Greater St. Louis Chapter AMS - Minutes of 29 January 2004.
The February meeting of the Greater St. Louis Chapter of the American Meteorological Society was held on Thursday, January 29, 2004 at the always fun Ragazzi's on "The Hill." We had a hardy crowd of 19 members on a cold and snowy evening and we enjoyed a delicious dinner. Chairperson Marty Baxter, began the Business meeting at 8:20 PM CST.

Reports
Lou Hull read the minutes of the November 2003 meeting held at Saint Louis University's Busch Center. Mr. Roger Edwards from the Storm Prediction Center (SPC) was the featured speaker. They were accepted as read.

Treasurer's Report
Ron Przybylinski was not present to deliver the Treasury Report.

Old Business
Dr. Jim Moore gave recognition to his SLU contingent at the Seattle AMS conference in January 2004. Our chapter poster was proudly on display.

New Business
St. Louis University Meteorology Department and the National Weather Service at St. Louis will again sponsor a Severe Weather Workshop on Saturday, March 27, 2004. The workshop will be held at Busch Center on the campus of Saint Louis University. Details are on the SLU/CIPS website.

The Secretary, Lou Hull, requested members to consider being a judge at the upcoming Post Dispatch Regional Science Fair. We will confirm the date and time at the next meeting.

Several speaker options are being pursued for the Spring AMS meetings. Dr. Rao is expecting Dr. Bill Dannevik from Lawrence Livermore Labs to speak in April 2004. Our speaker for February 2004 is confirmed to be Dr. Thomas Schlatter on February 19, 2004.

Speaker
Marty introduced the speaker Dr. Robert Pasken. Bob is an Associate Professor on the Saint Louis University Meteorology Department staff. He migrated from State College of New York, to the University of Chicago, then to Saint Louis University while earning his BS, MS, and PhD degrees. His teaching career has taken him from the University of Oklahoma, to Parks College, and back to SLU. His research in field experiments has taken all around the world.

Dr. Pasken's talk was entitled, "A Coupled Modeling System to Predict the

Dispersion of Plant Pathogens with Applications to Agroterrorism."

Bob's study was spawned by a PhD thesis written by Saint Louis University's Dr. Joseph Petrovich and sponsored by the American Lung Association. As St. Louis people with hay fever knows, pollen in a biological threat. In 1992 there were 35 million people who suffer from hay fever in the United States. In Japan, hay fever affects 20% of the population. The solution for tracking this threat is similar to the solution for tracking a radiological agent.

Bob's forecasting model integrates the receptor and source methods of viewing t he problem. The receptor method builds a forecast of concentrations based on persistence, climatology and meteorological forecasts. The source method analyzes the population of the dispersed agent and its seasonal diurnal fluctuations. Dr. Pasken assumed a problem were the agent was Oak pollen and explained its April through May release and showed a plume emitted from southeast Missouri covering the city of St. Louis. The diurnal morning and afternoon peaks forecasted by the model matches the observe peaks and the concentration levels were close as well.

The MM5 model at the Department is used to forecast a Single Particle Lagrangrian Integrated Trajectory. The inner MM5 domain covers the Midwest and the KMOV Channel 4 viewing area. Channel 4 is partially sponsoring the research.

Bob showed a case where a low pressure area moved east-northeast across northern Missouri and a cold front passed through the St. Louis area around 6:00 PM in the evening. The MM5 correctly forecast the pressure pattern, but more importantly forecast the double peak in Oak Pollen concentrations. Bob calculated a 0.8 correlation.

The application to terrorism is obvious. Crop, animal, and human disease risks can be evaluated using the model output. Bob used soybean rust as an example. The rust kills the plant in ten to fourteen days, but is not immediately obvious. Treatment with fungidicide is expensive and must be focused on the area to be infected. The model was used on a domain centered on Brazil's soybean growing area. One ten day forecast kept the rust plume from an infected crop at or below 500 meters. The path of the plume was narrow and plants were treatable. But after fifteen days, the meteorological conditions lifted the plume where convection spread the plume. In this case, rain was not a good thing since the rust spores settled on the plant, and quickly matured.

Bob's conclusions were that the MM5 model showed promised as a tool to identify and attack the threats of plant pathogens and agroterrorism.

Marty thanks Dr. Pasken after many questions and answers. Marty ended the business meeting at 9:20 PM CST.

Lou Hull, Secretary.