Warren Buchholz - 00:10
I'm bringing to the stage here the WUSF News Director Mary Shimon, and we also have meteorologist Megan Borowski, who is part of the Florida Public Radio Emergency Network.

Without further ado, please help me welcome to the stage, Mary and Megan.

Mary Shedden - 00:30
I'm Mary Shedden. I've been news director at WUSF since about 2015 and I've been a long-time resident of the area. To my wonderful guest. Here is a dear friend, I can say, has become a dear friend, and it is Megan Borowski.

And Megan is the senior meteorologist at the Florida Public Radio Emergency Network. You'll hear me probably slip into saying a phrase called FPREN. That's our code. So we don't have to say Florida Public Radio Emergency Network in-house. We're having a conversation about the work we do. But also some of the things that you can think about as this year is underway. This hurricane season is underway. And Megan, I wanted to start with a little context. 2024 there were 18 main storms. Eleven of them were hurricanes. Three of them we will not forget: Debby, Helene, and Milton changed our region forever. All of those will never leave our hearts or minds, and it's on our minds a lot right now, I'm sure.

2025 is predicted to be an above-average year. What does that mean?

Megan Borowski - 01:45
So when we're talking about seasonal forecasting, we're only looking at the number of storms, so the number of named storms, the number of hurricanes and the number of major hurricanes.

So this year, we're looking at anywhere from six to 10 hurricanes, three to five of which actually could be major hurricanes. A normal year would be seven hurricanes, three of which are major and that's pretty much just it's an average of the past 30 years. So what we're looking at, compared to average for now, is the period between 1991 and 2020, so we look at all the hurricane seasons in those years, and we average the total number of named storms, hurricanes and major hurricanes. So that's what we're comparing this, this forecast to.

Mary Shedden - 02:32
It's just an equation, I never knew that.

Megan Borowski - 02:35
Everything in Meteorology is an equation.

Mary Shedden - 02:37
So, so really, it's a prediction. It's not, as in anything, you can't be certain what's going to happen.

Megan Borowski - 02:46
And the thing too, that we like to point out is the seasonal predictions are just numbers of totals. It does not tell us if we think a storm is like, which storms are going to make landfall, if any storms are going to make landfall in the contiguous United States. It doesn't tell us when we expect storms to occur.

We see that we have a very late start to season, but so the seasonal forecast again, take the season as a whole, June 1 to November 30. It doesn't tell us track of storm intensity, of storm timing. Those are all things to keep in mind also. You know, as we see, we can have a below average season, but if that one storm impacts our neighborhood, well then for us, it's a really catastrophic season. So something else to think about, to not let the numbers get in your head, of, oh, it's going to be above average, and I, you know, I need to panic, or, Oh, it's forecasted to be below average. I can just not think about it.

Mary Shedden - 03:38
Right. We have literally worked together side by side remotely with you at the Florida Public Radio Emergency Network in Gainesville, myself at the WUSF studios in Tampa, working throughout hurricane season and really throughout the year about extreme weather. And we kind of break up hurricane season thoughts in conversations in three ways: before, during and after.

And so I thought I'd kind of shape our conversation that way, because it's kind of interesting. I think getting a peek behind the scenes helps you understand how we're thinking, the kind of stories we're telling, the kind of reports that Megan and her team are filing. So first, it's hurricane season. What's a typical day look like for you?

Megan Borowski - 04:26
Well, every day is starts off with looking, looking at the atmosphere. So this is now my seventh season with with FPREN . It feels like 70 years, though, compared, you know, with the past very active seasons we've had.

But I start off my shift. I have the morning shift. So I'll start off looking at data of what's going on currently in the environment. So really, hurricane season for me is the same as during the off season. I'll look at satellite imagery, I'll look at radar imagery, I'll look at temperature observations. You know, the wind observations from weather balloons trying to. Get an idea of what the pattern looks like over the state, because we do forecasting for the entire state of Florida every day.

And so if there's a severe weather outbreak that we're tracking, you know, I need to, you know, be looking at where do we think the storms are going to line up? But for tropical meteorology in particular, we look as far east as as Africa, and we look at the thunderstorm activity in Sub Saharan Africa to see, okay, do we think there's going to be any disturbances that eject off the west coast of Africa into the eastern Atlantic? Are conditions over the Atlantic conducive for development? We'll look at sea surface temperature profiles throughout the entire Atlantic

Ocean, including into the Caribbean and the Gulf of Mexico, just getting an idea of what conditions are like. Are they favorable to enhance thunderstorm development? And then also, we kind of have our looking glass out to see if there's any disturbances that could start to develop into a tropical cyclone.

Mary Shedden - 05:55
During hurricane season, it's not much difference. But, and you're not looking at the coast of Africa, the western coast, and saying, “Oh my god, oh my god, oh my god.” You're not freaking out. You're not worrying about it. And, you know, you probably see plenty of social media and such of people going, “Oh no, it's time to worry.”

What would you like to say about when it's out in the Atlantic? And, you know, seven days out, 10 days out could develop. What do you hope people are thinking about when they hear this?

Megan Borowski - 06:28
Well, the beauty is, at least with hurricanes, is that we have time to prepare and time time to iron out the forecast and know when impacts are going to be coming, as opposed to something like a severe thunderstorm or a tornado, where the warning time is not nearly as large. You know, when a storm isn't even in existence yet, I would not worry too much. I always say, be prepared as you go into season. You know, understand the vulnerabilities of your property and your family and be prepared to take action if you need to. I would warn folks against the hype on social media. It's extremely frustrating to see somebody post one model run.

Mary Shedden - 07:09
Whoa. One model run? English?

Megan Borowski - 07:14
So we watched weather models. They're computer models. They perform mathematical equations, and they pump out what they think, given the current state of the atmosphere, what they think will happen as you go farther out in time. And we know models have biases, they're going to give us a forecast that's probably not correct. And so in school, we're trained to kind of identify what those biases are, and then identify when we need to be taking the model seriously.

Mary Shedden - 07:40
So that's when we see the spaghetti model. Those are all the different models?

Megan Borowski - 07:44
So that's, that's one graphical, you know, depiction of the models. But, yeah, you're correct with that. But even toward the start of the season, I think it was toward the end of May, started to see chatter on social media of like June 12, category five hurricane hitting, hitting the Florida peninsula. And of course, that didn't happen, right? But you can see a model showing that, and you can get really freaked out.

And you know, we have six months of hurricane seasons to get through, and if we're posting information, or if somebody's posting information every time a model shows a hurricane crashing into the shore, it's going to be a long season. But, you know, meteorologists are, you know, we're trained, and we see it all the time of when to take heed in what the model is kind of hinting at, and when to be like. You know, that's something not to worry about right now. You know, I would say anything beyond five days out from right now, if you see a model saying, okay, in 10 days, you're gonna have a hurricane, that's you know, yeah, maybe it could happen, but it's luck if the model gets it at that point.

Mary Shedden - 08:50
So I did not plan that. But let's talk about five days out.

Megan Borowski - 08:56
Perfect transition.

Mary Shedden - 08:57
Next up, and this is really where it gets serious. And so every day, the folks from FPREN are sending us updates. We're getting we have a what's called a Slack channel, emails. We get information, we get maps, we get a lot of stuff, but when it's starting to get serious about five days out, what happens is your team says we need to start having calls, and we all get on Zoom, and we have been doing this for

Megan Borowski - 09:27
Years.

Mary Shedden - 09:28
Years, and we all get on and it's all the member stations across Florida, from Key West up to Pensacola to Jacksonville, and we are on these calls and describe what the calls are like. And this is five days out. It's kind of like you give a little they give us a little peek so that different newsrooms can get an idea that it might be more serious for their area.

Megan Borowski - 09:54
Yeah. So we'll start off each call kind of showing everybody, and I think it's important to show the imagery of what we're watching. You know, it might just be a clump of thunderstorms on satellite imagery, but showing everybody what we're looking at, the information that we have right now and that what we think is going to happen. You know, as we know the forecast track of a storm gets better as you get closer to impacts. We saw the wobble with Ian. We saw the wobble with Milton, and so it's almost like steering a ship or an airplane trying to get the track 100% correct. But five days out, we have a broad picture of broad impacts of what we think will happen across a particular region. We don't have the pinpoint details down yet, but we start talking about, what areas do we think are going to be impacted?

So, you know, for Milton, we were looking at WGCU to our south, and then also WUSF here in the Tampa Bay area, and kind of alerting those stations that we think are going to be impacted.

Hey, we think that you're going to need all hands on deck. And also we will be all hands on deck to provide wall to wall coverage for the duration of the event and even afterward. So that's five days out. It's kind of a 30,000 foot view of details are probably going to change, but here's what we're looking at right now.

Mary Shedden - 11:16
So when that happens at WUSF, we will then kind of activate a plan we have in place for any kind of emergency coverage. We have teams where we say, Okay, you're going to be we have an A team that's going to be in studio throughout the duration of a storm. There are people who are going to be the relief to come in and fill in. We have people who evacuate and go somewhere else, and they help, especially with digital work. And we start implementing that plan.

And one of the things we actually do is we give time to our employees, especially those going to be in studio, time to board up their homes, getting their families off. We have folks who have small children, have, you know, have pets, all these things they have to take care of before a storm happens. We're members of the community too.

I think I was telling you, My husband works for Hillsborough County, so he works in a shelter, so we've got to close up the shop and head on into work. So that's one thing we're doing, but we're also preparing coverage.

And one of the first things you almost always see sandbags. Right? Sandbag centers being open, by the way, most counties have them open. Now, get your sandbags. Now, I think that's brilliant. I love that multiple counties are doing that, but we are putting out things like information you need to know about sandbags. We don't want to do the alarmist, oh, we're going to the Home Depot, and it's cleaned out of plywood. That's, I mean, it's, it's a great visual, but what's it telling you we're doing more thing, things like closures, places where, you know, starting to share shelter information, talking to FPREN, to Florida Public Radio Emergency Network, and talking to Megan and saying it's looking like it's coming here.

What are some of the things? And you say things like storm surge, winds, flooding, and so it gives you that information. So five days out, those are the things we're really looking at. One thing I learned in those five days out is there are a bunch of updates throughout the day, but there are some that are more important than others.

Megan Borowski - 13:33
The National Hurricane Center puts out a new update every three hours when there's a named storm, every six hours when they're just monitoring the tropics. But yeah, so every three hours, we will be looking at the newest data coming in on the storm itself. So that's maximum sustained winds pressure. Of course, when you see the winds go up, the pressure is going to be dropping. That means you have a storm that's intensifying. But there's also additional nuggets of information that I particularly like to look at, which includes the maximum radius of hurricane force winds and tropical storm force winds, because every storm is different.

You might have a very compact storm, but you could have a storm that has hurricane force winds or tropical storm force winds extend hundreds of miles from the center, which is important, because if you have a storm like Helene that's tracking offshore and over the Gulf, and then eventually making landfall with the Big Bend, but staying offshore Tampa, you can still have those winds impacting the land, and you have the storm surge issue as well.

But yes, we get those updates from the National Hurricane Center, which gives us a wealth of knowledge, and it also helps us to better communicate the risks to the public.

Mary Shedden - 14:43
And when you're watching I am curious. I've never asked you this.

When you're watching us on Zoom, one of the things that you will see is in these calls. So they will lead, the meteorologists lead the call, and they'll say, “Okay, let's start with Miami.”

And they basically geographically, ask every station moving up the state, what questions do you have? What have we not covered? And so something that affects Southeast Florida could be very different. Our friends in Fort Myers, we usually have many of the same questions because we're both in that target.

But what's it like to see the questions coming from these different communities, knowing that we're trying to prepare for that. Is it set? Because I think it sounds kind of wild to hear it.

Megan Borowski - 15:28
I will say prepping for hurricane coverage is a very sobering event, and unfortunately, we've had to go through it many, many times these past three seasons in particular.

You know, for me, I want to provide as much information as possible for each of our communities. So at FPREN, it's almost like we are the meteorologists for every single public media station, and so you want to provide the details and be there for those neighborhoods. So for me, I take it very seriously. I'm very, it's very, you know, sobering. And I am, you know, I almost, I don't want to say, get a pit in my stomach, but I start to get a little emotional, because it's, especially when we were forecasting Ian and when we were forecasting Milton, because we have these highly populated areas that are going that I know are going to get impacted, and knowing kind of an idea of what the aftermath pictures are going to be like, it is very emotional.

And so I am on, I don't get much sleep when we're preparing, and it's a full week of preparation and recovery, I don't get much sleep. But I know it's important, even if we can just get information out to save one life during the storm coverage, that's good enough for me. Where it's like, okay, I need to be on, I need to be focused all the time.

Mary Shedden - 16:46
I will say it's an incredible blessing also to have meteorologists, because we can focus on the other information you need, like power outages, things like that. We are, we're not trying to

forecast.

I mean, we have some, you know, everybody here, if I say Denis Phillips. We all know who Denis Phillips is. Everybody knows Denis Phillips, and he does a great job. And meteorologists are a gift. And I will say, you know Megan and her colleagues, they at starting at 5am they'll say, “Okay, what stations want extra information?” And Megan will get on the line and talk directly with our morning edition host or somebody else, so that we are getting more information. And that is a real gift. So thank you. Thank you.

We're going to talk about one to two days out. We're more focused, preparing information, and we're more specific. These are the times when people are saying you need to evacuate now. These are the times where we start shifting into what's called phases. We have phase one, phase two, and phase three. And the folks at FPREN, we kind of collectively say it. But when do you need more coverage? But can you explain the phases?

Megan Borowski - 17:58
Right. So phase three coverage is kind of like our normal operation, with maybe a little bit of extra coverage. And this is where we'll provide content. And mind you, it's a staff of four meteorologists, and we're covering weather for the entire state, so testament to the team, we're doing a heck of a job. But we'll provide additional coverage for Morning Edition and All Things Considered, in the afternoon and sometimes the noon newscast, if stations request it, but we'll provide additional audio bites, and we'll also provide if anybody requests it, interviews.

So we'll get on the zips, and we'll do talk back interviews with any hosts around the state, just to provide additional answers to maybe location-specific questions. Once we get to phase two, that is our live, our live storm coverage, and we'll be providing updates about the storm at the top of the hour, and then we provide a bottom. So, top of the hour would be like, I think we're at 04 past.

Mary Shedden - 18:53
Yes, so the NPR newscast starts at :01, so you're looking at a clock straight up. One minute after the hour, the NPR newscast starts. It can go to :06 or :07. At :04, stations at four minutes after, stations have the option of doing a local newscast. It's at that time we hand off to FPREN.

Megan Borowski - 19:15
So, we’ll cut in, and we'll broadcast to any station that decides to pick it up, and we'll provide updates on the storm. So typically, I like to do a current overview of the statistics of the storm. Now each each member of my team is different, but for me, I give the statistics of the storm, what's currently happening. Where do I see particular cells within the storm that I'm watching?

Maybe for tornadoes, if we're having those at our bands move on shore, and then forecast for the next 12 to 24 hours? What do we expect? Where is this storm going to go? What are the biggest impacts and what is the timing? I think those are the two big things that I like to hit

impacts, the location, and the intensity of the impacts and the timing, when is it going to come and when is it going to leave? So that's phase two.

And then at 30 minutes past the hour, we'll provide an additional 30-second update. That's for something more like maybe a storm that is approaching, not making landfall yet, still on its way, or something like a tropical storm that isn't producing very, very intense impacts. Once we get to phase one, that is our wall to wall coverage, where we will be in the studios and our home for FPREN is the studio of WUFT up in Gainesville at the University of Florida. And so we'll be in the studio there, all around our little we've got a little radio Island, we like to call it, with a bunch of microphones, and then the sound board right in the center. And we will be sitting down there. I'll probably have about three screens up in front of me, each with different data sites, sets coming in, and that's where we talk about the storm. That is storm tracking the entire way.

Mary Shedden - 20:44
We have a similar setup in at WUSF, and we have where we, between the two of us, our station is providing around the clock coverage. So you're spending about 20 minutes every hour providing meteorological information, detailed information about the status of the storm, where it's at.

By the way, we're on radio, yeah, and so you really have to describe it absolutely and and then the other 20 - 25 minutes of the hour comes from WUSF.

And so we have a rotation of three anchors who take two hour shifts and a producer and an engineer, and every two hours they're sitting in that chair for two hours, they get a rest. They don't get to sleep. They get to sleep occasionally, but no one sleeps more than two hours. And we do that until it ends. So for Helene, we were Helene and Milton, I believe between 13 and 15 hours in the studio live, and it was a team of about 12 people in the newsroom, our incredible engineers, our digital team, we were pumping out not just digital information, radio information, which is vital when the power goes out, but also social media.

We will take some of the things that Megan says in those little live hits, we'll put it on an Instagram post, and 10,000 people will be informed that maybe didn't even have a radio but they saw it online, so they had that information. That's what we're doing around the clock, and it's intense, but it's probably the work I'm most proud of.

Megan Borowski - 22:23
Yeah, once, once we go into phase one coverage, it's all, it's, we like to call it a marathon. But for me, time goes like that. I mean the amount of information that we are getting in from National Weather Service, National Hurricane Center, Storm Prediction Center, Weather Prediction Center, getting all of that information in, plus from emergency managers, filtering that, getting it ready, getting ready to have conversations for 20 minutes throughout the hour. And then we're also writing digital stories in that time, we're producing audio content that we're recording and sending out to stations. We're producing social media content that we're posting on our Florida Storms account. And we also partner with PBS television stations across the state of Florida.

So we're also producing videos and Facebook Lives all while we are doing that round the clock coverage for the radio. And so we are trying to maximize our output so we can reach audiences wherever we can. Because the whole focus, you know, is getting information out there.

Mary Shedden - 23:22
I think one thing that we're very aware of is people without access, you know, without electricity, radio is about the only thing you have. And so many of us are connected to our smartphones or the internet in some way, and we are working really hard to make sure that the radio has as much information as possible.

Personally, I was without power for five days after Milton. I know what that feels like, and so and we are trying to make sure that we get that information to you. We also know that a lot of people have evacuated and and if you've ever experienced and evacuated on I-75 you know what I'm talking about, and it's those people are just they may be safe and they may not be local, but they're just as worried about their homes as we are, and when we're here. How do you stay focused on weather then?

Megan Borowski - 24:18
During a, during a storm, or -

Mary Shedden - 24:19
Yeah, during the storm. Do you just block everything else?

Megan Borowski - 24:23
I do try to block everything else out. I mean, you know, we all live in Florida, and so I get worried too, and it's, it's kind of hard not to think about, oh, what's going on at my house? Or, you know, is everybody safe? But I don't know.

Yeah, once, once I'm in the studio, once, you know, it's my shift, which is pretty much until the storm is over, I try to just think about the mission. What is the mission of APRN? What is mission in my job? And that's what I'm here to do. That's what I was hired to do, and that and coffee.

Mary Shedden - 24:53
Coffee is key. Coffee is key. We ran out of coffee during, I think right after. There were people openly weeping.

Megan Borowski - 25:01
Yeah, it's the little things, but yes, it definitely that helps keep things going.

Mary Shedden - 25:06
Yes. So after storms, I think last year, probably the toughest lesson that we all learned is when a storm passes. First of all, as you mentioned, Helene did not hit, the eye of Helene did not hit our area, but my gosh, it devastated so many of us. And the word storm surge and flooding, and it's not just in those few hours after a storm, it goes on and on.

Can you tell me a little about how you're thinking eye wall has passed. It's, you know, it's dissipating. You're almost relieved. You are relieved that that's happening. But you know, the floods are coming, for lack of a better word.

Megan Borowski - 25:49
Yeah, and, of course, it's different for each storm, right? But we saw, I think it was Helene and Debby as well, very heavy rainfall over Central Florida. And all that rain is going to run off, and it's got to go somewhere, and it's going to go down the rivers. And so even though the wind threat might have subsided, or the storm surge threat might have subsided, you can still have fresh water flooding that impacts our area, which we saw. So I think about that.

You know, my mind now goes once the storm has passed, okay, let's look at river gages. Let's look at what's coming out from the local EMS of dam levels, and are they going to be releasing dams and things of that nature. And I try to talk about that when we are live, you know, when the storm is starting to die down a little bit saying, you know, okay, the risk isn't totally over yet. Of course, if there's no risk, then I'll say that.

But typically, speaking, we saw it in Lakeland actually, the water was rising, you know, and it's blue skies, and everybody's like, what's going on? So, yeah, I tried to see what is actually going on when the storm's happening, who's getting the most rainfall, and then predicting that, predicting the hydrologic flow of where the freshwater runoff is going to go.

Mary Shedden - 27:01
Yeah, I think flood gages, the river gages, have become something I am intensely paying attention to. It's probably the thing that I worry about most, because so many people think it's not going to happen, and because there is that just physical release of -

Megan Borowski - 27:21
Is it over yet?

Mary Shedden - 27:22
Yeah, and the dark and the rain and the winds, and you feel that release, but yet. So I mean this wonderful, wonderful place we're sitting in experience that with four feet of water. And so, you know, you know exactly what I'm talking about. And so how can someone pay attention? Because I think meteorologists are telling that story. But how can somebody be empowered to pay attention in their own way to river gages? You know, the Alafaya, the Hillsborough?

Megan Borowski - 27:55
Well, I mean, the USGS has a great website and great resources. They actually have plotted and you can click on the map

Mary Shedden - 28:04

The Geological Service?

Megan Borowski - 28:06
Yeah, the US Geological Service, and you can actually click on the map and see the different river gages. And what it shows you is the past record of over the past, I don't know what it is, it might be 24 hours of where the river level has been, where the river level currently is, and then the prediction of what the river level is going to be in the future. And it has a nice color code on it as well of, you know, if it's going to be in flood stage or above flood stage. So that's something to think about.

You know, maybe checking out if you're so inclined to do so. You know, WUSF will have stories on we'll post stories that they'll air of the risk of river flooding. And I would also check out, I think it's ready.gov and then also Florida Sert, their website will have a know your zone map. That's F-L-S-E-R-T, yeah. And you can kind of see if you live in a in a flood zone, so either for fresh water flooding or storm surge. And you know that can be helpful to check out that resource.

I think most of us, if we've been on our properties for a while, we kind of know our vulnerabilities. But also, you know, there's a lot of transplants that are arriving to Florida and may not know. So takes about five minutes to look and peruse these websites, just to give you an extra level of knowledge of, okay, I live in a flood zone, I might need to think about evacuating.

Mary Shedden - 29:24
And even if you don't, I think one of the big things we're hearing from home homeowners is they were told, Oh, you don't have to buy flood insurance, but, I hear you, you might want to get it anyway. And so I think that's one of the big lessons I know. We at WUSF are trying to help remind people that you know whether or not you're in a flood zone, the storms because is the rain is coming harder, it is coming in a different way, and the intensity of it can truly have a profound impact that we may not have seen before.

Megan Borowski - 29:57
And the thing too, that you also want to think about is, don't just take the intensity of the storm and be like, “Okay, it's just a tropical storm. I'm going to be fine,” because we've seen many, many, many times tropical storms dump feet worth of rainfall over a particular area. We saw Helene was an extra tropical cyclone at that point in the mountains of the Carolinas, dump a tremendous amount of rainfall.

So don't think that if a storm is a quote, unquote, weak storm, that you might not have catastrophic impacts. I don't like the, you know, I understand we have the the when the Saffir-Simpson scale to classify storms, and it's important to have for ease of communication. But it also, unfortunately, has kind of created this, this approach, I think, and I'm, I fall victim to it too, where, oh, it's just a tropical storm. It's never just a tropical storm, or it's never just, you know, cat four or cat five. Take each storm seriously, because each storm is different.

Mary Shedden - 30:54
So are you saying you're a cone of uncertainty hater?

Megan Borowski - 30:59
No, those are two different things. Actually, they're trying to narrow down the cone. They've done a great job at the National Hurricane Center, but that's another great point that I want to bring up again, is the cone does not show where impacts are going to be confined to.

It's showing where, based on the models, where there's a 66% chance that the center will track somewhere within that cone, but there's a 33% chance that the center could track outside of the cone. So it's all mathematics and statistical modeling.

But you know, impacts can range hundreds of miles from the center of the storm. So if, even if you have a storm that falls smack dab right on the track that the NHC puts out as a forecast, you're still going to have impacts from the center. So something really to keep in mind.

Another example of that is Southeast Florida, not in the cone, not right in the track of Milton. And we had catastrophic tornadoes on the East Coast. So you know, impacts are not confined to the cone or to the center. So always think about that.

Mary Shedden - 32:04
I will say on WUSF.org, we have a great hurricane guide. I depend on it myself. But also, we are using maps from the Florida Public Radio Emergency Network that are updated all the time. And while you may miss Denis's latest update on TV, you can go and you can look at those maps.

One of my favorite is tropical storm wind expectations and when. And it kind of it's a grounding, those maps are very grounding for me. You've used the word sobering, and I think sobering is the whole thing, but they kind of go, Okay, this is what I can expect, and so I highly recommend those maps.

Is there anything I've forgotten to ask you, because I'm about to hand over the microphone to these guys?

Megan Borowski - 32:50
Well, I am going to plug the Florida Storms app. Yes, and you should, if you go on iOS or Google Play, we have an app called Florida Storms. It's hosted by the Florida Public Radio Emergency Network. We've got a radar map. And also, cool thing about it is we have, if you enable your location, it will geo locate you to a certain degree and identify that you're in the WUSF market. And you can actually stream WUSF broadcast right in the app, which is great.

Mary Shedden - 33:16
Yes, it is, and it's an incredible thing. And there's no rain right now. We're good. I just looked.

So my wonderful colleague, Meghan Bowman, who is part of our Your Florida team, she is going to have a microphone. And if you have a question, if you want to just raise your hands.

Audience member - 33:35
Greetings. Dennis France, from Sun City Center. My question is, how much do you depend on artificial intelligence in your predictive models, and are what you're telling me your predictions already using it? Or do you see a future that could enhance your forecast?

Megan Borowski - 33:54
That's a great question. I am not at this current moment, using the AI models, but I will say Google just released their one of their AI models, and I noticed a couple things. It did pretty well. What they did is they put in past data from last year before storms developed, and the model did pretty well at predicting I think it was Helene, Milton, and Debby. But what it did not capture was the rapid intensification of Milton and, I believe, of Beryl as well. That was our early season storm last year. So in terms of track, I've noticed the model is pretty good, but still having trouble with rapid intensification.

So right now, I might look at the model just to see what is it thinking? I would not just say, Okay, this is what Google AI says. That's what's going to happen. I think down the line, AI in predictive modeling is going to get better, and we'll see it maybe have a better grasp on rapid intensification. I will say that that part of meteorology is also pattern recognition on the humans part. And I've noticed that the National Hurricane Center meteorologists do very well at capturing rapid intensification where the computers do not yet. But to answer your question, I do think in the future that we're going to see a new a new era of weather models that will, you know, incorporate artificial intelligence in modeling. We're not 100% there yet, but down the line, it will be an extra tool that we use. It's not the only tool, and that's something to remember, is that models are not the only tool we use, but I thi nk it'll be very helpful.

Audience member - 35:40
I'm a third generation Floridian. I've been through more hurricanes than I care to remember. But in the Tampa Bay area, they lead a very, very charmed life. And the last major hurricane to hit that area, which would be a Cat 3 or what was in 1921. I don't remember the name of that storm to save my grandma's life, but, but it's just something about it places all you wouldn't say that in the Panhandle or the East Coast of Jacksonville, all that sort of stuff. But here they just remember Charlie, we go right out there. And anyway, it's 90 degree, I think there's skid marks. And the forecasters, they were just miffed because it didn't hit, this is their own, but it just went right by. But there's something I don't know what it is.

Mary Shedden - 36:51
Well, we've actually asked you that question a couple of times. Is, what is it about the Tampa Bay geography, for better or for worse? What are, what is the reality of the bay? So much is exposed to water, but yet it does seem protected.

Megan Borowski - 37:09
Well, it seems like I've been saying that Tampa has lucked out prodigiously over the past couple years, because we thought that Ian was going to, you know, early on, we thought Ian was going to make landfall, you know, somewhere near Treasure Island or in Tampa, St, Pete. And then this past year, you know, I remember seeing the first couple of forecast tracks come out from NHC for Milton. And again, it was Tampa's in the bull's eye.

I will tell you that the steering for hurricanes in the atmosphere, it depends on how intense the storm itself is, of which winds like, at what level of the atmosphere the winds actually can help guide, guide the storm itself. Ultimately, though, of why Tampa has been protected, I don't have an answer. Luck, maybe I will say, you know, it's been a very, very long time, and so, you know, well, hopefully this isn't the year, but I wouldn't let your guard down is what I'm saying, yeah.

Mary Shedden - 38:08
And I think with Helene, I think that was a sobering lesson, because if the storm didn't hit, but it was catastrophic in the damage that it did do to our homes and our communities, right? And that was surge?

Megan Borowski - 38:24
Yeah, that was surge. I was gonna, you know, mention that a little bit of, again, you don't need a landfalling storm in your backyard to create, you know, a catastrophe because of the little opening of, you know, you have the Hillsborough Bay and the Tampa Bay, and then you've got the opening into the Gulf.

You need a storm that makes landfall near or just north of Tampa Bay to really have that funneling fishbowl effect, to have all of that surge go into both bays. And luckily, Ian and Milton both made landfall to the south, and so you actually had offshore winds and draining the Bay. You have the images from the news, newscasters coming out of, “Oh boy. You know, we're on Bayshore Boulevard, and people are walking down onto the into where the water should be.”

So, you know, the the geography there, it's got to be a very sweet spot of the storm, either nearby or just to the north. And in order to kind of maximize that storm surge potential, of course, the stronger the storm itself you're going you're gonna have stronger winds. That's going to be like a stronger bulldozer, so to speak, bringing bringing those waters inland, you know, and think again, you it's kind of like you need a pinpoint precision to get that to happen.

So, you know, hopefully it doesn't happen this year. Hopefully it doesn't ever happen again. But I always err on the side of caution of being prepared for it to happen that way, if that, you know, once, once in a lifetime, event does happen. It you are impacted, you know, in a very minor way compared to if you're not prepared, right?

Audience member - 39:56
So I'm from Michigan, and I remember lots of tornado. But I'm confused about what

happens with the hurricane that causes the tornadoes, which comes first?

Megan Borowski - 40:08
So it's all about the structure of the storm itself. So typically, speaking, you could get a tornado on any portion or location within the hurricane itself, but typically we'll see the highest concentration in the right front quadrant of the storm. So if you think of the hurricane as a circle, it's going to be that that first quadrant between one and three relative to storm motion.

And it's all about the rotation of the hurricane itself, counterclockwise rotation forward speed of the hurricane itself. Kind of helping to get those thunderstorms in the outer bands rotating. You need rotation of those thunderstorms to have the potential for tornadoes.

And we saw that with Milton, as the hurricane itself was tracking northward into the Gulf. We had outer bands wrapping from southwest to northeast into Southeast Florida. And you know, you've got thunderstorms already in place. You've got a very humid air mass in place. You've got the rotation now coming into play with the thunderstorms. We had some pretty strong tornadoes. We were tracking with, I think it was W- it was out of Fort Pierce. We were tracking with that station, really wedge, like tornadoes tracking up I-95 and into St Lucie. It was, it was remarkable. My job was on the floor, because I was seeing images of what I would see with storm chasers out of the Midwest.

Mary Shedden - 41:24
Well, I was going to ask that for those of us who are third generation Floridians, what's what when we hear about Tornado Alley in the mid Midwest? Is it a different kind of system, or is it still that rotational?

Megan Borowski - 41:36
So it's, you know, the physics for tornado formation are still the same as you need to have a thunderstorm, and then you need to get the thunderstorm to rotate, and then it could spawn a tornado. In the Midwest, you'll see, you know, a very humid air mass being brought northward. You know a humid air mass from the Gulf being brought northward, and then you have very dry air from New Mexico and Arizona shifting eastward. And you have this clash of air masses where you'll get either discrete or just like singular super cells, we like to call them, that's the technical term. Or you'll get a squall line, like you'll see along a cold front develop. And then you can get damaging straight line winds.

With a tropical system. It's, you know, it kind of looks the same. I mean, if you just took one of those cells out and plopped it in the Midwest, that's what it would be like, sort of. But with the tropical system, you'll kind of have a line of stronger thunderstorms, and a couple of them could gain rotation. Overall, if you break it down, the general idea is the same, but the physics are a little different, because with a tropical system, you're dealing with a warm core cyclone, as opposed to out west. I know I'm throwing a lot of technical terms out there to scare me. I know. Just know that ultimately, the weather that is produced by these thunderstorms is the same. It's

just as dangerous. So tornadoes are the same on the ground in Florida as in the Midwest. They are dangerous. You need to get inside.

Mary Shedden - 43:01
This is a total tangent. Sure, when did you decide you wanted to become a meteorologist?

Megan Borowski - 43:05
You know, it's the quintessential every met has pretty much the same story. You're yay big, you're like two, three years old, and you see a thunderstorm. I'm originally from up north, but, you know, my mom went to school down here. We would come down to Florida very frequently, and seeing thunderstorms, summer thunderstorms coming in, you know, from the Gulf, along the sea breeze, just, just watching them. It's just amazing. I don't, I don't know you just, it's amazing to, in my opinion, how nature is trying to find equilibrium or peace, and out of trying to get back to that equilibrium, it creates chaos with the weather, and I think that dichotomy is just so cool. And that's why I love it so. But I was, I was very small when I decided I wanted to be a met.

Mary Shedden - 43:49
And your and your passion is so clear, and I'm so glad I got to learn that about you today. One more question?

Audience member - 43:58
Adam from St. Pete. What is it about the west coast of Africa? That every year we know that hurricanes happen.

Megan Borowski - 44:05
So there's the West African monsoon. So just south of the Sahara Desert, there's an area called the intertropical convergence zone. It's where you have winds near the equator that start to converge. And so you'll get thunderstorms that you should see start to pop up during the summertime months. There's also thunderstorms associated with a another climatological signal called the Madden Julian oscillation. I won't get into that, but what happens is you'll have thunderstorms over Sub Saharan, Sub Saharan Africa, and those tend to create disturbances in the atmosphere, and you have to think of it as almost like creating waves, or like a ripple in a pond. And so you have storms start to trigger over Africa, which creates a ripple of a disturbance propagating westward toward the coast of Africa. And if conditions are right and they're supportive of thunderstorms, you can have almost like a ripple continuing to go and go and go and go and go. Once the wave gets over the water, if you have very warm waters, that's fuel. So you can have these storms start to multiply.

So, I've got a gif saved to my computer that I love watching. It's of hurricane Ian, but it's a satellite that follows Ian as it develops, and you can see just a couple of clusters of thunderstorms come off the African coast. It's over warm waters. You know you have, as it's tracking over the Atlantic, it's kind of dismal, but you still have something of organization. And then it hits the really warm waters of the Caribbean, and it just explodes. And it's just quite

remarkable watching the disturbance stay alive, and then all of a sudden, start to get the rotation. You see the higher cloud tops, and then you can clearly see the rapid intensification, the eye wall replacement, and then landfall. But with the African thunderstorms, it's all you just need, like a little the first tick to get a domino to start falling and then as a chain reaction.

Mary Shedden - 46:05
Wow. Megan Borowski, senior meteorologist with the Florida Public Radio Emergency Network, it has been a joy.

Megan Borowski - 46:10
Thank you for having me to you.

Mary Shedden 46:14
Thank you. Most importantly, thank you all for being here today. Please. I hope all of you have a battery powered radio, because WUSF is ready to serve you no matter what happens.

89.7 for WUSF
Classical WSMR, when it gets serious, we start simulcasting there, and that's at 89.1
WUSF.org and also on your favorite social media channels.
Thank you. Thank you.