**Lab 11: Forecasting ­ Numerical Weather Prediction**

You will be using the following website <http://mag.ncep.noaa.gov/>for many questions. Open up a few tabs of this site because you will be doing some side ­by ­side comparisons of forecasts.

# Question 2:

Use [www.wunderground.com](http://www.wunderground.com/) instead.

# Question 3:

<http://mag.ncep.noaa.gov/>

Select “Large” size after you click GFS. Not necessary, but makes the map larger and easier to analyze. Write down ALL the locations of High Pressure systems in the US. Write down All the locations of Low Pressure systems in the US. If there is a cold front, write down the location.

# Question 4:

Hit the back button, reselect “1000 500 thick”. Now select **“3 Day”** instead of “Loop All.”

# Question 5:

In an extra browser tab, follow the steps written in question 3 in the manual, but select NAM for Model Type instead of GFS this time. Do the 3 Day loop for both side­by­side and note differences both at first and after 3 days.

# Question 6:

*Do not look up MOS tables. Use the ones I have provided for you below for questions 6-8*. Probabilities in the MOS table are shown as digits, but are actually percentages. Times are in UTC. Be sure to differentiate well between *probability* of rain and *expected* amount of rain in your answer.





**Question 7:**

Use **Chart 1** on the worksheet I have distributed and look at the forecasts for **April 2nd** above.When you are finding the high temperature and low temperature, you must look at 12 for the low and 00 of the next day for the high. For example, the High for April 1st is 51/52 degrees Fahrenheit. After completing the chart, write down in your notebook how well GFS and NAM agree.

# Question 8:

Use **Chart 2** and answer question 8. You can find the NWS forecast for April 2nd at <https://forecast.weather.gov/MapClick.php?lat=38.980720000000076&lon=-76.93726999999996#.XKF7h5hKjIU>

# Question 9:

In an extra browser tab, follow the steps written in question 3 in the manual, but select GEFS­SPAG for Model Type instead of GFS this time. Click on **500\_516\_558\_ht**. Click “Loop All.”

Click “stop” and use the arrow to manually progress through the model. Tell me **where** the model STARTS showing uncertainty as well as **when** this happens. Convert to days, but you should see some uncertainty within only a few days. Is Canada more or less uncertain then the US?

# Question 11:

In an extra browser tab, follow the steps written in question 3 in the manual, but select GEFS­SPAG for Model Type instead of GFS this time. Click on one of the “mslp” maps, doesn’t matter which one. Click “Loop All.” Click “stop” and use the arrow to manually progress through the model. How many hours until indistinguishable? Is this more or less than your value from #10

# Question 12:

Go to <https://weather.gc.ca/ensemble/naefs/cartes_e.html>instead of the website the manual tells you to go to.

When looking at these maps, the “means” are the contour lines and the “spreads” are the filled-in colors. Fill in your answers in the box on the next page (for College Park, Maryland), but the left column of the box should be (next page):

|  |
| --- |
| Rain (Chart type: Precipitation) |
| Surface Temperature (Chart type: Surface Temperature) |
| Wind at 200 hPa (Chart type: Wind at 200 hPa) |
| Surface Wind Speed (Chart type: Surface Wind Speed) |

**INCLUDE UNITS. Be sure to set the forecast 5-days out.**