# Prepared on: 2/21/2018

# Possible questions to be answered from hypothesis:

1. Did presence of police help or hurt?
   1. Presence of police in area or contact help alleviate fear of victimization?
2. Race, Gender, age, color was a factor?
3. Strangers or known person trends?
4. Severity of crime trends and impact of on fear?
5. Trust of police increased/decreased?
6. Crime effect as per the location or vicinity?
7. Crime fear impact as confidence to location or vicinity?
8. Presence of firearm made situation better or worse?
9. Population fearful of crime?
10. Self Defense weapon as a result of crime?

# Data treatment

Remove Bias by duplication, missing data, or null values,

Remove Outliers,

Remove Extreme or Unusual cases,

Use standardized values

# Model training and testing

60% train, 20% test, 20% cross validation

# Model stats

R2 score,

Independence Test,

Normality Test,

Collinearity Test,

Residuals pattern

# Predictor Collinearity issues

All variables should not be increasing VIF score to let model be biased by highly correlated predictors.

# Data independence

Using Durban Watson score we will insure data does not have autocorrelation.

## Model optimization/ Tuning Parameters

Reduce influence of dominant variables by reducing coefficients using Ridge or Lasso tuning parameters.

Use AIC, BIC to eliminate variables

# Response or Outcome:

FINAL OUTCOME – Case resolved

# Predictors or variables:

## VICTIM Data

THEFT OR ATTEMPTED THEFTS,

BREAK IN OR ATTEMPTED BREAK IN

AUTO-THEFT ATTEMPTED AUTO-THEFT,

ROBBERY OR ATTEMPTED ROBBERY,

ASSAULT OR ATTEMPTED ASSAULT,

BY KNOWN OFFENDER,

SEXUAL ATTACK/RAPE,

Frequency,

REPORTED AN INCIDENT TO POLICE,

Frequency of reporting,

UNREPORTED AN INCIDENT TO POLICE,

Frequency of unreported incident,

Auto,

Property,

HOUSEHOLD MEMBER IN ARMED FORCES,

OWNED, RENTED, STUDENT HOUSING, PUBLIC HOUSING, Duplex etc.,

Spoken Language,

SEX (M/F),

Age,

Married,

Education,

Race,

S36AB (incident Data) S36C\_2

CRIME PREVENTION DEVICES IN HOUSE,

Income,

NEIGHBORHOOD Crime,

Damages

## Police Response

MADE ARREST,

Response Time,

Police response Reason,

Directly Reported,

IS TROUBLE STILL GOING ON,