



# FIU WxChallenge

Challenge Overview  
Fall 2015/Spring 2016

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Sign-up deadline Sep.27, 2015 for Fall

# Brief Intro – Changes in Rules

- Discussed in depth later – but here are a few changes from two years ago
- 1.) Brad Illston (head of tournament) stepped down; new WxChallenge Manager is Jeff Basara
- 2.) Participant's scores do not count towards team totals if participating in half year
  - If you only participate in fall or spring, scores do not affect team outcome
  - I **highly recommend** signing up for the full year. It's \$3/semester or \$5/full year. If you sign up for fall, and decided you want to do spring, your scores also will not count for the team standings!

# When to Forecast?

- Forecast 4 times a week (Mon-Thurs) for 5 predetermined cities a semester
- Each city has 8 total days of forecasting
- Forecast is always for the next day (Tues-Fri)
- Forecast is always due at 00 Z (8 PM EDT)
- UTC **DOES NOT** participate in Daylight Savings Time
- **After** daylight savings time ends forecasts are due at **7 PM EST**
- Forecast can be entered in advance and modified as many times as you want before daily deadline

# When to Forecast? (cont'd)

- Forecast for a 24-hour period
  - 06 Z to 06 Z the next day
  - Example: On Monday, your forecast will be due by 00 Z (8 PM EDT). The forecast period starts 6 hours later at 06 Z (2 AM) Tuesday and goes until 06 Z (2 AM) Wednesday
  - Do this 4 times weekly
  - Time change affects forecast times
  - Forecasts will be due at 7pm during Standard time, while forecast period goes from 1 AM to 1 AM.
- Note: forecast period is always 06 Z – 06 Z, so if the city is in a different time zone the local forecast period changes (i.e. Houston, TX will be 1 AM to 1 AM CDT, or 12 AM to 12 AM CST). But forecasts will still be due at the 00 Z equivalent for EDT or EST

# What to Forecast

- High and Low temperature (°F)
- Maximum Wind Speed (knots)
  - 1 knot = 1.15 mph
  - NOT maximum wind gust, just the 1-min sustained wind speed
- Total rainfall or melted snow equivalent, to the nearest 0.01”
- Note: Melted snow equivalent may not be as much as total precipitable water. For example, just because 1 inch of snow falls, this does not mean the total rainfall amount will be 1 inch

# Forecast Schedule

## Fall 2015

City	Identifier	Dates
<a href="#">Sandberg, CA</a>	KSDB	September 28 - October 8
<a href="#">Long Island, NY</a>	KISP	October 12 - October 22
<a href="#">Durango, CO</a>	KDRO	October 26 - November 5
<a href="#">Tampa Bay, FL</a>	KTPA	November 9 - November 19
<a href="#">Green Bay, WI</a>	KGRB	November 30 - December 10

## Spring 2016

City	Identifier	Dates
<a href="#">New Orleans, LA</a>	KMSY	January 25 - February 4
<a href="#">Aberdeen, SD</a>	KABR	February 8 - February 18
<a href="#">El Paso, TX</a>	KELP	February 22 - March 3
<a href="#">Beckley, WV</a>	KBKW	March 7 - March 17
<a href="#">TBD*</a>	KTBD	March 21 - March 31
<a href="#">Tournament City**</a>	KTOU	April 4 - April 30

# Scoring

- Based on a cumulative error point system
- High/Low: one point for each degree difference between your forecast and the actual high/low
- Wind: 0.5 error points for each knot difference
- Rainfall:
  - 0.4 points for each 0.01" error (within 0.10")
  - 0.3 points for each 0.01" error (for 0.11"-0.25")
  - 0.2 points for each 0.01" error (for 0.26"-0.50")
  - 0.1 points for each 0.01" error (for 0.50" or greater)

# Scoring (cont'd)

- Example
  - Forecast: 81 / 65 / 10 knots / 0.55"
  - Actual: 82 / 62 / 11 knots / 0.85"
  - Error
    - 1 point for high
    - 3 points for low
    - .5 points for wind
  - Precipitation off by 0.30"
    - $(0.4) * (10)$  for being off by over 0.10"
    - $(0.3) * (15)$  for being off by over 0.25"
    - $(0.2) * (5)$  for being off by 0.30"
    - Total precipitation error = 9.5 points
  - Total error:  $1+3+0.5+9.5 = 14$  points



# Scoring (cont'd)

## Local Results for Pensacola, FL Day 8 for Florida International University (FIU)

Max: (85°F) Min: (67°F) Wind (11 knots) Precip: 0.00" - Final Day 8

Period			Forecaster			Day 8 Forecast				Day 8 Error					Cumulative Error					Normalized					
Rank	Prev	Change	Name	Sch	Gr	Abs	Max	Min	Wind	Precip	Max	Min	Wind	Precip	Penalty	Total	Max	Min	Wind	Precip	Penalty	Total	City	Cumu. Rank	
115	222	107	lana82	fiu	3		85	67	8	0.00	0	0	1.5	0.0	0	1.5	10	7	9.0	3.2	0	29.2	-1.91	-1.91	115

## Local Results for Newark, NJ Day 6 for Florida International University (FIU)

Max: (43°F) Min: (38°F) Wind (33 knots) Precip: 0.00" - Final Day 6

Period			Forecaster			Day 6 Forecast				Day 6 Error					Cumulative Error					Normalized					
Rank	Prev	Change	Name	Sch	Gr	Abs	Max	Min	Wind	Precip	Max	Min	Wind	Precip	Penalty	Total	Max	Min	Wind	Precip	Penalty	Total	City	Cumu. Rank	
274	92	-182	lana82	fiu	3		42	34	25	0.55	1	4	4.0	14.0	0	23.0	12	10	11.0	19.0	0	52.0	0.94	1.21	593

# Missing Forecasts

- **DON'T MISS FORECASTS!**
- **10 point penalty** for missing a forecast or entering “guidance” or “persistence” PLUS the difference in error between guidance and the actual forecast which often equals **20-30 error points**
- You need to enter a “numerical” forecast which means one that you personally entered to avoid penalties
- Missing a single forecast will hurt your score for the entire year and prevent you from finishing in the top 500 for that city
- To stop yourself from forgetting:
  - Just enter a forecast in advance for the entire week. It takes 30 seconds, literally any forecast will do, even if it is off by 10 degrees it is better than forgetting to forecast
  - Modify the forecast the day before

# Missing Forecasts (cont'd)

## National Results for Syracuse, NY Day 1

Max: (40°F) Min: (30°F) Wind (13 knots) Precip: 0.00" - Final Day 1

Period			Forecaster				Day 1 Forecast				Day 1 Error				Cumulative Error				Normalized							
Rank	Prev	Change	Name	Sch	Gr	Abs	Max	Min	Wind	Precip	Max	Min	Wind	Precip	Penalty	Total	Max	Min	Wind	Precip	Penalty	Total	City	Cumu. Rank		
1464	0	0	JCTG12	val	0	1	44	29	7	0.12	C	4	1	3.0	4.6	10	22.6	4	1	3.0	4.6	10	22.6	40.52	56.56	1789
1464	0	0	mags25	val	4	1	44	29	7	0.12	C	4	1	3.0	4.6	10	22.6	4	1	3.0	4.6	10	22.6	40.52	56.56	1789
1464	0	0	priced	pur	4	1	44	29	7	0.12	C	4	1	3.0	4.6	10	22.6	4	1	3.0	4.6	10	22.6	40.52	57.20	1810
1464	0	0	solivo	tam	4	1	44	29	7	0.12	C	4	1	3.0	4.6	10	22.6	4	1	3.0	4.6	10	22.6	40.52	58.21	1811
1378	0	0	CLIMO_	xxx	8		44	29	7	0.12		4	1	3.0	4.6	0	12.6	4	1	3.0	4.6	0	12.6	16.40	27.45	1595

# Scoring Definitions

- Lots of statistics on the site—don't get confused, just concentrate on making accurate forecasts
- Cumulative error is your total error points for the city
- Normalized score is only used for your overall ranking. Zero is average. Negative is good. Don't worry about it now, look up the rules page if you are interested.


# Team Scores

- 33.3% is average of top 5 forecasters
- 33.3% is average of median 5 forecasters
- 33.3% is average of all forecasters
- If you decide to withdraw from the competition or forget to forecast more than about 10 times, your score does not count.


# Reading the Results

Actual Results, updated hourly


National Results for Brownsville, TX Day 8																									
Max: (86°F) Min: (60°F) Wind (10 knots) Precip: 0.00" - Final Day 8																									
Period			Forecaster				Day 8 Forecast				Day 8 Error				Cumulative Error				Normalized						
Rank	Prev	Change	Name	Sch	Gr	Abs	Max	Min	Wind	Precip	Max	Min	Wind	Precip	Penalty	Total	Max	Min	Wind	Precip	Penalty	Total	City	Cumu. Rank	
1	1	0	CHILLY	ncs	2		86	61	9	0.00	0	1	0.5	0.0	0	1.5	2	8	2.5	0.0	0	12.5	-3.34	-3.34	1
2	2	0	VBguy9	ncs	2		86	60	9	0.00	0	0	0.5	0.0	0	0.5	2	8	3.0	0.0	0	13.0	-3.16	-3.16	2
3	3	0	rx312	psu	0		86	60	8	0.00	0	0	1.0	0.0	0	1.0	2	6	6.0	0.0	0	14.0	-2.79	-2.79	3
5	4	-1	bolt23	cmu	3		86	61	11	0.00	0	1	0.5	0.0	0	1.5	3	9	3.0	0.0	0	15.0	-2.42	-2.42	5
6	6	0	rjp509	psu	3		86	61	10	0.00	0	1	0.0	0.0	0	1.0	2	10	3.5	0.0	0	15.5	-2.23	-2.23	6
7	5	-2	atmos8	mit	0		85	59	10	0.00	1	1	0.0	0.0	0	2.0	3	11	2.0	0.0	0	16.0	-2.04	-2.04	7
7	9	2	djw211	mss	2		87	60	10	0.00	1	0	0.0	0.0	0	1.0	3	9	4.0	0.0	0	16.0	-2.04	-2.04	7
9	25	16	KFAT12	alb	2		86	60	10	0.00	0	0	0.0	0.0	0	0.0	4	9	3.5	0.0	0	16.5	-1.86	-1.86	9




Results are sorted by ranking for the current city




Forecaster Info (use Ctrl+F to search for your ID, or sort by school)




Forecast for the current day (Day 8 in this example)



Total Error (as of the current hour, not official until results say "Final")



Cumulative Error, for all days during the current city



Overall ranking and normalized score, all cities included



Home

▼ The Challenge

Submit Forecast

Schedule

Results

Distribution

Hyp. Verification

Cumul. Scores

Bracket

▶ The Tools

▶ The Info

▶ Parimutuel

▶ Local Manager

\*\* Beta \*\*

## Navigating WxChallenge.com:

- **Submit Forecast:** Link to forecast submission page
- **Schedule:** click on link for each city for information and the normal/actual High/Low/Wind/Precip
- **Results:** Interactive Results page
- **Distribution:** see histograms of what all competitors forecasted (after 8 PM of course)
- **Hyp. Verification:** Enter a hypothetical forecast and see the standings *if* that forecast verifies
- **Cumul. Scores:** Team standings

# Submitting Forecasts

- Go to [Wxchallenge.com](http://Wxchallenge.com) >> The Challenge >> Submit Forecast
- There you can enter your username and password and select your school (FIU)
- Enter the High, Low, Wind Speed (in kt, **not mph**) and precipitation (inches)
- Can submit forecasts for up to three days after the required forecast (recommended). Modify forecast as necessary
- Click “Submit Forecast for Verification” button at bottom of page



# Submitting Forecasts (cont'd)

Current Time: 19:04:55 UTC

## Forecast Entry Form

This form will allow any user to enter a forecast for up to the next three days. After your forecast has been entered, click the "Submit Forecast for Verification" button. A window will appear that will indicate whether your forecast is valid and saved. A forecast is **NOT** considered valid until you have saved the forecast and see the "Forecast Saved" popup window. **Please note that all activity on this website is being logged (including user information and IP addresses) and any tampering with forecast files will result in immediate termination from the contest.** If you have any problems, please contact the [WxChallenge manager](#).

WxChallenge Forecaster Name (*Case Sensitive*)

9 digit Password (*Case Sensitive*) ([Forgot password?](#))

(Do not save passwords on public machines!)

School

Show Current Forecast

## Required Forecast for Next Forecast Day

### Forecast 1 : Wichita, KS - Tournament (KICT) - Day 13 - 30 April 2013 (06 UTC) thru 1 May 2013 (06 UTC)

Numerical Forecast

High:  (F)

Low:  (F)

Wind Speed:  (knots)

Precip:  (Inches)

Persistence Forecast (Note: 10 point penalty)

Guidance Forecast (Note: 5 point penalty on second non-human forecast)

## Optional Forecasts for Future Days

### Forecast 2 : Wichita, KS - Tournament (KICT) - Day 14 - 1 May 2013 (06 UTC) thru 2 May 2013 (06 UTC)

No Change to Forecast 2

No Forecast 2

Numerical Forecast

High:  (F)

Low:  (F)

Wind Speed:  (knots)

Precip:  (Inches)

Persistence Forecast (Note: 10 point penalty)

Guidance Forecast (Note: 5 point penalty on second non-human forecast)

Submit Forecast for Verification

Clear Values

# Make sure the "Forecast Saved" Window Pops up

## Forecast Saved



**Your forecast has been saved.** Please close all browser windows to ensure proper security has been met. Upon closing this window, please click the "Show Current Forecast" button on the previous webpage to verify your forecast.

Forecaster Name : Joseph Zagrodnik (joezzz - fru) -  
Group 2

Forecast Status : Saved - **On Time** - (13:18:01 UTC)

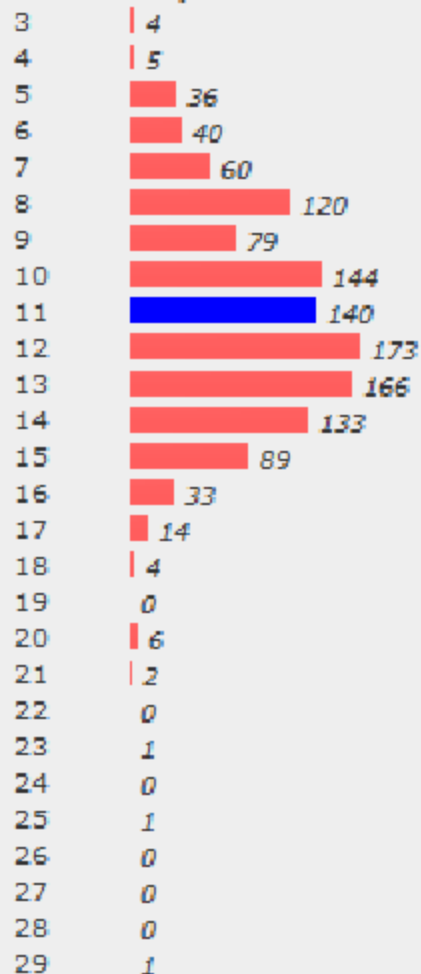
Forecast #	Type	High	Low	Wind	Precip
Forecast 1	Numerical	80	60	5	0.05
Forecast 2	No Change				
Forecast 3	No Change				
Forecast 4	No Change				

Your forecast was not emailed.

Close Window

# Distribution

## Wind Speed



Mean = **11.22 knots**, Std Dev = **3.04 knots**

- Available after 00 Z
- Shows how your forecast (blue) compares to everyone else (red histogram)

# Hypothetical Verification

Year : 2011-12 ▾ School : National Data ▾ City : Miami, FL ▾ Day #: 1 ▾

High:  Low:  Wind:  Precipitation:

- Enter hypothetical results for the current day to see what your ranking will be
- Generates a page that looks exactly like the “Results” page
- Useful because the “Results” page is always way off early in the morning (because the high temperature hasn’t been reached yet)

# How to Forecast

- Guidance will be posted daily on our Facebook Group, FIU WxChallenge from these models:
  - MOS Data
    - <http://www.nws.noaa.gov/mdl/synop/products/bullform.all.php>
  - USL Mesoscale model
    - <http://www.microclimates.org/forecast/wxchallenge.html>
  - NWS
- Other options
  - Current observation or local forecasts
  - Radar and satellite imagery
  - Wisconsin mm5 models

# Can't I just copy the NWS forecast?

- Yes, but you will not do very well in the competition.
- All public forecasts are for a “daytime” high and an “overnight” low. You are forecasting for a 24-hour period, so it is common for the high to occur at 2 AM if a front is passing through!
- For precipitation, a “30% chance of rain” is not the same as forecasting 0.10” of rain!!! You need to actually decide whether it is going to rain or not and predict how much!
- Use other forecasts as a general guide, but modify them using data from additional sources.

# Teamwork Policy

- Can discuss strategy, data sources, and work together
- However, everyone must enter their own individual forecast
- Specifically, you can't tell other people the exact numbers that you forecasted until after 8 PM, but you can say "I'm thinking it will be warmer than the GFS because..."

# Awards

- Very nice engraved trophies are given to the top 2 forecasters in each category (Fresh/Soph, Junior/Senior, Grad student) for each city
- Last year we had one forecaster finish in top 2 for the Grad student division
- Awards also given to winners of the bracket tournament and to the highest ranked team
- We would like to improve on our 35th place finish from last year



# Final Tips

- **DO NOT FORGET TO FORECAST!!!!**
- Sign up for the whole year! Don't do just one semester if you want to help the FIU team out!
- When in doubt, forecast 0.00" for rain. It is not worth it to put 0.01"-0.04" if there is only a small chance of rain
- The final wind speed is almost always higher than the MOS forecast. The USL is quite reliable for wind speed in most cases
- The actual results are not official until the climatology report is submitted at 5 AM. The high/low usually change by one degree and the wind updates higher.
- If you are not doing well, remember that the scores reset every 2 weeks and your worst city (fall and spring) is dropped from your cumulative score
- Join the FIU WxChallenge Facebook group by simply searching "FIU WxChallenge" and requesting to join

# Final Tips (cont'd)

- One way to improve is to look at distributions. Compare your forecast to the mean of other forecasters. If there is a significant difference (i.e. the mean high was 85 and you said 78), try to figure out what most people were seeing that you weren't.
- However, it is very common for crazy things to happen that mess up everyone's forecast. You just want to be closer to the correct numbers than the average
- There are over 1,500 forecasters, so finishing in the top 500 is excellent and even a rank of 800 is helping our team. Don't get discouraged!

# Last But Not Least

- I will send an email every 2 weeks with results and a preview of the next city
- I'll invite everybody into the WxChallenge Facebook group in order to assist you guys
- If you have any questions, feel free email me at [jbald025@fiu.edu](mailto:jbald025@fiu.edu), or if it is urgent message me on Facebook. All messages get forwarded to my phone
- You can also post questions/comments on the WxChallenge Facebook group
- Good luck and most importantly: Have fun!!