**Final Project Ideas – ATMS373 (ANWP) – Spring 2015**

**(1) Go into greater depth on Activity#4**

Experiment with other difference schemes in time (D&VK Chapter 4) and compare/contrast the results with what was found using forward-in-time differencing. Compare the forecast simulations to the analytic solution.

**(2) Model physics project**

Run an idealized case using variations on the chosen model physics and determine the sensitivity of the WRF simulations to changes in the model physics. Choose ONE of the following idealized cases for your project…

[a] 2D flow over a bell-shaped mountain

[b] 2D squall line simulation

[c] 3D supercell simulation

**(3) Stability analysis for 1D barotropic primitive equations model of Activity#6**

Experiment with variations on time step (**Δt**) and horizontal grid spacing (**Δx**) applied to the weather model coded with the governing equations of Activity#6 to investigate stable and unstable temporal and spatial resolution combinations. Place the initial displacement peak in the middle of the model domain (195 ≤ i ≤ 205), utilize radiation boundary conditions and integrate out to 30000 seconds.

**(4) Ensemble project**

Run an idealized case using variations on the initial atmospheric sounding and determine the sensitivity of the WRF simulations to changes in the initial conditions. Choose ONE of the following idealized cases for your project…

[a] 2D flow over a bell-shaped mountain

[b] 2D squall line simulation

[c] 3D supercell simulation

**(5) Other ideas**

Check with Prof. Miller to make certain they meet with his approval.

**Final Project Presentation – ATMS373 (ANWP) – Spring 2015**

**(1) Oral Presentation**

A presentation lasting *no more than* 15 minutes in which you describe:

[a] the purpose of the project {What aspect of NWP did your project address? What is your project hypothesis?}

[b] methodology {What did you do to meet the project purpose?}

[c] results {Show only results that are relevant to the project purpose}

[d] conclusions {Did the results and methodology prove your hypothesis and meet the purpose of the project?}

**(2) Written Report**

A *one page* single-spaced description following the same outline as the oral presentation that gives a **brief** summary of your project purpose, methodology, results, and conclusions. If required, figures can be attached to the report and don’t count against the one page limit.