**Data Visualization I**

**USC SPEC Lab** Summer 2021

**The goal**: In this module, we are going to learn to visualize data using several different graphs. Although we will briefly go over the graphics package, our Data Visualization modules focus on the package ‘ggplot2’. By the end of this module, you should be able to create basic histograms, kernel density plots, and boxplots. We show you how to manipulate colors, line types, graph titles, and even how to create multiple plots as part of a single figure.

**Introductory Videos**

**1.1** [**R Data Visualization: The Big Picture**](https://www.youtube.com/watch?v=UKoUi-UjSNI&list=PLxSt3N9_h1VWPtvQdXjzXvXVecZaziyYh&index=1)

- data visualization principles and guidelines

**1.2** [**Introduction to ggplot2**](https://www.youtube.com/watch?v=xnJ4pD6da6I&list=PLxSt3N9_h1VWPtvQdXjzXvXVecZaziyYh&index=2)

- uses of the ggplot2

**1.3** [**Labels, Axes, Colors & Line Types in ggplot2**](https://www.youtube.com/watch?v=xCvLtNRAXYQ&list=PLxSt3N9_h1VWPtvQdXjzXvXVecZaziyYh&index=3)

- formatting options in ggplot2

**1.4** [**Factors & Facet Wrapping in ggplot2**](https://www.youtube.com/watch?v=jw7BJft88Oc&list=PLxSt3N9_h1VWPtvQdXjzXvXVecZaziyYh&index=4)

- dealing with different data in ggplot2

**1.5** [**Exporting and Saving Plots in ggplot2**](https://www.youtube.com/watch?v=v9YiEJn6OBg&list=PLxSt3N9_h1VWPtvQdXjzXvXVecZaziyYh&index=5)

- managing created plots in ggplot2

## **Walk Through Work**

**Part I: Histograms and Kernel Density Plots**

**Part II: Titles, Labels, and Other Aesthetics**

## **Group Work**

**Energy Use Plots to Match**

## **Individual Work**

Histogram (with line plot bonus)

## **Resources**

**ggplot2 Cheat Sheets**