



# Cooperative Institute for Precipitation Systems

## **This Period in CIPS: October – December 2006**

### **Conferences and Presentations**

Several CIPS members presented various research topics at the NWA's 31st Annual Meeting. Chad Gravelle teamed up with Scott Rochette (Associate Professor at State University of New York, College at Brockport) and Thomas Niziol (NWS MIC in Buffalo) for two presentations. All presentation titles are listed below:

A Conceptual Model Depicting Processes Important for the Generation of Meso-beta Scale Snow Bands (Poster): Michael J. Paddock, Charles E. Graves, and James T. Moore

A Diagnostic Analysis of Mesoscale Snow Bands, Which Occurred on 26 February 2003 (Poster): Michael J. Paddock, James T. Moore, and Charles E. Graves

The GFS Model in a Busted Snow Event: 15-16 January 2003 (Poster): Chad M. Gravelle, Fred H. Glass, James T. Moore, and Charles E. Graves

Cold-Season Coupled Upper-Level Jet Streaks in the Northeastern U.S. Part I: Weak Dynamic Cases (Poster): Scott M. Rochette, Chad M. Gravelle, and Thomas A. Niziol

Cold-Season Coupled Upper-Level Jet Streaks in the Northeastern U.S. Part II: Strong Dynamic Cases (Poster): Scott M. Rochette, Chad M. Gravelle, and Thomas A. Niziol

An Investigation of the Radar Characteristics and the Environment of a Mesoscale Snowband that Formed on 15 March 2004 (Poster): Emily B. Eisenacher, James T. Moore, and Charles E. Graves

Marty Baxter presented a talk for the 23rd Conference on Severe Local Storms, St. Louis, MO: 6-10 November 2006.

Baxter, M. A., and C. E. Graves, 2006: A case example of the role of warn-sector convection in the development of mesoscale banded snowfall: 2003 November 22-24. Preprints, 23rd Conf. on Severe Local Storms, St. Louis, MO, Amer. Meteor. Soc., 4.6.

## **Submitted Articles**

Using work performed under a COMET Partners grant, the following article is being revised for publication in the National Weather Digest:

Graves, C. E., R. A. Wolf, J. T. Moore, J. A. Zogg, and B. L. Mickelson, 2007: Analysis of the 3-4 June 2002 extreme rainfall event over Iowa and Illinois. *Natl. Wea. Dig.*, **31**, 83-102.

## **CIPS Team Notes**

Graduate student Mike Paddock and undergraduate students Becca Baggett, Andy Kren, and Adam Wallace will attend the 87th AMS Annual Meeting in San Antonio, Texas. This is a great opportunity for professional development for these young students.

If you have not received the newest edition of *Meteo News*, you should very soon. Dr. Charles Graves has spearheaded this great task to keep everyone in the meteorology department (past and present faculty, staff, and students) informed about current events. Great Work Doc!

The Department of Earth and Atmospheric Sciences is in the beginning stages of revamping the meteorology undergraduate courses. The new course lineup should debut fall 2007 and should eliminate the repetitiveness of some courses.

A new elevator is being constructed outside of O'Neil Hall. This elevator will allow easier access to all floors of the Earth and Atmospheric Sciences Department within O'Neil Hall. Just a reminder, O'Neil Hall is located at 3642 Lindell Blvd. We are hopeful the new elevator will be in operation sometime during the spring semester.

The department is currently hiring for one position: Assistant Professor of Meteorology. This position will likely be filled before summer.

Hardware upgrades are in the near future for the CIPS crew. CIPS is in the beginning stages of buying two ReadyNAS (Network Attached Storage) units, each holds about one terabyte. The purchase of these will allow CIPS to store 10 years of surface, upper-air, and NARR data in GEMPAK form for case studies, climatological investigations, and various other research endeavors.

Adam Pasch, Mike Paddock, and Emily Eisenacher are working on individual articles for publication. They are currently reviewing their articles before submission.

Congratulations to Emily Eisenacher for winning the Best Graduate Student Poster Presentation Award at the Annual NWA Meeting in October. Great Job Emily! Keep up the good work.

CIPS members have started a new tradition this semester. Several members travel to the local National Weather Service Office (LSX) each month to meet with local

forecasters and management to collaborate on various research topics. This has turned out to be a great opportunity for students and forecasters to swap ideas and techniques.

CIPS team members are continuing to collaborate with Wes Junker (HPC contractor) and Matt Kelsch (UCAR/COMET) with the investigation of the Kansas turnpike flash flood case of August 30-31 2004. A paper will culminate from this collaboration in the near future.

## **CIPS Team News**

Jaime Poole continues to work toward the completion of her Ph.D. She has passed her oral exam and is now awaiting the completion of her dissertation and defense. Currently she is using the Weather Research and Forecasting (WRF) model to run simulations of elevated thunderstorm events. The focus of her research is to investigate numerous cases, each representing a different distance between the area of elevated convection and the associated surface boundary, in order to identify possible initiation and propagation characteristics of elevated storm systems.

Mike Paddock is continuing his Ph.D. studies with emphasis on heavy rainfall proximity soundings. He has preliminary results, utilizing test cases, but has decided to include more cases to increase his sounding dataset to at least fifty for the preliminary study. Mike is using Fred Glass (Lead Forecaster, St. Louis NWS) and Wes Junker (HPC Contractor) as consultants for this study. He will also be volunteering at the St. Louis NWS Forecast Office in the spring. Mike is also preparing for the written and oral portion of the Ph.D. exam, which will be in the spring semester.

Adam Pasch is continuing his Ph.D. studies with emphasis on high resolution model precipitation verification. Adam is using a modified Ebert-McBride Technique to do object oriented verifications. The dataset he is using comes from the Spring Program which consists of three different versions of the WRF model. Adam is currently fine-tuning his research code. He is also preparing for his written and oral exams.

Emily Eisenacher is still in the beginning stages of the Ph.D. program. Her Ph.D. work will be a continuation of her Master's research. Emily will investigate the difference in mesoscale forcing mechanisms that are noticed in snowbands that are aligned parallel to the mean motion versus a perpendicular orientation. Emily is also the President of the Saint Louis University Chapter of the American Meteorological Society.

Chad Gravelle is investigating snow fall potential in the Midwest based on system classification. He is collaborating with Fred Glass (Lead Forecaster, St. Louis NWS) on this study. Chad is producing a five year database of all snowfall events in the Midwest and from there will reduce the dataset to approximately 150 cases based on certain investigative criteria. He will compare/contrast observed snowfall, associated with these cases, with currently developed conceptual models. Chad anticipates graduating with his Master's degree in May.

Erin Snavely is investigating cool-season elevated thunderstorms. She will be looking at principle components to determine which parameters are significant and if there are

north/south biases, east/west biases, large/small spread, etc. Erin currently has twenty-five cases in her database and is working on pinpointing the initiation and mature time periods as well as their locations. She also anticipates graduating in May.

Stephen Rodriguez is examining two bow echo cases. Both of which impacted the St. Louis Metro area. One bow echo moved straight through the area while the second stopped and produced heavy rainfall. He has completed the damage assessment, upper-air and surface analyses, observational and model sounding analyses, and an examination of wind profiler data. Stephen is currently employed by the National Weather Service in the Student Career Experience Program (SCEP).