Impact of Natural Disasters on Human Lives and the Economy in the United States

The U.S. National Oceanic and Atmospheric Administration's (NOAA) have been collecting data on storms, rare/unusual weather phenomena, and other significant meteorological events, such as record maximum or minimum temperatures or precipitation that occur in connection with another event. Among other measurements and analysis, the impact of these natural disasters on lives and the economy of the affected regions are reported annually. These data and related reports are available to the public and can be downloaded from the National Climate Data Center of NOAA website <http://www.ncdc.noaa.gov/stormevents/>.

For this project we are using 2001-2013 storm data, downloaded from NOAA to look at the impact of these events on economy and lives of people in the affected regions. From the original data of nearly one million records we extracted the attributes that relate to the economy (damages to Crops and Properties) and direct or in direct effect on human health (injuries and death), shown below:

STATE : chr "LOUISIANA" "FLORIDA" "FLORIDA" "FLORIDA" ...

YEAR : chr "2001" "2001" "2001" "2001" ...

EVENT\_TYPE : chr "Winter Storm" "Frost/Freeze" "Frost/Freeze" "Frost/Freeze" ...

DAMAGE\_PROPERTY: num 50000 0 0 0 0 0 0 0 0 0 ...

DAMAGE\_CROPS : num 0 0 0 0 0 0 0 0 0 0 ...

INJURIES : num 4 0 0 0 0 0 0 0 0 0 ...

DEATHS : num 0 0 0 0 0 0 0 0 0 0 ...

damages : num 50000 0 0 0 0 0 0 0 0 0 ...

health : num 4 0 0 0 0 0 0 0 0 0 ...

where "damages" is the sum of Property and Crops loss in millions of dollars and "health" is the sum of the number of injuries and deaths from each event.

## Shiny Application

The application generates charts to depict the impact of events on economy and human lives. There are three widgets to choose the categories and the type of chart:

1. Select summary by: Yearly\_Trend - annual trend Event\_Types - show impact by event type States - show impact by state
2. Impact on Economy and Health: No\_of\_Events - Count of events recorded between 2001-2013 Impact\_on\_Economy - Impact of events on the economy (Crops+Properties damages) Impact\_on\_Health - Impact of events on the health (Death + Injuries)
3. Slider (1:50): To choose the top N contenders See the values on the chart bars when N <= 5

Note: For Yearly\_Trend the slider does not alter the number of bars. However, once moving the slider to any number between 1-5 (inclusive) the values for all bars are displayed on the graph.