



FIU WxChallenge

Challenge Overview

Fall 2022/Spring 2023

FIU Local Manager: Rigoberto Olivera roliv053@fiu.edu

FIU Faculty Sponsor: Dr. Haiyan Jiang (haiyan.jiang@fiu.edu)

Sign-up period: September 19, 2022 (1200 UTC)

to **Sunday September 25, 2022 (1800 UTC)**

How to sign up for WxChallenge this year:

- The registration deadline is Sunday Sep. 25, 2022. You will need to register by yourself at (<https://www.wxchallenge.com/registration.php>) and enter the FIU registration key (meyS8PBZd). If you are a student of our department, your registration fee will be covered by the department. Our local manager Rigo Olivera (roliv053@fiu.edu) will pay the fees for you. Please email Rigo if you have additional questions.

FIU Local Winner Award & Department Support

- The Department of Earth & Environment has been generously supporting the FIU team participation by providing prizes to local winners each year since 2012-2013.
- We give out 11 local winner awards each year for the top ranked FIU team member locally for the 10 different cities and the final tournament round. Starting 2017-2018 school year, we set up a limit that each student can only win up to 3 local winner awards (one winning out of 5 cities in each semester and 1 winning for the final tournament round) each year. That way, we could have more students to win.
- Starting 2020-2021 school year, **the department also covers the registration fee for FIU students if you sign up at the Fall semester. We highly recommend signing up for the full year during the Fall registration.** If you sign up only for the fall and later decide you want to do it for the spring as well, you will have to pay the Spring registration fee by yourself.
- FIU WxChallenge website maintained by Dr. Jiang provides a history of FIU team ranking & local winner list each year:
<http://tcpf.fiu.edu/Jiang/education/wxchallenge/index.html>

2020-2021's team rank & local winners

6d. Congrats!

Weather Challenge:

FIU team ranked the 26th place out of 75 teams nation-wide (https://www.wxchallenge.com/cumulative_results.php). Listed below are the 10 local winners for this year:

1. Grand Rapids, MI - Alethia Kielbasa
2. Glen Falls, NY - Xinxi Wang
3. Juneau, AK - Rigo Olivera
4. Midland, TX - Jeremy Katz
5. Melbourne, FL - Suraima Aragon Teclas
6. New Orleans, LA - Rigo Olivera
7. Los Angeles, CA - Jeremy Katz
8. Des Moines, IA - Xinxi Wang
9. Greensboro, NC - Suraima Aragon Teclas
10. Jackson, MS - Oscar Mendoza



Thanks to Haiyan Jiang and Rigo Olivera

Five Local Winners for Fall 2021

- **1. Quillayute, WA - Anthony Duarte (Undergraduate)**
- **2. Scottsbluff, NE - Xinxi Wang (Graduate)**
- **3. Worcester, MA - Jeremy Katz (Graduate)**
- **4. Saginaw, MI - Anurag Sharma (Undergraduate)**
- **5. Ketchikan, AK - Valeria Espina (Graduate)**

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 and WxChallenge Manager
- 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
 - **We highly recommend signing up for the full year during the Fall registration.** It's \$3/semester or \$5/full year. If you sign up only for the fall, and later decide you want to do it for the spring as well, you will have to pay the Spring registration fee by yourself & 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 (Nov 6th)**
- 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

- The starting city is TBD, but it will run from from 9/26-10/10
- Go to WxChallenge website >> Challenge >> Schedule for more information as they release the rest of the schedule.

Scoring

- Based on a cumulative error point system
- High/Low: one point for each degree difference
- Wind: 0.5 error points for each knot difference
- Rainfall:
 - 0.4 points for each 0.01 of error in the verification range from 0.00 to 0.10 inclusive.
 - 0.3 points for each 0.01 of error in the verification range from 0.11 to 0.25 inclusive.
 - 0.2 points for each 0.01 of error in the verification range from 0.26 to 0.50 inclusive.
 - 0.1 points for each 0.01 of error in the verification range over 0.50.

Scoring (cont'd)

- Example
 - Forecast: 81 / 65 / 10 knots / 0.11”
 - Actual: 82 / 62 / 11 knots / 0.30”
 - Error
 - 1 point for high
 - 3 points for low
 - .5 points for wind
 - Precip error
 - $(25-11) * (0.3) = 4.2$ for range 0.11 to 0.25
 - $(30-25) * (0.2) = 1.0$ for range 0.26 to 0.50
 - Total precipitation error = 5.2 points
 - Total error: $1+3+0.5+5.2 = 9.7$ 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



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** 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 >> 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)

wxchallenge.com/submit_forecast.php



Challenge Info Local Manager

Forecast Entry

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" button. **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](#).

Forecaster ID: Password: School:

Required Forecast for Next Forecast Day

Forecast 1: Closed For Break (xxxx) - Day 0 - 1 Sep 2022 (06 UTC) thru 2 Sep 2022 (06 UTC)

Numerical Forecast

High: Low: Wind Speed: Precip:

Guidance Forecast

Optional Forecasts for Future Days

Forecast 2: Closed For Break (xxxx) - Day 0 - 1 Sep 2022 (06 UTC) thru 2 Sep 2022 (06 UTC)

No Change to Forecast 2

Numerical Forecast

High: Low: Wind Speed: Precip:

Guidance Forecast

Forecast 3: Closed For Break (xxxx) - Day 0 - 1 Sep 2022 (06 UTC) thru 2 Sep 2022 (06 UTC)

No Change to Forecast 3

Numerical Forecast

High: Low: Wind Speed: Precip:

Guidance Forecast

Forecast 4: Closed For Break (xxxx) - Day 0 - 1 Sep 2022 (06 UTC) thru 2 Sep 2022 (06 UTC)

No Change to Forecast 4

Numerical Forecast

High: Low: Wind Speed: Precip:

Guidance Forecast

E-Mail forecast?

*On my honor, I pledge that the forecast I have entered is my own and has not been unduly influenced by another person or a group of individuals. I have read the WxChallenge rules and understand the acceptable forms of collaboration with other forecasters." [\[Rules link to Honor Code\]](#)

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 - fnu) -
Group 2

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

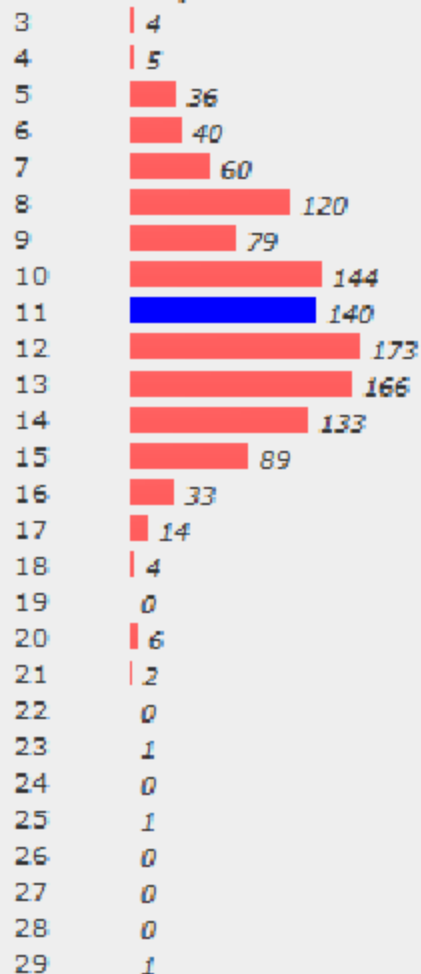
Forecast #	Type	High	Low	Wind	Precip
<i>Forecast 1</i>	Numerical	80	60	5	0.05
<i>Forecast 2</i>	No Change				
<i>Forecast 3</i>	No Change				
<i>Forecast 4</i>	No Change				

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)

How to Forecast

- Guidance can be found from these models:
 - MOS Data
 - http://www.weather.gov/mdl/mos_getbull#selectsta
 - 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
 - Websites such as Tropical Tidbits or Mike's Weather Page

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 3 forecasters finish in top 500 of all forecasters cumulative. And two of them made it to the tournament!
- Awards also given to winners of the bracket tournament and to the highest ranked team
- We would like to improve our team result from last year and get ranked this 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.

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

- If you have any questions, feel free email me at roliv053@fiu.edu.
- Good luck and most importantly: Have fun!!