**Brooke Anderson:** Good afternoon thank you all for joining us today, we're doing a workshop about how we assess exposure to Tropical Cyclones. I am thrilled to welcome a whole group of people who will serve as a round table of discussants today. The people who are joining us right now or Balaji Ramesh, Sharma, Andreas Neophytou,Darren Sun Gregory Wallenius, Kate Burrows, Kate Weinberger and Karma Zoom.

*Can everyone see my slides oh sorry my apologies where's Robbie alright let me try again everyone see how wonderful thank you*

All right I wanted to start a little bit about the motivation today.I've been doing work on tropical cyclones for a little while to an niehs k99 ROL And as part of that I developed a hurricane exposure that helps in exploring and county-level hurricane exposure really interesting question is how we looking at Tropical Cyclones currently along with Andria's explore a little bit more people who study the human impacts of look at a need data on the exposure to this Workshop is motivated by that and we have a number of live participants but I know we also have a lot of participants hopefully join the regular call you to participate as well if you please would write your questions or comments in the Q&A and then those will come over and and two of our discussants Mario Andreas will be helping and invoicing your comments and questions as we go through when you do not see things to her that you include your name to so we can say who said it our discussion today is going to be driven by a survey this is a survey that I invited a number of people to take if you haven't taken it already you're welcome to go and take it we would love to get your input on it as well I put the link in here and there's also a copy of this link that's been put in the chat if you like to click on that images flies I'm going to go through some of the responses that we had initially from the different participants on that as a way to start our discussion so do you like it you can get this start speaking about 10 minutes to do an overview of the survey and then I'm going to introduce some of the general seems that came up and as we go through those theme I'll take a break and I have some specific questions and comments I want to talk about and spur for the discussion and I'm not sharing my screen and we'll move into a discussion point and then we'll move back and forth I put in on this survey was incredible. There were a lot of topics that were fascinating and some of them we won't get the chance to get to today so I hunted morsley at 5 then we'll probably need but we'll see as the discussion so what happened start with an overview of the survey as of last night when I was pulling everything together we had 12 participants I think we already have two more and so I'll rerun this analysis later in the week or anybody but I'm one of the questions I asked was if people have published yet and there is one published favorite for the Lincoln here it's a really interesting I may be biased because I think it's really interesting research has ongoing so they're three papers that are submitted are under review at least 2 in preparation and other people on this call or who answered the survey are at earlier stages and their project I think that this is exciting because it's been lovely and wonderful to be able to watch the different the different seminars presentation to be able to go back and visit them later through the recording but what I have missed those times in between when we have coffee and so I really am excited that a lot of these responses are coming from that place of what are the questions on my mind right now and hopefully the discussion today in this Workshop conserve is that space overview of the kinds of things that people are studying by ask what the hell I'll come and Pinterest wise and decide a large range the respiratory outcomes cardiovascular mortality mental health outcomes renal outcomes gastrointestinal injury birth outcomes and neurological in terms of the population of Interest most of the people who responded or looking at the general population but a few are targeted in two specific populations including older adults children are women who are pregnant I also asked about where in the world people were studying this to Tropical Cyclones can form and seven different bases around the world as shown those here and I asked people which Basin they were we had one person you've done a study that flipped worldwide that we have some representation from every decent but are discussing stay are primarily looking at the Atlantic Basin as long as it is well as a few people looking at stuff in the Northwest Pacific term for the area study this ranges from single cities very detailed studies of single cities through state or large portions of states and in large regions like the southeastern United States are in the eastern half of the United States through to the level of countries that are some cities of China and then also that one study that was too close even the last thing I wanted to give us an overview is a question of are you using primary data where you going out and collected at yourself in terms of the exposure data or is it something where you are relying on secondary data that was collected through some other mechanism for example through different weather monitoring organization and by and large the respondents for this survey or are almost exclusively using secondary so I think that's really interesting and driving this this question of how we measure exposure little bit about the physical hazards that people think might be at play because I think this is that she point is that the exposure to Tropical cyclone tropical Cyclone can bringing number different hazards the system communication from from Hurricane Florence which is a storm that several of the participants had studied in this case it's laying out all these houses that we can get it done a really nice job here at communicating the level of threat because different storm can bring different levels of those threats survey respondent I gave him a number of physical hazard hazards and ask them to rate each in terms of How likely they think they are in the causal Pathways for that all outcomes at daycare so they have a chance to build a shed where they had six different hazards that they could consider and then I asked them for each to rate the likelihood where one is that it was pretty unlikely that it's playing a big role in V is up where it's very likely so I'm showing this right now and we got the number of respondents in each but in some of the later side I'm really going to focus on looking at the houses were people rated at s very likely this 4 and 5 but being something in the causal pathway so if we look at that here are the number of respondents out of 12 total at the time I did that who raided each of these physical hazards and being fairly likely to be the cause of house by his next day care about some of the hazards that are coming out or heavy rain storm surge and storm winds but there are some concerns as well for Inland flooding tornadoes and landslides for the types of studies that I also asked if there were any I thought this was a really interesting comment that one of the researchers was wondering if changes in atmospheric science pressure might play a role as well and I'm that is where I can people have wondered that that question before so one more Hazard to play it all right. Now I'm headed to introduce what people are working with an overview of the large level concern of having all of these hazards once you get into some specific questions and points and then pause and ask people to join them a discount them the first one is this question of whether we assess exposure using a continuous or a binary exposure assessment so I asked everybody this and you can see the darkest blue studies where the researchers are using a binary classification so they either a person or a community as exposed or unexposed medium color blue are the people who use a continuous metric and then for the latest color these are people who have used a mix of the chew and their research really interesting because of course for all of his study we're doing and in an observational way and some questions come in about are we really identifying something that might be a cost so I'm going to go back a couple of times to stir often Bradford hell in his ideas about causality and not that you can prove anything with one of those is looking at this idea of a genealogy an exposure exposure being associated with a higher level of risk for higher rate and of course for all of his hazards that we just looked at we can create a threshold and divide them into a exposed or unexposed but they are things that inherently have different levels of intensity so it is a case where the underlying piece tends to be something that is continuous what are the survey questions I asked her what are the biggest challenges are limitations that you faced in conducting are planning a tropical Cyclone at the genealogy study and one of the responses that came out with that but it is hard to define the appropriate spatial scale and stuffing tropical Cyclone exposure and further in examining the Pacific Lee noted as a key challenge I'm going to stop right here for a thousand discussion and some of the point that I would like to discuss its to talk about is if you are doing these studies and you're looking at a binary classification of exposure so exposed some of the questions I think I'm I know we all recognize that sometimes there are a lot of good reasons why you might want to start with doing an expose expose dichotomy anybody who is continuous and doing measurements it would be really interesting to hear about how you're doing that and I'll do it their concerns about non-linearity and that exposure response and if that's something that's creating difficulties all right so I think they will start let's see if we can start as Robbie Park song you assume we have a few people who have very nice spots on Monday if you didn't get the chance you might want to go back and do those so would you get us started by talking a little bit about how you and you decided whether you would use content continuous for a binary metric and exposure some of the challenges that came in with that in a decision thanks very much as people may have seen in my talk on Monday buy used to Binary exposure so National study all the studies which were exposed to at least one event and what are the reasons that we thought that was interesting is because first of all you would get a good amount of exposures and I think that is so interesting policy implications for whether or not it's easy to release disaster relief planning firms and things like that so I think this disaster management response was playing in fact I think we're also interested in how different categories will catchments of wind speed may be important inside one of the things we looked at was isolating hurricane-force winds on the bus from other tropical Cyclone twins to examine whether the relationship by hurricanes mainly alone or otherwise and I think we found it it wasn't just hurricanes that was of interest to us but to try and find an appropriate number of exposures and also to try and understand from me just that you're making this really wonderful Queen at the idea that even when you chew a binary exposure metric you might take a few thresholds to already start getting a picture of it looks like certain certain threshold are there others on Monday that she had used I think in terms of percent of a community that was that was flooded are there others here doing studies that have taken that approach as well as doing a binary exposure assessment but then investigating where where that threshold might just go I guarantee you know binary exposure because it's so easy to communicate as Robbie I'd be interested to know if anybody looking at many many many counties and there's a certain number that being exposed but then there's a bunch of counties that are 0 and what do you do with those counties the Restaurant Group introduced zeroxposur but they don't find me depression for exposed anyone else having trouble hearing bread but I left this place that you were raising about the idea that when you do split up at a threshold you've got some that are just misses on either side of best friend. Threshold and that's really hard to tell her she kind of got that right and the implications I just wanted I just wanted to know how do you decide how far outside of a hurricane or tropical Cyclones pass you need to be in order to be working on a project with counties that are close by threshold seemed like the right reference group think about is like a chillin with me when I reached out to maybe the wind play the Ouija right now in the work that I've done we're looking at those as well and I think this is a really interesting question will get in his later in the workshop that I'm so many of the pathways we think might be a certain. Just that we think a certain level of a physical hazard as a direct impact on your body and how it plays through other elements like a property damage and power outage number of other things that we'll talk about it so that game of seeing the physical exposure data but then trying to look at Scales it like the Beaufort scale at the central winski's to try to get an idea of descriptions and how that plays through to what you see on the ground in terms of other Pathways that could be triggered at that point so I think it was mostly heard from people who were doing in binary exposure for those of you doing that I don't hear any argument that we don't think these are continuous underneath and there might be an interesting relationship there would you like to study this is something continuous you're just still trying to figure out the right ways to do this or are there some other reasons why you really think it is good to stay with with Jamaica by exposure I saw a Balaji I think you had your hand raised yeah we eat we have a comment from the audience along those lines to saying this seems like a typical pain whenever you're applying an extreme categorization and almost seems like a categorical approach for you have more than one category might be necessary and that might be something they comment that the audience right now just to put in your mind but let's come back and revisit it later but I think this is an interesting question to start thinking about now that for us to revisit leader because I think this tempted to play with the idea of whether we're trying to measure is a physical hazard where there are extensive monitoring networks in models and things like that when we had a wealth of data we might need to figure out how to use it but it's all there going through like power outages or water quality or some of the other pieces where it might make more sense to to be able to click primary data so I just got done spent the full session to please submit any comments that you have to chat so I think we'll continue on to the next point and I will share my screen again 7-second think I wanted to talk about in this is a pretty Global issue not just something that this going on with exposure assessment but as we talked about it let's talk about how physically for the exposure and that's the idea of being single swing through in-depth case studies vs. studying lots of storms over a long. Of time and I think it's critical that some of both of these but I think it's also really important to think how we integrate the results across this different types of study so one of the questions I asked for everybody that participated with whether they were doing mainly studies a single storm end up case studies mainly studies that are looking across a lot of years for multiple storms for a mix of the chew and we were pretty well divided into people who were focusing on one of those are the other people who were doing a mixture of the shoe for the single storm study stars that have been studied included Hurricane Irene Sandy Harvey Florence and she studies on Matthew and them for the time. Study these tended to range for the most from the late 90s into the early 2020 tens and end up to 2018 so there was a quote that I heard on NPR yesterday that I thought was very informative for this whole topic of tropical Cyclone epidemiology of course I think all of us are probably on its way and is expected to hit the United States this evening until the early morning hours tomorrow and this is something that was said by Linda Hidalgo cuz one of the people responsible for encouraging people to evacuate Firestorm is a template for what could or will happen and of course that's very good advice as people are preparing but it's also something that we're always challenge with in this field because we are characterizing what happened in past stores that are open if not just that we do a good job of staying what happened to something that happened already we really want to get some idea what might happen next and how would you prepare and prevent adverse impacts from future storms that come so there's this interplay of storms being very complex and storms being very different in each dorm being his own thing but at the same time do we just throw up our hands and say there is no way that we can get information that we can use help figure out what the risk for the next two or more or do we try to figure out how we can take that complexity and still try to learn something what is a comment from the survey in terms of the major challenges is the one of the respondents said I have not yet investigated single strand thermostat you in multi storm but I think looking at single specific effects and then on the other side of things I'll go back to it to Bradford Hill one of the other points that he makes is that we want to look for consistency across lots of studies it across lots of exposure because it might be more likely that we might expect something in the next big storm that comes if it is a relationship we have consistently seen in different locations in different circumstances in a different time does challenge. It's very appropriate for the exposure assessment process might make our study comprable when you're looking at other study so you can say with confidence we really did see a different Association and we don't I think it's how we measure exposure rather than not being able to compare those results and not knowing if it's a difference in statistical modeling and study design or indica questions that I asked was what challenges have you had and getting exposure data that is relevant for tropical Cyclones and this is from the feet and one of the things that they specifically brought up if it's challenging to get exposure. Of it's consistent across multiple countries starting trying to assess exposure Beth and where appropriate for that storm but also in a way that translates when you're trying to compare two results from other storms this is another one again this is kind of pointing towards that idea the challenge that we have an exposure assessment given that we storms are so different so this person said I wonder whether the extent to which a specific physical hazard that I'm looking at is a good proxy not just for once were but across all of the storm that you might have particularly in the context of a case where you think a lot of the pathways for impacts are going through the environment are other indirect so we'll take a break here again and see what other participants had to say about this particular question and some of the problems that I have for this was if you were doing a single storm study what characteristics of your exposure assessment do you think might be hard to translate to another storm with her it was there something in terms of the links of flooding or something like that that might not be consistent across the Eastern studies which challenges have you had and feeling like you could mean a meaningful ESS exposure across lots of different storms where the storms might look very very I think maybe let's start with an apology for this because I think you did a really interesting study that you presented on Monday where you talked about this question of how you figure it out for your specific store on the flooding. To include in your assessments and not just a threshold of how much flooding but how long to look after the event to identify that sledding call Audrey home. That sounds like that a process that can translate to a lot of different storms as well if there was a specific threshold for both how long you look and then the level that you look at once you got that old. Is that correct if they're all going to take Andrew to know I believe that you are planning on doing a study on the other end of things it's going to look at a lot of storms so how are you thinking about trying to make sure that that exposure so she got multiple Hazard so I'm interested in this storm following a long way so that I can look at multiple special maybe some combination of a flooding plus a win over a specific. Of time in terms of looking across multiple timers that I'm interested in Brooklyn so one of the things that I've been thinking about also applying what is the appropriate area 1 things about you brought up an and one of the things apology brought up was for this IDF letting the persist Jensen and one thing that can come up either in single storm starting to run multiple when's to consider any storms on the heels of each other so lit right now we have Marco and for some of the things like flooding into the one of the next have any of you thought of that in the context of exposure multiple storms and I miss you already when you do that you're having any kind of selection issues with selecting places that aren't and Abby had areas with losing a lot of Florida for example if you're doing a large-scale study do you want to say something sheet with the research and I know it's were early on in the research so like right now world is like what is the effect of decks for a song that goes like this what are likely the health impacts of it how worried should I be then then you know one set of assumptions and exposure how to build resilience sexy things we could do to build resilience thinking about it absolutely that's a great point we have a really interesting question from the audience I wanted to bring in here to and how can funding agencies support looking across multiple storm and review sections are interested in specific exposure please very nicely built at 1 exactly what is on what the question is and to the extent that when you write the proposal TV show trailers are steamed rice The Proposal are very clear on what the research question is and why they're interesting and what's the importance of the research question would be reasonable people and they was understand what's the point I think the tricky part with some of his super new and exciting fields and exposures that we want to do everything at the same time and it's all a bit, so we're trying to put many things together and then that's clear research well-defined research question is a bit lost and I think that's the problem. You are simply by and want to see something more specifics I don't necessarily think that they want to see just one basically identical proposal and looking at multiple events in different as long as there's a very well-defined question will be okay with that on average where there is some funding resources that are kind of in the regular Grant cycle but they're also he's rapid response for this is a disaster and in some of those cases a single for Torah study might not just be for us to understand better for the next might even be timely enough for us to take some actions to mitigate what's going on in it and an existing event so I guess maybe there's a role for that as well in the study all right let's continue on to the to the next Marriott we have something I just wonder if it might be looking at how well yeah. Just a question interesting one more thing here and then timing Windows importance for the specific outcome so maybe for some of those longer-term outcomes that we are theater Corning a longer-term exposures having these back-to-back issues might not be as much of an issue because it's the accumulation of exposure versus super cute Events maybe the then yes we do need to know their exposure within the past week absolutely it in terms of exposure at South the winds may come and passed very quickly in one day while being for flooding that might be something that builds up over long. Absolutely and there's an interesting parallel here between review these events and their properties answer to the growing body of mixtures of anemia distinguish between mixtures is it be added in the back door so what do we mean by these cumulative Crank That is a perfect segue into the next little section and looking at the time this might be our last one to work through today but there's plenty of more information about the survey results in the side and again there if there's a copy of a there's a link to copies of the slides in the chat if you would like to have a copy of these yourself so I wanted to survey questions about the biggest challenge one of the responses was just at accounting for the multiple hazards so we went through those different kinds of and I showed which hazards wood carving out that I also thought it was interesting to see if researchers think that many are in play for each of Their Own could be that the gastrointestinal is just late to flooding and maybe the injuries are mostly linked to win and in that case we don't have maybe as many of those problems but if you really think that a lot of these hazards playing into what you're looking at has become more and more of a concern. How many of those sticks hazards each researcher linked at being very likely in the pathway for the outcome they were looking at and for most of the respondents play a role in the outcome they're looking at I also asked what they were putting into their exposure assessment so the first questions were just about what they thought they'd a role in this one was talking about what are you actually using in your study to assess that and some of the main ones here were storm winds and heavy rainfall and then there are also some that are looking at different proxies different sample the distance from the storm track meant to be a prosti for exposures physical hazards and then disaster declarations as a potential proxy how many exposures people were including or Posse measurements and it turns out that people don't tend the survey respondents did intend to do just won a lot of times they're looking at many of these different exposures that they go in so I think this is really interesting because we know that a lot of these exposures can have different patterns this is an example for Hurricane Ivan and and this isn't just one threshold toys for each of these medications you could choose some others but I think it already gives a really interesting picture of how the places that experienced tornadoes were different from the places that experience flood or the main storm winds or even the rain the rain exposures and we see that as well as interesting pattern that her some of these this comes into play with whether we're looking more and seeing more of the exposures in coastal areas versus more Inland once a lot of the storm winds are mostly at the coast because the storms 10 to disintegrate them if they move Inland and lose their energy where is rain can go well Inland so it we have this this I swear there's kind of the distinction between Coastal and Inland counties that comes across with the differences in the disclosures of the experience From The Storm so I asked wish I can turn people had based on the fact that they are assessing exposure to multiple hazards and they think that many of these hazards might play a role somewhere down the track and these are some of the things that came up that if they were using a proxy they were they were worried that might cause exposure Ms classification I'm in some cases they were using one to measure to expose her focus on a specific exposure but there were some concerns that there might be from other hazards that tend to be correlated with that and then some of the other ones there was some concern either from using multiple hazards and not introducing multicollinearity when they when they said their model or that they were using a single Hazard to try to assess exposure to the storm as a whole and then that might be misclassifying the exposure because that might not be will capturing some of the other hazards that might be important so I'll stop and see if we have some more questions stop from the audience that I've been sort of thinking about something came up and it is the degree to which whatever combination of multiple hazards it is that you choose is actually the right way to estimate the indirect or Caldwell Pathway to thinking about what you're interested in and maybe we actually need to back up a bit and think a little bit more about those calls with Pathways in order to better identify which combinations of Hazzard would accurately assess what it is that we're trying to assess so power outages curiosity we have something from you because that would be fine how we there so many mattress methods that could or could not work but they all depends on what we want and we may want to look and independent because maybe we are we want to inform how to better his tractor buildings for example or we might be going back to the comment about categorisation we couldn't make any difference of this scale exposures Hazard to create a categorical variable of a storm send that might be our exposure in space and time so I think starting with a very well if I'm just question again would also help choose the appropriate methods to our group has multiple yes absolutely and I think that'll be the next time we get into but I wanted to raise one more point before we move in there so we've been talking a lot mostly I think about more information modeling in a second we're we're really trying to understand the relationship that happens there's maybe an interest in predicted as well and we anticipate what might be some of the Major Impact Summit View there are starting to hazards that can be that are models models with greater skill by atmospheric winds are going to come over for those than for something so I wonder if they had any thoughts on whether there is a usefulness in terms of this particular piece of modeling especially bringing into account a skill that we have in inches starting of these hazards compared to others as a storm approaches yeah I mean I was just saying absolutely because I think one of them point to study the research stuff relief and so you need to lie. Time for preparation of resources to minimize the risk and some of that would be in anticipation of the reaction to it all fluids so absolutely yes sorry I just wanted to earlier with his baby worth revisiting as well as Farm events previous understanding of previous events dance but one of the things that I really lose in that really strong facial a very Stark facial differential even Within all right I think I want to move on right now and we are we're down to about five more minutes but there's one, that I want to raise in a really interesting question I want to get to we do still have questions that we might not get you about all of these indirect Pathways so I think they have his channel for a little bit longer if you people want to stick around we can talk a little bit about that then but the question that I wanted to make sure we get to Isabel funding so one of the comments that came up in terms of what's the biggest challenge that you face in terms of doing this research is so far funding and we had a question that says that they are interested in what the research Community things as needed from a programmatic standpoint to facilitate disaster research what so I think that these are some really good questions to end on it love to hear if anybody has comments on that point Greg did you maybe want to start on this is always how many years ago senior Ventures at Harvard set up get out the way Lands End of a really specific question and clearly laid out amenable to to be convinced that this is a really important question and you have a solid design to answer that really important question obviously you know more money would be better but I think part of it is so I'll come back with this it and this is for everyone we can start with guys before everyone you are answering that right now if you were the Thunder. Your program officer of the day or what do you see in some of the bigger areas where we can make a lot of mileage if there are mixtures research before and I think it's really inspiring out of the niehs to really support growth in that area has led to some wonderful message you were sitting in the chair at the person against to give out $2 what kinds of things do you think with you for 12 to look at it all maybe a slightly provocative everything we do around climate change. We don't actually didn't you back in his arms to necessarily fun provided money for resilience Community resilience and I think that framing these problems because the field of disaster research is definitely still in its early stages in from a female perspective but there is a lot of research I think if there were better pathways through which we could collaborate with other fields that you have some of this expertise maybe we could build out more effective research programs all right crate so I think that's just wrap up now by talking a little bit about these indirect Pathways and I won't bring up the slides again so we can just talk a little bit about that these have, but then we have a question in the heart of the multiple Hazard some of the issues people were pointing out at things in the past we built environment or other areas in psychosocial stress I think would certainly a large part of that some of the others were power outages and issues with water quality so I go through and if it's some of the people who are doing research to talk about what some of these pieces in the indirect Hatley that you think are really critical for your research are maybe we'll wrap up so let's start I'll just go through everyone in just a few can say you know two or three really on your mind with what you're doing will start with k Weinberger okay yeah I am so the two that are the top of my mind because that's the study that I'm working on right now I'm so interested in these days until Halloween Ulster thinking of house great amorita yeah so I've been thinking about multiple hazards in the context of hurricanes but I've also been thinking about multiple houses in the context of joints and independent effects of different types of so you know hurricanes tend to occur during the summer season in an area may also be experiencing heat waves. Great Robbie did you have some you want a job Broadlands servicing first one menu huge reactions to Tropical Cyclone exposure very interested in the long-term impacts so that would be another thing I'd be looking at trying to see which variables relevant to that draw a drive is and we'll see just how they different between different different different variables and Sonic over a long time. Parris Island was the impact of a just power outages the also disruptions to other forms of communication so having issues going to be an access to Healthcare Services psychosocial well-being but also can have locations I think in terms of physical exposure so far and I think it's a really important question as we start building out this research the method well being do you like Alexa human sacrifice thank you and Darren yes I'm mom Creighton are y'all see involving multiple different projects that I'm not leaving so that means that I'm interested again example of what not to do I think my heart is in long-term neurological outcomes which is mostly in your act I don't know if it's mostly a large large biggest concern in that if its long-term is how with separate and disentangle that from SCS and other so this will be fun to try and figure out great I'm Andrea did you have any you wanted to ask turn on exposure expert or indirect effects whether or not we're not going to be able to actually intervene to reduce flooding or the power outages or preparedness for those things so I think that's going to be the the more interesting part on the other hand blank question where you were intervening on the mediator so it also becomes very very difficult to actually get that estimate so he was coming out in the literature but I did want to point that out like your essential question Grand Pointe in a lot of interesting things to think about their two interns it but then how we think about it and learn for next year but how we think about him learn for the decisions that we make for what are climate might look like in a hundred years because there maybe we can change the way we can change the rainfall average for some of these events great thank you so much to everyone for joining our discussion and for the wonderful questions from the audience this has been really really interesting for me and I look forward to as Allah continuing this discussion hopefully in Beijing variety next year but maybe maybe before that either remotely or in-person thank you all her for joining us thank you to you and your team for the hurricane exposure package which has I think single-handedly been the most important aspect of opening of the seal to people is that exposure. Number absolutely when we were do it when I was doing the last night surveillance like the wind gets in there thank you all for participating.