate a “market place” or an “intellectual commons” for products, services, ideas, and other resources.







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# Evolution in the Universities

UNIVERSITY of WISCONSIN **MADISON**  
**Atmospheric & Oceanic Sciences**

Teaching and learning about the natural environment.

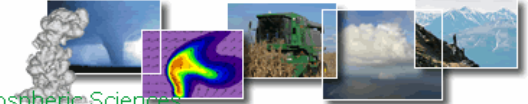
**UCLA** | Department of Atmospheric and Oceanic Sciences



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**PURDUE**  
UNIVERSITY

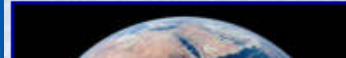
College of Science  
Department of Earth & Atmospheric Sciences



**UNIVERSITY AT ALBANY**

State University of New York

Welcome to the **DEPARTMENT OF EARTH**  
**AND ATMOSPHERIC SCIENCES**



**Rutgers**

Department of Environmental Sciences



Cornell University  
Earth and Atmospheric Sciences

Today, only 5 UCAR member institutions have  
Meteorology programs.

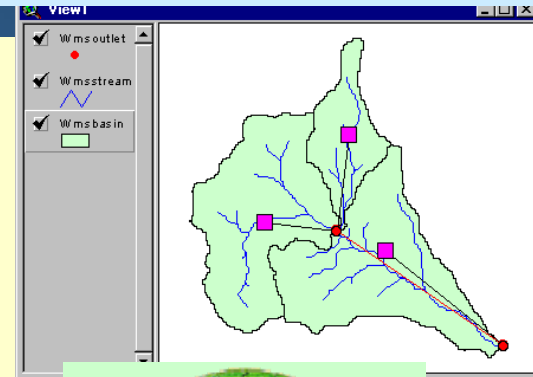




# Community Evolution

- Over 25,000 users from ~150 countries, 1500 academic institutions, and 7000 organizations in every sector and GEO discipline (and beyond) are registered with Unidata

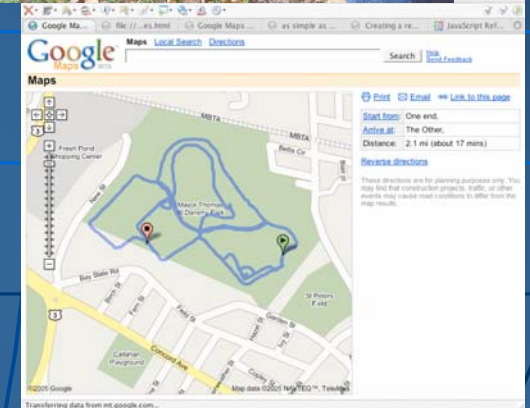
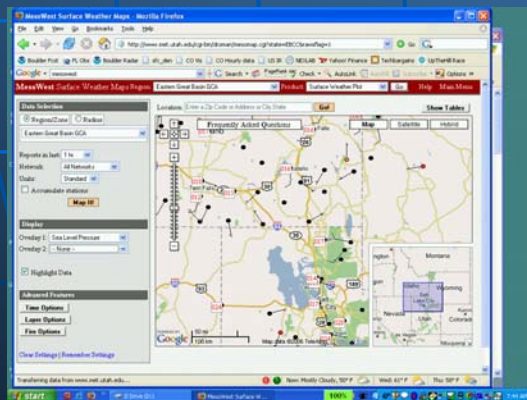
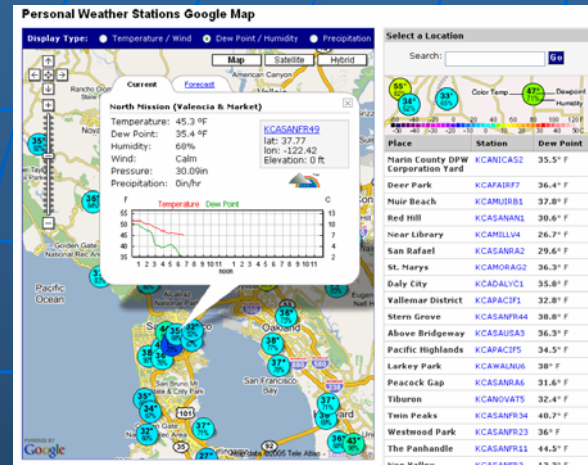
- Working with related GEO disciplines
  - Hydrology, Oceanography
- Reaching institutions beyond the U. S.
  - South and Central America, Caribbean, Europe, Asia, and Africa
- Offering our services to non-traditional communities and institutions
  - e.g., Community and Tribal Colleges



**Key: By having a “free and open” philosophy and Leveraging partnerships and technological advances (Java, Web services, Open Source software, GIS Tools, Social Networking applications)**



# Personal Meteorological Sensors and Hands-on Learning



Google Earth and Google Maps have unleashed a revolution in light-weight GIS integration. They have immense potential for enhancing geoscience education and spatial awareness.



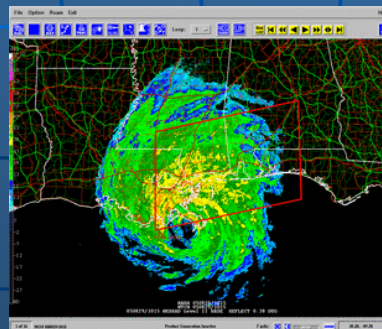
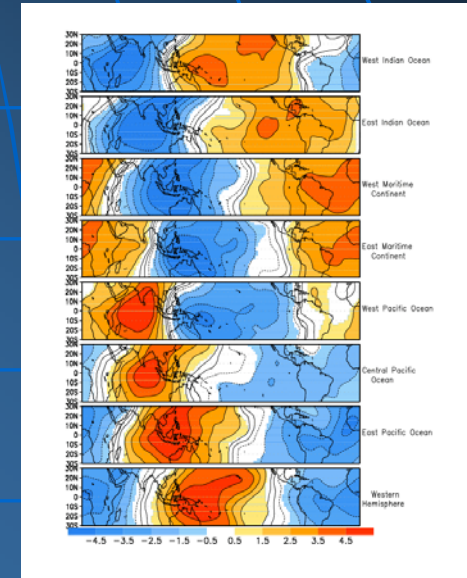
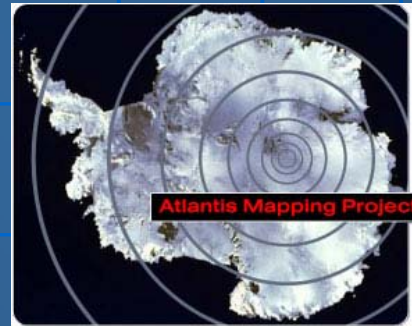
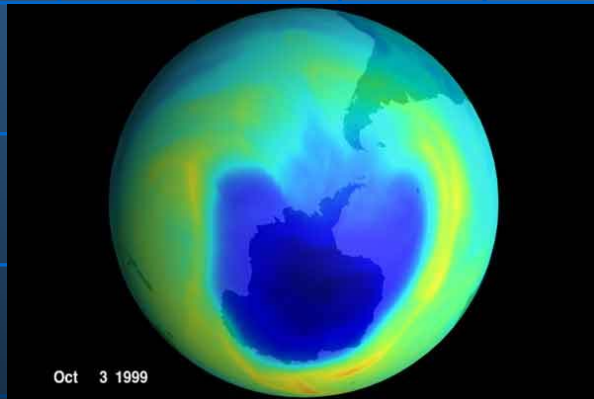


# Concluding Remarks

- These are exciting times to be an educator and a student.
- There are so many opportunities to teach and learn in “cool” ways.
- Unlike most disciplines, we are so fortunate to be observing and understanding our dynamic planet in real-time! Did anyone watch the live feed from VORTEX II on Weather Channel? At least, one Usercomm member last yesterday's tornado in the Denver area.
- Moreover, our science, on all scales, is not just exciting but so relevant to society.
- Unidata is often viewed as a model that other disciplines would like to emulate.
- Meetings like this play an ever important role in bringing the community together to address issues of mutual interest.



# Think Globally, Observe Locally



Thank you!