Rasmussen, Straka, Kanak,
LaDue, Magsig, and students

NSF support for tornadogenesis
research focusing on rear-flank processes

# Objective 1: Tornado cyclones (with collaborators)

## Multi-case analysis

All/best available single-Doppler data with tornado cyclones

Analyze azimuthally averaged angular momentum budget

Analyze mobile mesonet thermo as function of r, t

Look for differences between tornadic, almost tornadic, and non-tornadic vortices

# Objective 2: Rear-flank precipitation/ dynamics

## Multi-platform case-study analyses

Need 4-6 km depth
Prefer dual- or multi-Doppler
Rear-side stereo photogrammetry*
Perhaps mobile mesonet if things
    get exciting

# Stereo photogrammetry

Validation of the image orientation approach.

Image analysis, using existing “canned” approaches initially.

Likely will have to customize.  The goal is to automate identification (and hence tracking) of identified cloud features and regions of more homogeneous features.

The automation should save us a huge amount of labor, after an investment of a huge amount of labor.

Experimental/exploratory.

# Objective 3: Overview... what prevents tornadoes?

## Multi-case analysis

Down-the-road research... based on some modeling work now being conducted by Straka student.

Focus on non-tornadic cases.

Use background fields from NWP or (e.g.) Romine/ Dowell analyses

# Objective 4:  Case study of vortex in squall line

## NW Oklahoma case study

Dual- or multi-Doppler analysis

Somewhat unlikely to find time for this study

Data still needed from 2010

- Storm-scale dual-Doppler

- UAS!

- Mobile particle imaging (although perhaps we can use data from Friedrich/Romine systems if we don't have this)

- Should we use our cameras for tornado debris if storm-scale DD is not possible?

SASSI news
- probably eliminating the QGIS underpinnings to improve performance and flexibility

- overhauling annotation (may be more like chat)

- adding a few other bells and whistles

- generally look-alike, work-alike to last year