

# Assessing exposure to hurricanes and other tropical storms for epidemiological research

Brooke Anderson

January 11, 2017

# Motivation

# Assessing exposure

# Hazard-specific metrics

- Distance from the storm
- High winds
- Rainfall
- Flood events
- Storm events

# Distance from storm

[Intro to best tracks]

# Distance from storm

[Importance of interpolating tracks]

# Wind exposure

[Reminder of best tracks, intro to Willoughby model]

# Wind exposure

[Factors of doing the modeling (transferring from surface to gradient and back, etc.), other applications of the model]



# Rain exposure

[Intro to NLDAS-2 data]

# Rain exposure

[Showing how to ID date of closest approach]

# Rain exposure

[Showing map from hurricaneexposure]

# Flood and tornado events

[Intro to NOAA Storm Events]

# Flood and tornado events

[Figure from hurricaneexposure]

# Agreement between exposure metrics

# Agreement on intensity

[How we measured this]

# Agreement on intensity

[What we found]



# Agreement at the county level

[How we measured this]

# Agreement at the county level

[What we found]

# Discussion

# Software

# Software as a research product

[Open science, ROpenSci, influence of example packages]

# Software as a research product

[Coursera specialization]

# Project software

[list of software, availability through CRAN, GitHub]

# Sharing exposure data

[hurricaneexposure, hurricaneexposuredata, web page]



# Modeling storm winds

```
[stormwindmodel]
```

# Working with NOAA Storm Events

```
[noaastormevents]
```

# Dealing with time zones

```
[countytimezones]
```