

15th Annual Iowa State University Atmospheric Science  
**UNDERGRADUATE RESEARCH SYMPOSIUM**

3140-2 Agronomy Hall  
Monday, 3 December 2007

- 8:30 SYMPOSIUM OPENING REMARKS
- 8:40 Public Understanding of Doppler Radar  
**Rachel Butterworth** Mentors: Cinzia Cervato, William Gallus, Kevin Kloesel
- 9:00 Increase in Convective Cloud Energy from Urban Heat Islands  
**Colin Oraskovich** Mentors: Daryl Herzmann, Chris Maiers
- 9:20 Climatology of Storm Reports Relative to Linear Jet Streaks  
**Christopher Schaffer** Mentors: Adam Clark, William Gallus
- 9:40 Accuracy Test of Commonly Used Snowfall Forecasting Methods  
**Ryan Kluss** Mentor: David Flory
- 10:00 BREAK
- 10:20 Soil CO<sub>2</sub> Flux During and After Rainfall Events  
**Jason Patton** Mentors: Eugene Takle, Tom Kaspar, Lee Burras
- 10:40 Evaluating Precipitation Ensembles of Different Spatial Scales for Use in Hydrologic Prediction  
**Jessica Reese** Mentor: Kristie Franz
- 11:00 Elevated Convective Initiation  
**Chris Conoan** Mentor: Christopher Anderson
- 11:20 Do Drylines Enhance Tornado Potential in Iowa: An Investigative Study of Cases from 1993-2007  
**Jacob Hamblin** Mentor: David Flory
- 11:40 Preferred Circulation Patterns for Midwest Extreme Synoptic Precipitation  
**Heidi Grove** Mentor: William Gutowski
- 12:00 LUNCH BREAK
- 1:10 Comparison of Guidance and NWS Official Forecast Models with Observed Temperatures for Heat Islands and Cool Valleys During Radiative Cooling Nights in Central Iowa  
**James Sleep** Mentor: Karl Jungbluth
- 1:30 Convective Damaging Wind Environments along Warm/Stationary Frontal Boundaries  
**Brandon Engelson** Mentors: Jon Hobbs, Marc Russell, Karl Jungbluth
- 1:50 Analysis of Land Surface Fluxes Over Typical Iowa Land Covers  
**Kayla Conrad** Mentor: Kristie Franz
- 2:10 Climatology of Surface Wind Speeds Using a Regional Climate Model  
**Theresa Andersen** Mentors: Eugene Takle, Jimmy Correia
- 2:30 The Affects of Corn and Soybean Evapotranspiration on Thunderstorm Days  
**Zachariah Hicks** Mentors: Elwynn Taylor, Rodney Donavon
- 2:50 BREAK
- 3:10 Effect of Tornado-Induced Internal Pressure on Buildings  
**Michael Peterson** Mentor: Partha Sarkar
- 3:30 The "Sickle-shaped" Hodograph for Significantly Tornadoic Supercells vs. Non-Tornadoic Supercells  
**Aubrey Sullivan** Mentors: Daniel Miller, Karl Jungbluth, William Gallus
- 3:50 Quality Control Issues for Meteorological Observations  
**Andrew Rye** Mentors: Karl Jungbluth, Ken Podrazik
- 4:10 Monthly Analysis of Thunderstorm Cap Values at 700-hPa and 850-hPa in Iowa  
**Brett McIntyre** Mentor: William Gallus
- 4:30 SYMPOSIUM CLOSING REMARKS

All presentations are open to the general public. Faculty, staff, and students are encouraged to attend.  
Parents, families, and friends of presenters are especially welcome.