# Introduction to data visualizations in R

## Loading packages and datasets

library (tidyverse)  
library (modeldata)  
  
View(crickets)

## Using scatter plot

We specify dataset to be plotted in ggplot, and the variables and other aesthetics in aes

ggplot(crickets, aes(x=temp,  
 y=rate))

We the add the specification for the type of plot with geom\_\*

ggplot (crickets, aes(x=temp,  
 y = rate))+  
 geom\_point()

We can then add other things like labels

ggplot (crickets, aes(x = temp,  
 y = rate))+  
 geom\_point()+  
 labs(x="Temperature",  
 y="Chip rate",  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")

### Specifying other aesthetics

Add color with a variable

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point()+  
 labs(x="Temperature",  
 y="Chip rate",  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")

Label color labels

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point()+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")

Add color scaling

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point()+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")+  
 space\_color\_brewer(palette="Dark2")

### Modifying basic properties

Change plot color

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point(color="Red")+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")+  
 space\_color\_brewer(palette="Dark2")

change plot size

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point(size=2)+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")+  
 space\_color\_brewer(palette="Dark2")

Adding another plot layer

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point()+  
 geom\_smooth()+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")+  
 space\_color\_brewer(palette="Dark2")

Add geom\_smooth method

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point()+  
 geom\_smooth(method="lm")+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")+  
 space\_color\_brewer(palette="Dark2")

Remove geom\_smooth error approximation

ggplot (crickets, aes(x=temp,  
 y=rate,  
 color=species))+  
 geom\_point()+  
 geom\_smooth(method="lm",  
 se=FALSE)+  
 labs(x="Temperature",  
 y="Chip rate",  
 color="Species"  
 title="Cricket Chips",  
 caption= "Source: Mcdonald (2009)")+  
 space\_color\_brewer(palette="Dark2")

## Other plots

### Histogram

ggplot (crickets, aes(x=rate,  
 color=species))+  
 geom\_histogram()

Modifying Histogram bins

ggplot (crickets, aes(x=rate))+  
 geom\_histogram(bins=15)

### Frequency polygon

ggplot (crickets, aes(x=rate))+  
 geom\_freqpoly(bins=15)

### Bars

ggplot (crickets, aes(x=species))+  
 geom\_bar(color="black",  
 fill="lightblue")

Coloring with classes

ggplot (crickets, aes(x=species,  
 fill=species))+  
 geom\_bar()+  
 space\_fill\_brewer(palette="Dark2")

Remove legend

ggplot (crickets, aes(x=species,  
 fill=species))+  
 geom\_bar(show.color = species)+  
 space\_fill\_brewer(palette="Dark2")

### Box plot

ggplot (crickets, aes(x=species,y=rate))+  
 geom\_boxplot(show.color = species)+  
 space\_fill\_brewer(palette="Dark2")

## Faceting

ggplot (crickets, aes(x=rate))+  
 geom\_histogram(bins=15)+  
 facet\_wrap(~species)+  
 space\_fill\_brewer(palette="Dark2")