**Pie and Bar Charts with Excel**

In-Class Data Sets.xls

* Class Majors
  + Change to percentages or counts
* Transportation (bar chart is more flexible but pie shows the whole)
  + Add chart title and axis titles – select chart, Chart Format option, Chart Title, Axis Title (horizontal and vertical)
* Example 1.3 (stacked column and stacked bar are both bar charts)
* Problem 1.12 (show how to create straight marked scatter but leave analysis for homework)

**Histograms with Plotly (create account with username and password)**

Upload Homework Data Sets.xsl to illustrate how to upload a file

* Each tab becomes a file within a folder
* Multiple columns on one sheet each become a file (graphs on sheets do not upload)
* Can delete or rename

In-Class Data Sets.xls

* Show how to open a file – Pittsburgh SD Data
* Create a histogram of mean family income – if more than one column is selected it will combine data so make sure to unselect other columns
* Traces -> Style ->Border = .5 (default black)
* Traces -> Range/Bins -> Manual
  + X range shows smallest and largest data value
  + X bin size shows bin width – change to see difference
* Outliers
* Add chart title and horizontal/vertical axis titles (can modify the horizontal)
* Save and Export
* Insert into Excel
* Repeat export after changing bin width

**Stem and Leaf Activity (worksheet)**

PGH SD Mean Family Income Data

* Show how it looks like a histogram
* Show how to do it by repeating each stem once

**Interpret Histograms**

Race Data

* Describe the overall shape of the distribution (skewed right – most data in to the left)
* What is the approximate center? (half of data is below and half above the center) (1500-1700 seconds)
* What are the smallest and largest incomes? (disregard outliers) (900 – 2500 seconds – there is a formula to determine if a point is an outlier)
* About what percent of runners finished in less than 1300 seconds? (25%)