

# ATM 419/563 – Final project information

Spring, 2022 – Fovell

**The final project for this class is due by 5 PM EDT on Wednesday, May 11.**

The project can be conveyed in presentation (PowerPoint or similar), which is preferred, or written (Word, LaTeX, or equivalent) form. It should be a complete work that conveys everything that is needed to understand the project motivation, experimental design, results, and principal conclusions along with the lessons learned. The important pieces of the presentation/paper are:

- Background and motivation
  - What happened and why is this case of interest? Was it a high-impact weather event? Was it a forecast failure? For an idealized experiment, what do we need to learn about the phenomenon under examination?
  - Hypotheses to be explored. How will you determine success or failure?
  - What do we need to know about the hypotheses to appreciate the experiment and understand the results?
- Experimental design
  - Model configuration, including domain setup, horizontal and vertical resolution, model physics and numerics selections. Show your domain. Justify your choices.
  - Initialization data sources and strategies. Why were these data selected, how were they utilized. I don't need information like "I used the Vtable for GFS", but rather "This dataset is one of the few available for the area and time period under examination." What's your lead time and simulation length, and why are they appropriate?
  - Experiments conducted, including rationale and how they address your hypotheses.
  - Tools that will be used to conduct, examine and evaluate simulations and hypotheses.
- Results and discussion
  - Describe your experimental outcomes, and evaluate your hypotheses.
  - If your results didn't confirm your hypothesis, consider why. If your results did confirm your hypothesis, consider whether this was coincidental or accidental.
  - Can you make any references to the literature?
- Bibliography

Your project does not need to be original or publishable work, but needs to be *your work*, and demonstrate you learned something from the class. These are items that I will consider when evaluating your presentation:

- **Demonstration that you learned something from this class**
- Quality and maturity of hypotheses and experimental design
- Complexity of your experiment, and the thought that went into it
- Thoroughness of your analysis, including references to course material, concepts, tools, etc..
- Quality of your presentation, including the care you invest in your figures