# Lab 6: Force-directed Layouts

Networks are common in biology, and the force-directed graph is one of the easiest ways to get a first look at them. In this lab we're going to visualize a network dataset from a Nature Methods paper using d3, and explore how different parameters can impact the quality of the force layout.

Sometimes visualizations cannot feasibly show an entire dataset in a meaningful way. In this lab we're going create a database-driven visualization. You'll learn how to connect to a database, and how to integrate interface elements with SQL queries.

You may work together on this project, but your code must be your own and you must submit individually. Since some of the lines of code you'll be filling in have generally "correct" answers, try not to share code explicitly.

There is support code available for this project. There you'll find a sample index.html and the dataset.

The dataset you'll be visualizing comes from A Human MAP Kinase Interactome from Bandyopadhyay et al. Be sure to look at the visualizations in the figures on that page. In your writeup you'll contrast your results with theirs.

## Requirements

- Make sure that you can get the support code running:
  - You *must* host the files on a (local) web server to be able to load the data. See d3js – using for examples.
  - Open up your browser debugging tools (e.g. More Tools - Developer Tools in Chrome) and look for the JavaScript console.
  - You will see error messages since the code is incomplete. But you should also see "Success! Data loaded".
- To complete the lab, review the support code looking for TODOs:
  - The main part of this lab is finishing the code.
  - Be sure to explore different options for parameters and discuss trade-offs in your writeup.
- Your writeup should contain:
- A description of your strategy in setting variables.
- How your results compare to Bandyopadhyay et al.'s results.

## Resources

- d3 API

## Turning in the project

Submit your zipped files or GitHub link on myWPI.

## Grading

This lab is graded on a 100 point scale. Points will be deducted for missing any of the key requirements (e.g. no writeup or no rendering network).