Goals

The goals of this assignment are to
1) Learn how to do weather discussion with internet resources
2) Take a look today’s weather at Atlantic, Gulf of Mexico, and Miami area, and try to point out some interesting features.
3) Please turn in (email is fine) to TA at least one interesting weather feature that you see from the internet resources you learned today. Describe the feature in a few sentences. It would be good to include a link of an image. Due one week from today.

The Forecast Funnel

The forecast funnel visualizes the analysis and forecast process as a "funnel" from the planetary to local scales. The concept was developed by Len Snellman, a National Weather Service Meteorologist (Snellman 1982). Any good synoptic meteorologist will use this to do weather forecast. The idea is as shown in the figure: Always understand the planetary scale (waves) background first, then go to synoptic scale (such as frontal cyclones), then mesoscale (such as MCC, MCS, sea breeze), and finally local scale (such as super cells, tornadoes).

How to prepare your weather discussion?

Putting together a weather discussion can be an intimidating process. Assembling figures and graphics loops can consume much of your preparation time, allowing little time to think about the weather. Here are some suggestions to help you be as prepared as possible for the discussion.

- Go to the computer lab the day before your discussion and don't leave until you feel the weather in your veins. Then determine what you will likely need to focus on at tomorrow's discussion.
- Use the forecast funnel to gain an understanding of the past, present, and future weather. Pick two or three major issues to discuss. Critical to this process is developing an intuition for (1) recognizing the social and/or scientific significance of weather events and (2) identifying the major forecast problem(s) of the day. Developing such intuition can only be done by making every effort to understand and predict the weather on a daily basis. Kudos if you keep a daily weather journal.
- Prepare a manual surface analysis on the morning of your briefing (and preferably on a daily basis). Even if it is not a work of art, the process of performing a manual analysis results in a much more in-depth understanding of the weather than can be gained by looking only at numerical analyses and forecasts.
- During your briefing never deviate from the forecast funnel. Always start with the large scale and descend down to smaller scales. For example, if discussing the development of monsoonal convection over southern Utah, first use satellite imagery and synoptic analyses to define the evolution of the large scale before jumping to radar imagery and mesonet analyses. For example, a good outline follows below, with items in red introduced and used during the semester.

  o The recent (last 2-5 days) large-scale upper-level flow evolution based on Northern Hemisphere 500-mb heights/vorticity or dynamic tropopause analyses. These can be obtained from http://weather.utah.edu/.

CONUS-scale weather using WV, IR, and VIS satellite imagery, which can be obtained from http://weather.unisys.com/index.html or http://www.meteo.psu.edu/~gadomski/ewall.html.

Regional-scale weather: look above items in regional scale, for example: http://www.nhc.noaa.gov/satellite.shtml.

Soundings (KMFL and possibly elsewhere in the region) using http://www.rap.ucar.edu/weather/upper/ or http://weather.uwyo.edu/upperair/sounding.html.


Surface observations for Southern Florida using http://www.rap.ucar.edu/weather/surface/ or IDV.

Your nowcast for the afternoon (16-04Z) maximum temperature and 16-22Z precipitation amount.

NAM synoptic and (possibly) convective loops obtained from http://weather.utah.edu/.

GFS synoptic and (possibly) convective loops obtained from http://weather.utah.edu/.

The SREF short-range forecast at http://w1.spc.woc.noaa.gov/exper/sref/.

Your forecast for the overnight (22-16Z) minimum temperature, next day (10-04Z) maximum temperature, and 22-22Z (daily) precipitation amount.


- **Keep it simple and specific.** Stay focused on the 2-3 issues. Describe what you know, raise questions about what you don't. Don't hand wave, and don't try to use new techniques you've just learned in class if you haven't had a chance to absorb and understand them.

- **Spend more time discussing observations and less time discussing model forecasts.** There are 6 questions that need to be answered when forecasting (Bosart 2003), and the first four are: **What happened, why did it happen, what is happening, and why is it happening?** Answer these questions before moving on to the NWP guidance. The final two questions are **what is going to happen and why is it going to happen.** Total reliance upon NWP guidance to answer these questions should be avoided.

**Other On-line Resources** (also will be in class web site)

Canadian Weather Office Analyses: http://www.weatheroffice.gc.ca/analysis/index_e.html

CIMSS Tropical Cyclones Group http://tropic.ssec.wisc.edu

Earth Wind Map https://earth.nullschool.net
Elizabeth Tuttle’s Weather Map Site
http://mysite.du.edu/~etuttle/weather/weather.htm

GOES Satellite Imagery at NASA/MSFC
http://weather.msfc.nasa.gov/GOES/

JETSTREAM (NWS Southern Region Online Weather School)
http://www.srh.weather.gov/jetstream/synoptic/synoptic_intro.htm

HPC Surface Analysis

Miami Weather Forecast Office
http://www.srh.weather.gov/mfl/

Miami WSR-88D Radar Base Reflectivity

Miami WSR-88D Radar Loop

National Radar Mosaic
http://radar.weather.gov/ridge/Conus/

National Hurricane Center
http://www.nhc.noaa.gov

NCAR/RAP Upper-Air Site
http://www.rap.ucar.edu/weather/upper/

NCEP Analyses and Forecasts
http://www.nco.ncep.noaa.gov/pmb/nwprod/analysis

NCEP Home
http://www.ncep.noaa.gov/

NCEP Models
http://www.emc.ncep.noaa.gov/modelinfo/index.html

NRL Satellite Imagery Site

Tropical Tidbits
https://www.tropicaltidbits.com