



R Code for Examples in the book  
*"Statistics: The Art and Science of Learning from Data"*  
 by Agresti, Franklin and Klingenberg, 5<sup>th</sup> edition

## Chapter 3

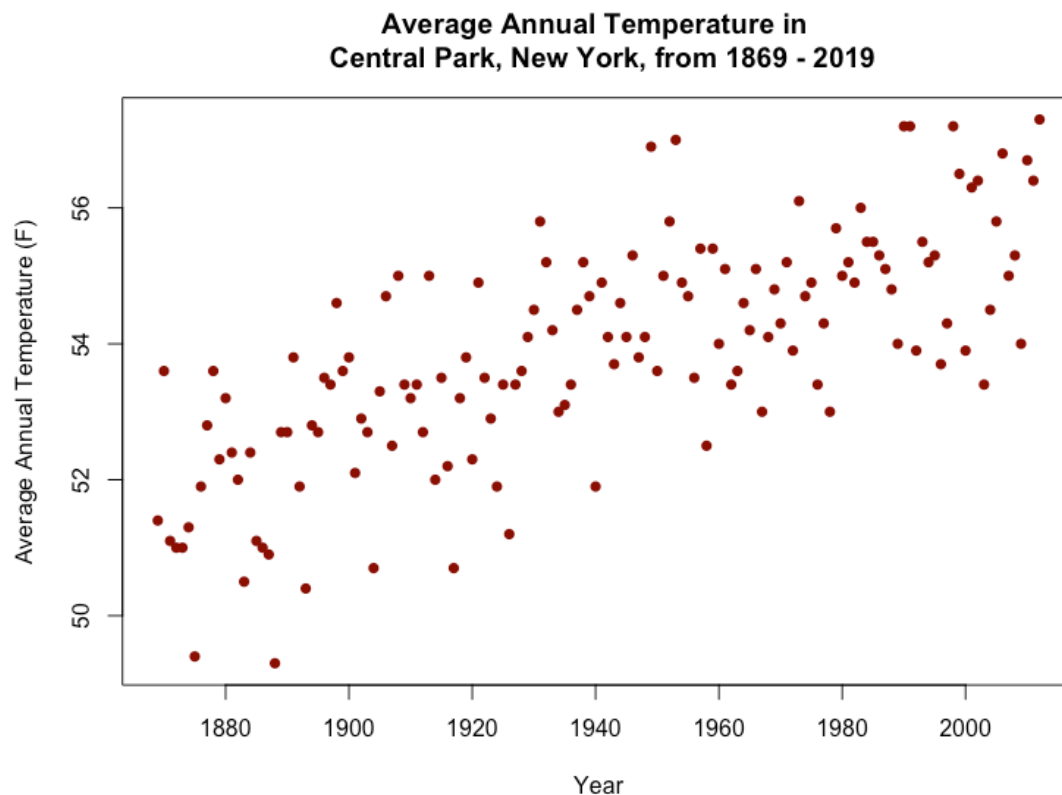
### Example 13: Global Warming – Exploring Extrapolation

#### Reading in the data

```
temps <-  
read.csv(file='https://raw.githubusercontent.com/artofstat/data/master/Chapter3/central_park_yearly_temps.csv')  
attach(temps) # so we can refer to variable names
```

#### Basic scatterplot

```
plot(x = YEAR, y = ANNUAL, pch = 16, col = 'darkred',  
     xlab = 'Year', ylab = 'Average Annual Temperature (F)',  
     main = 'Average Annual Temperature in \n Central Park, New York, from  
1869 - 2019')
```



### Fitting in regression model

```
lin.reg <- lm(ANNUAL ~ YEAR)
lin.reg

##
## Call:
## lm(formula = ANNUAL ~ YEAR)
##
## Coefficients:
## (Intercept)      YEAR
##   -2.68943      0.02915
```

### Predicting annual average temp for years 2025 and 3000

```
new <- data.frame(YEAR = c(2025, 3000))
predict(lin.reg, newdata = new)

##           1           2
## 56.33523 84.75451
```