Learning Objectives:

1. Calculating Frequencies in R
2. Calculating Proportion’s in R
3. Visualization using Bar Graphs in R
4. Hypothesis Testing - Two Independent Categorical Groups in R (Chi-Square)

Lead Story

1. Introduction: Start with the mice problem
   1. Cheese has suddenly gone bad in mice community in SC house
2. Main story starts with DD approaching SC with ~~Flint data~~ --- John Snow story
   1. DD: "Hey Stat Cat, can I send you some data? I'm working on this ~~Flint Water~~ data and something's not feeling right.
   2. SC: "My dial-up is down. Why don't you do it the old-fashioned way and puppy-paw it over here?"
3. DD notices SC new cat litter box (throne-like, DD amazed)
4. *Transition needed?*
5. Mice approach SC telling about the panic the cheese-epidemic is causing among the community
6. SC is too busy, DD offers assistance
7. DD needs to quantify the severity of the problem, ask mice to collect data on how much cheese has gone bad and where
8. Mice take ownership and starts collecting data, mouse hole to mouse hole in SC house
   1. Shows data collection: shoe-leather epidemiology using community participation
   2. Commercial break?
9. Mice return, DD starts analysis
10. *LEARNING EVENT – Frequencies and Proportions*
11. DD shocked about the high rates, wonders if the same problem is going on in her house (meanwhile SC is in the background emptying his kitty litter throne out the window?)
12. Asks consultant for help to create a graph of the data for visualizing the problem so that DD can show to the other mice
13. *LEARNING EVENT – Visualization (bar graphs)*
14. DD gets the mice at home to collect data, very low rates of bad cheese
15. DD needs to go back to her office to test statistical significance DD, confused by what is causing the problem, thinks something must be different in SC house
16. As DD is walking back over to SC, she sees SC kitty litter falling out the window into a water supply leading to the house?