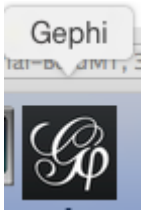
Creating a Network Graph with Gephi

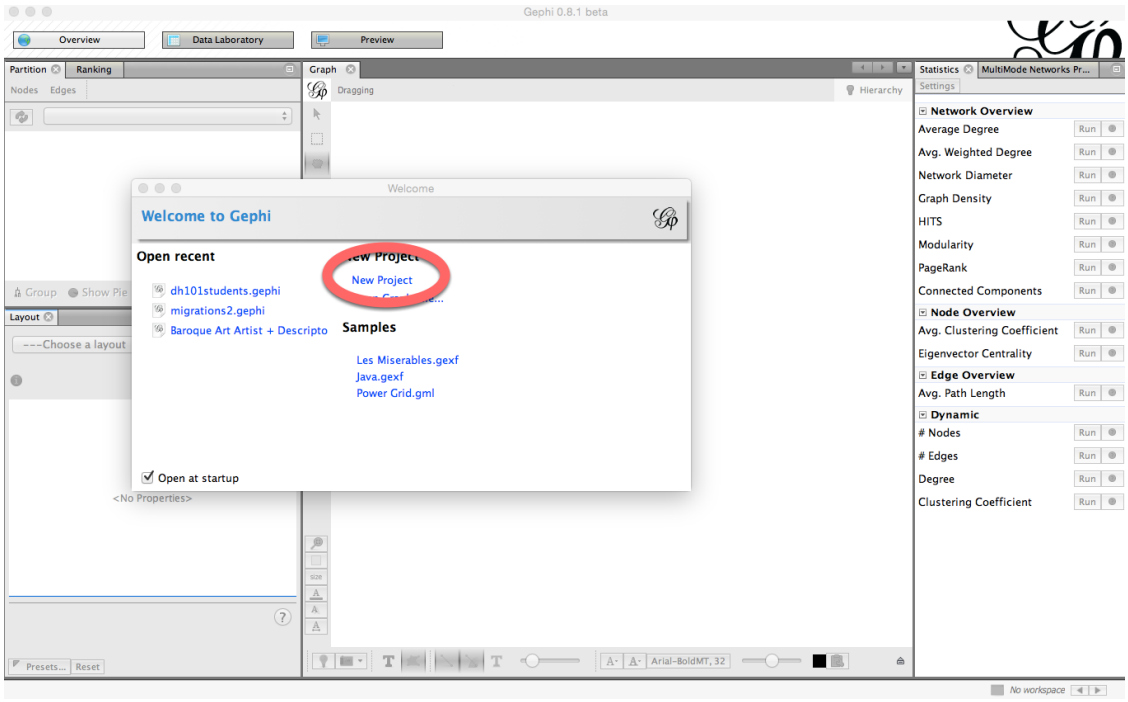
Gephi is a powerful tool for network analysis, but it can be intimidating. It has a lot of tools for statistical analysis of network data — most of which you won't be using at this stage of your work.

Open Gephi



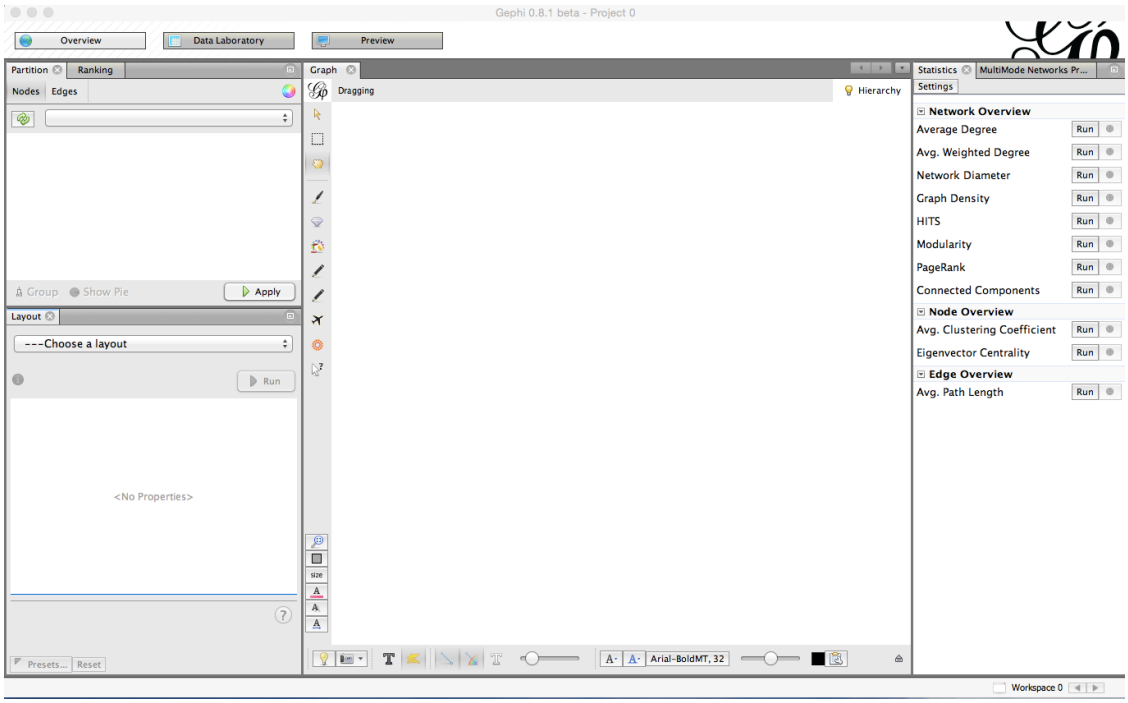
Be sure you're on the Windows side of your computer and that you're opening Gephi version 8.2. (Gephi 8.2 for Mac doesn't work; if you want to use Gephi at home and you have a Mac, be sure and download 8.1.)

Create a new project



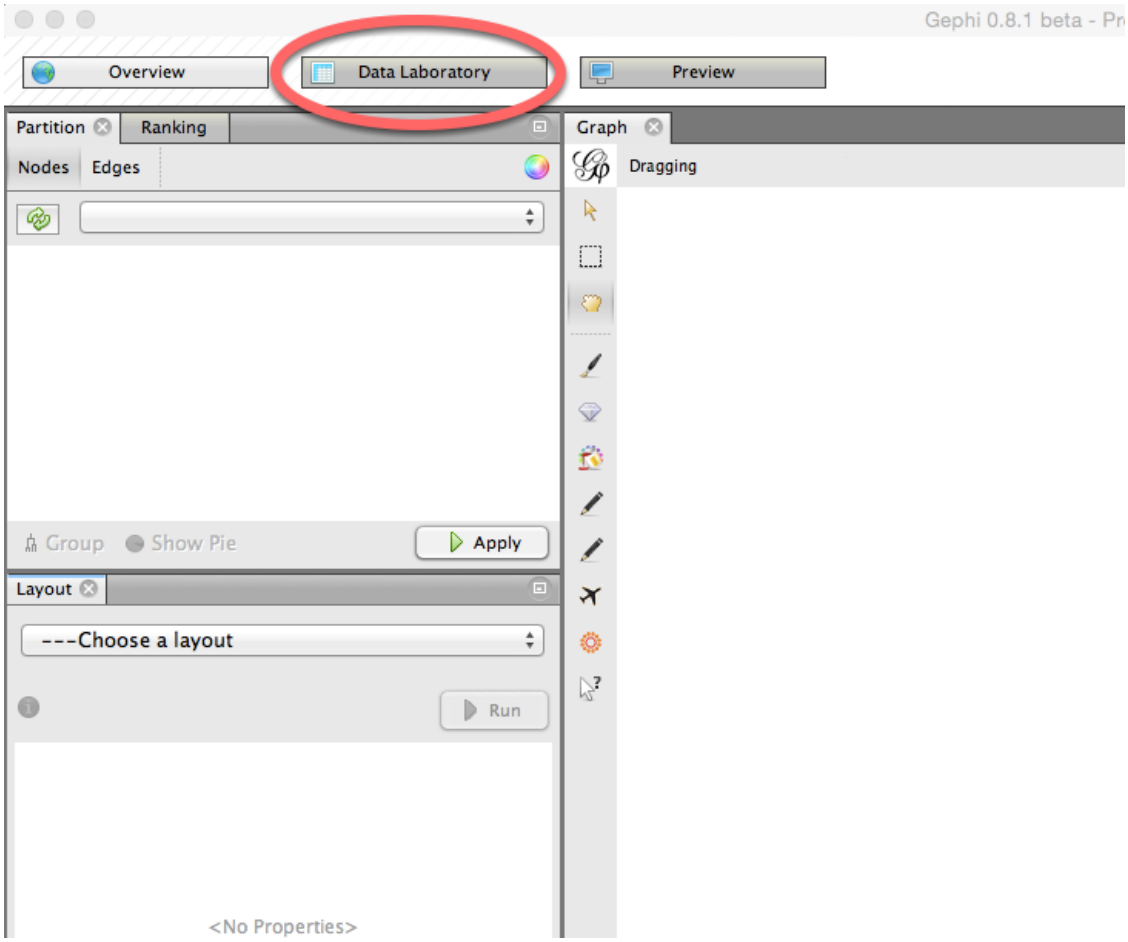
Click on **New Project** on the "Welcome to Gephi" popup window.

Do not freak out.



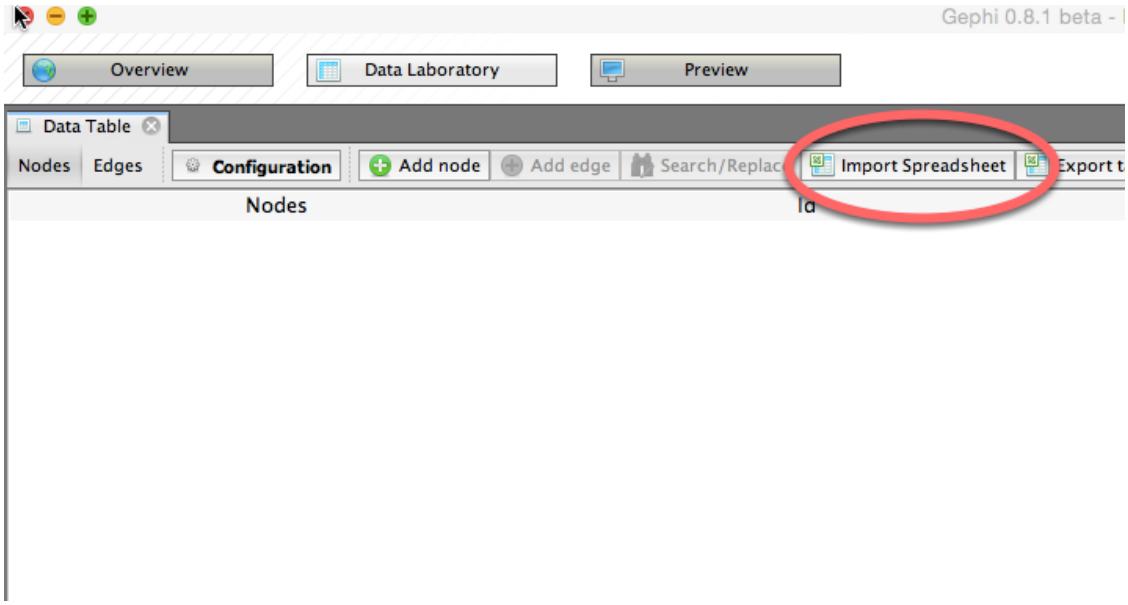
The Gephi workspace looks really confusing and intimidating. Do not freak out.

Click on "Data Laboratory."



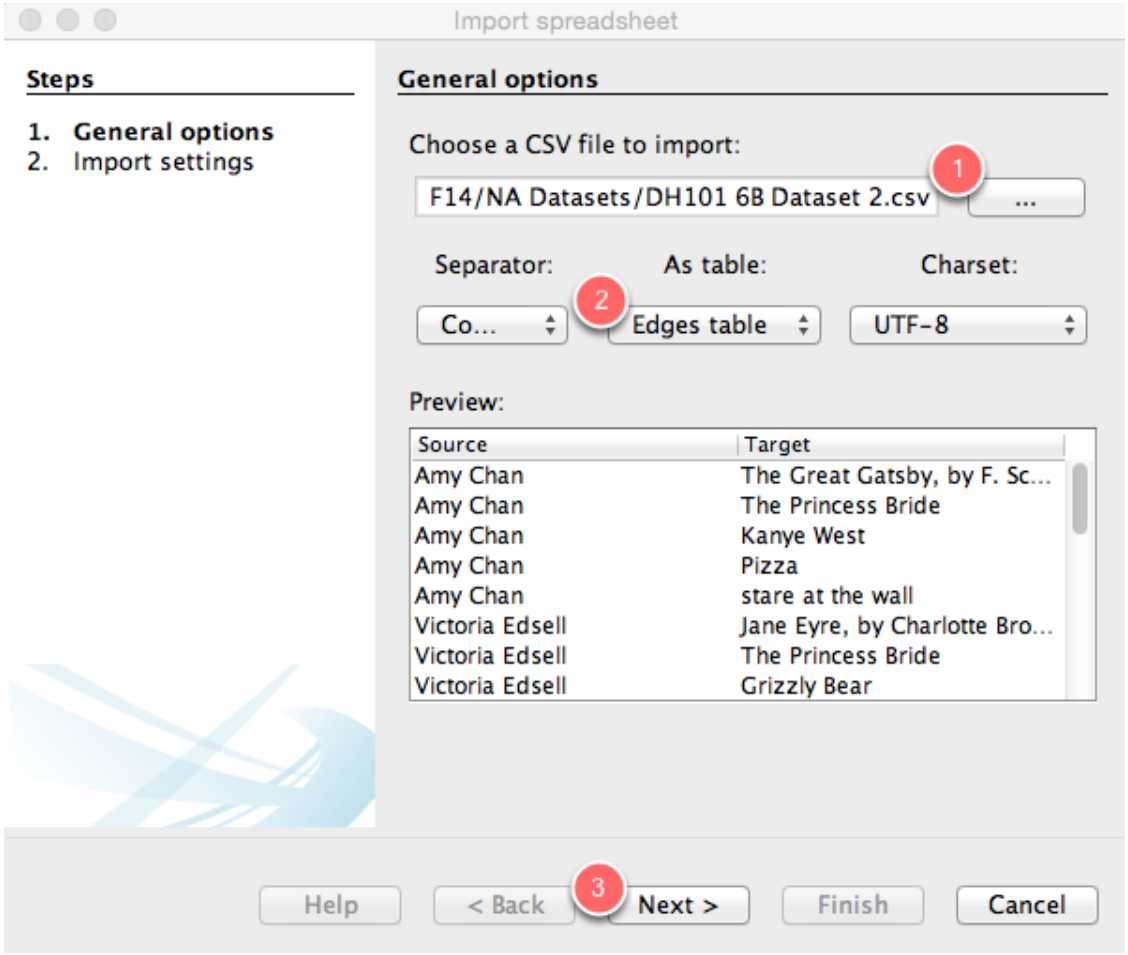
This is where you'll upload your data.

In the Data Laboratory, click on "Import Spreadsheet."



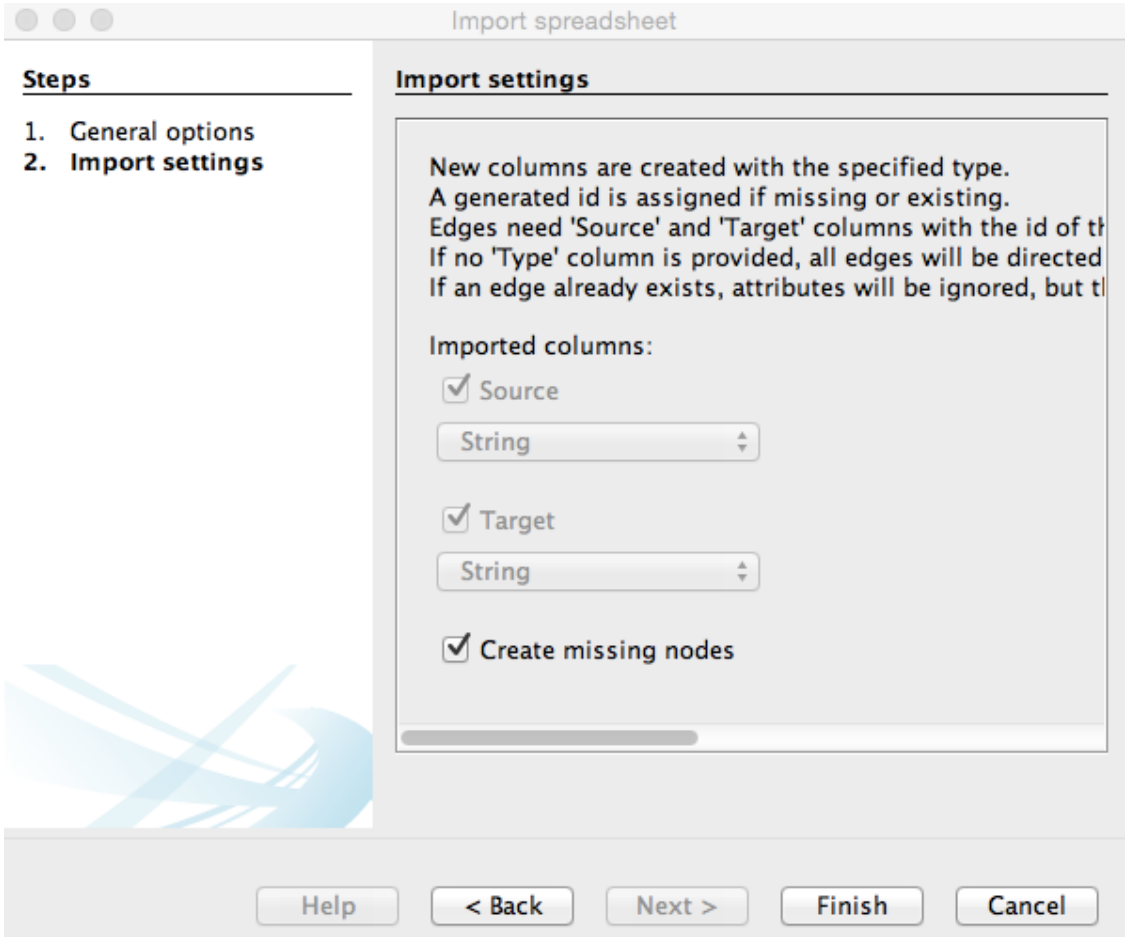
Click on **Import Spreadsheet** in order to upload your data.

Import "DH101 6B Dataset 2" as an Edges table



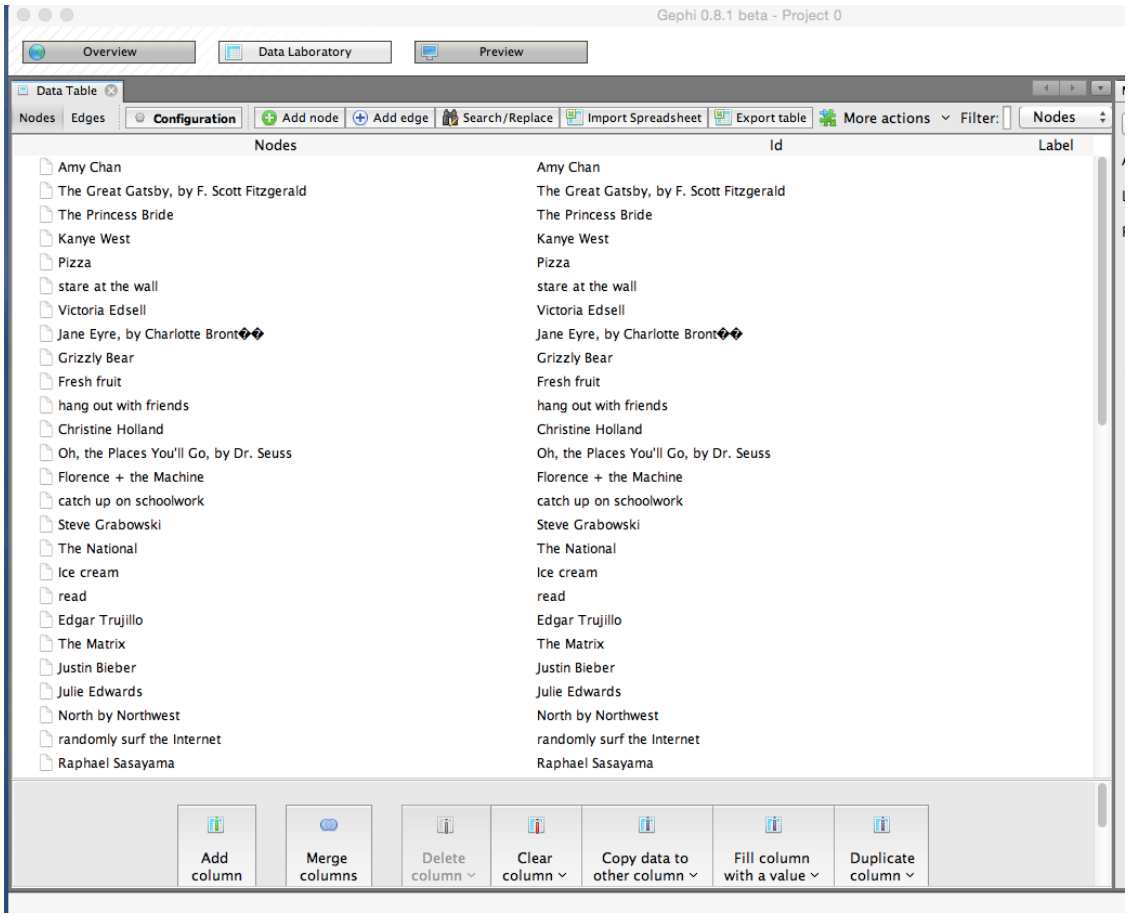
1) Click on the button with the three dots on it to select a file and click on **DH101 6B Dataset 2.**
2) Be sure you choose **Edges table** from the box that allows you to choose between an edge table and a node table.
3) Finally, click **Next** to move on to the next screen.

Finalize your import settings.



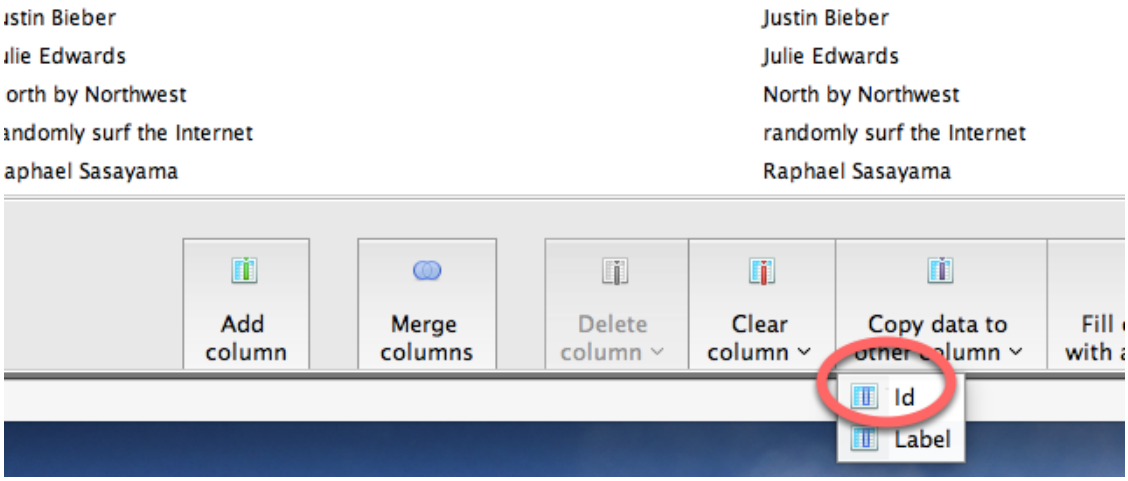
On the next screen, be sure that the options pictured above are clicked. (They should be by default.) Then click **Finish**.

What is this, it's confusing and I hate it.



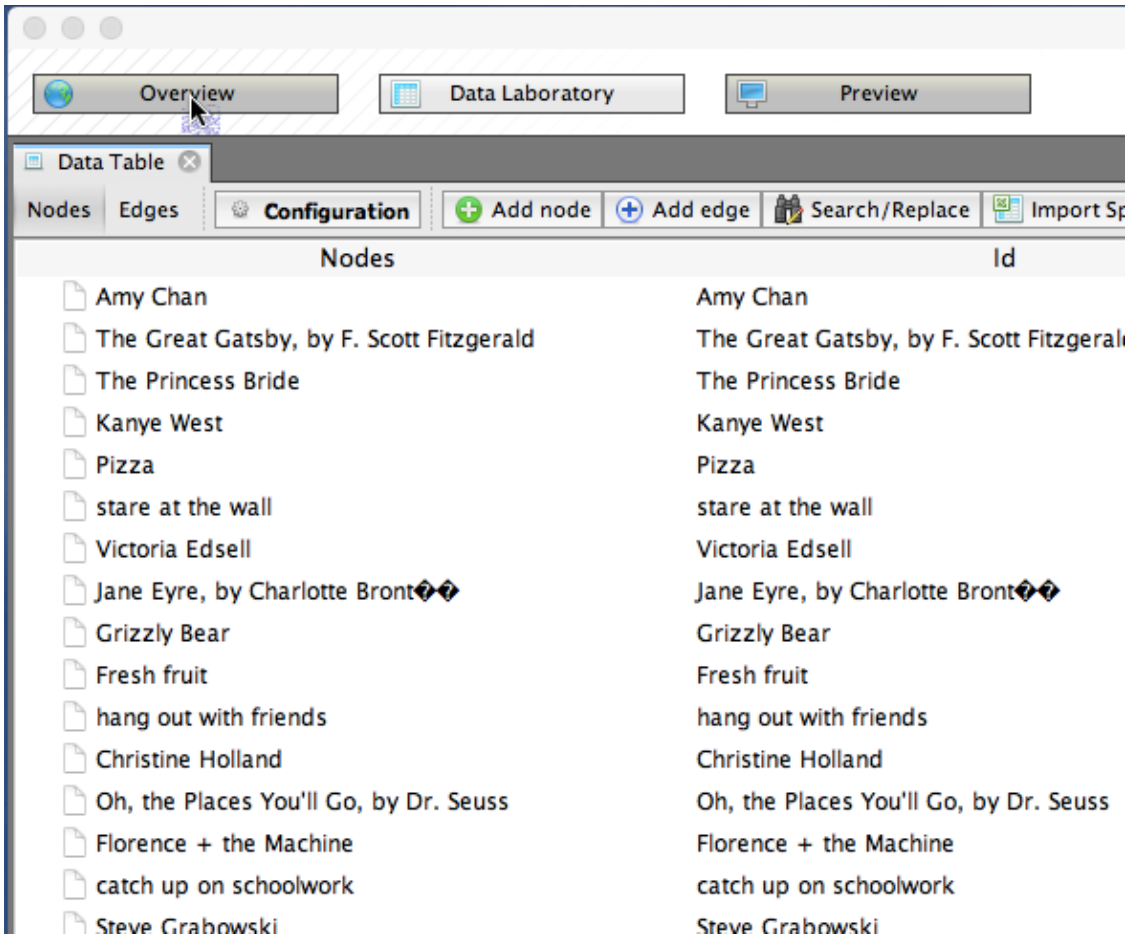
By default, Gephi examines the edge list you uploaded, extracts every unique value, and uses them to build a **node list**. This is a list of every node — every circle — that will appear on your network diagram. If you look closely, you'll see that there's a node for every student and a node for every preference option. Every node has a unique ID, which by default is the same as the node name.

Add a column for labels.



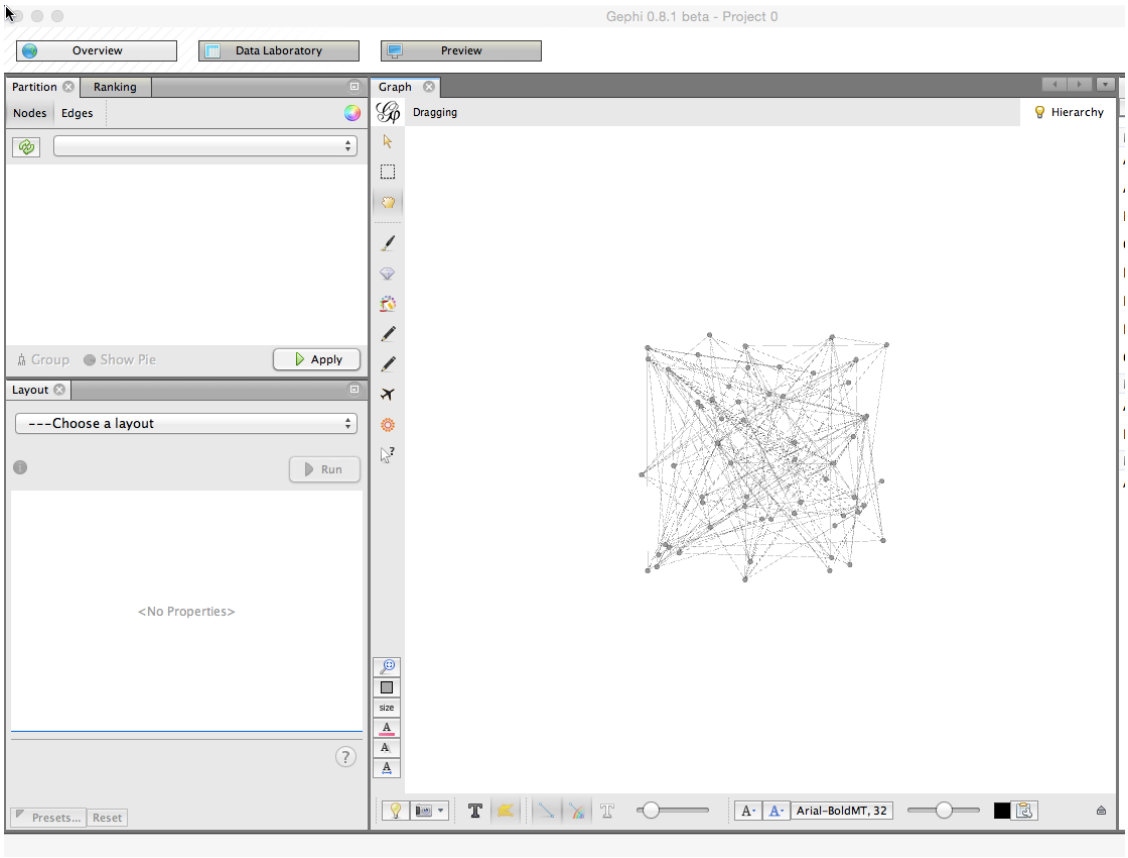
We have a column for node names and one for IDs. But Gephi doesn't automatically understand how to label the nodes on your network graphs. You have to tell it what you want them to be called by filling in the column called **Label**. To do that, click on **ID**. In the next window that pops up click **Label**. See, that wasn't so bad. Now you have node labels.

Click on "Overview."



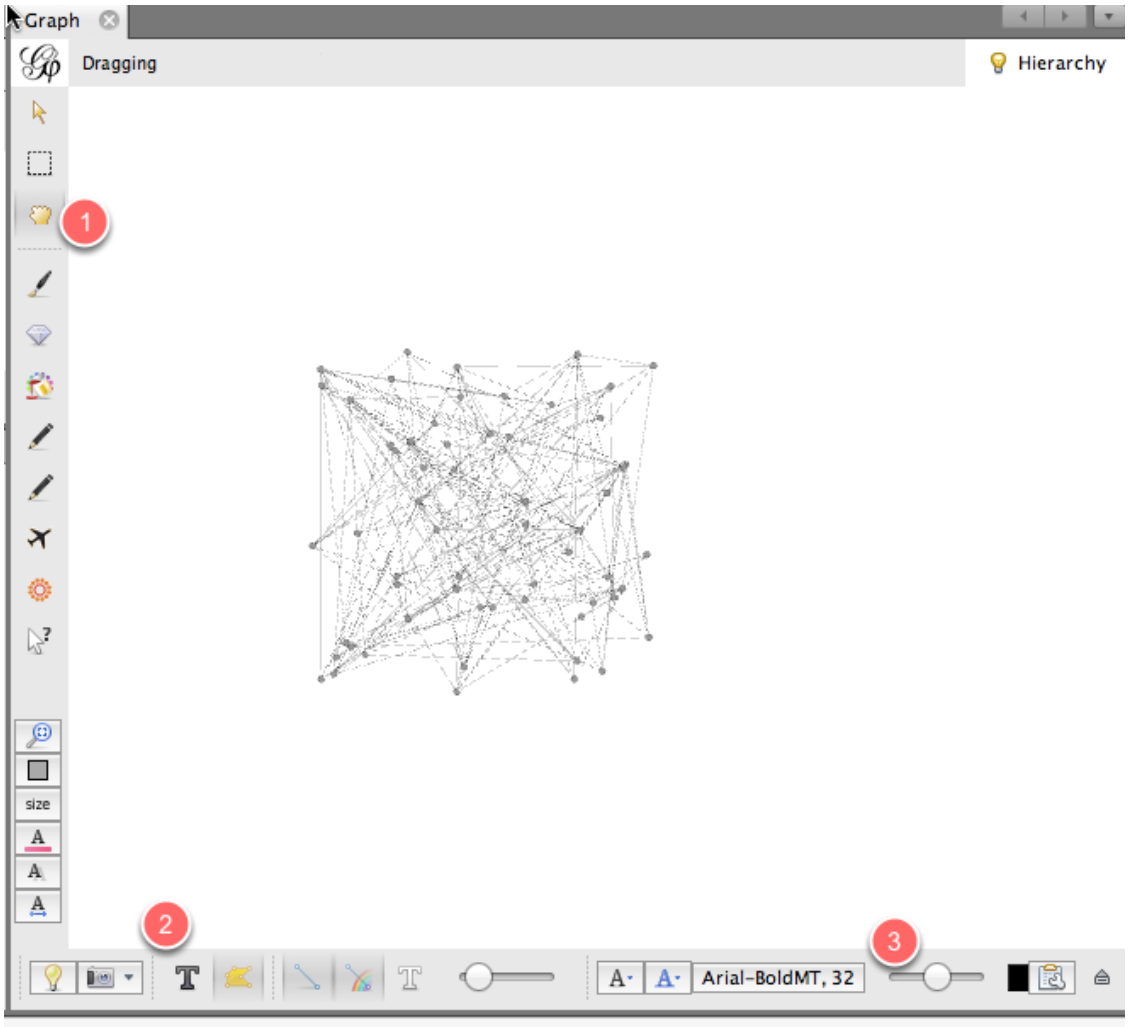
OK, we can finally start visualizing. Click on **Overview** to go to the pane that will show your network graph.

Cool, I guess?



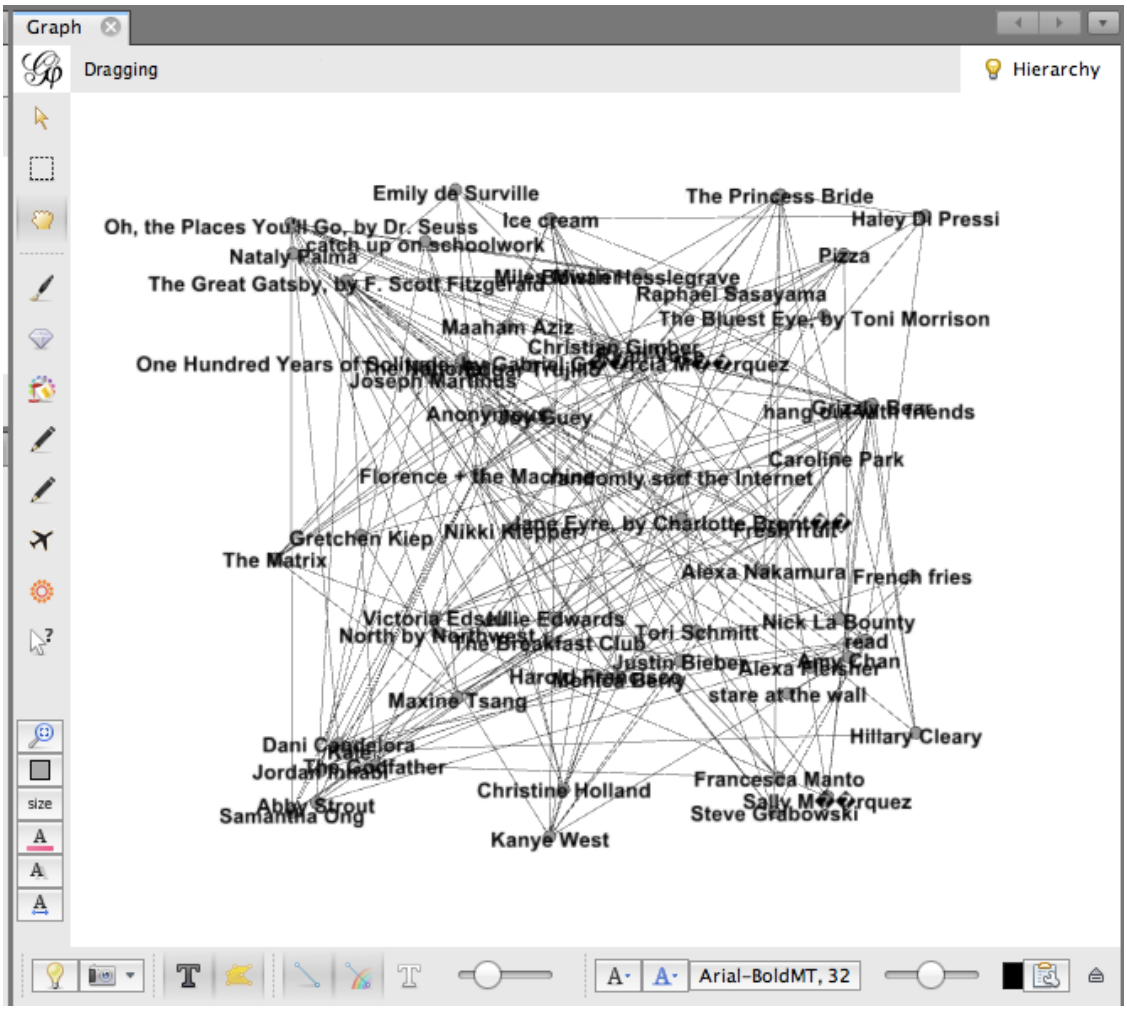
You now have a network diagram! You can't really see much, though.

Manipulate your diagram so it's more legible.



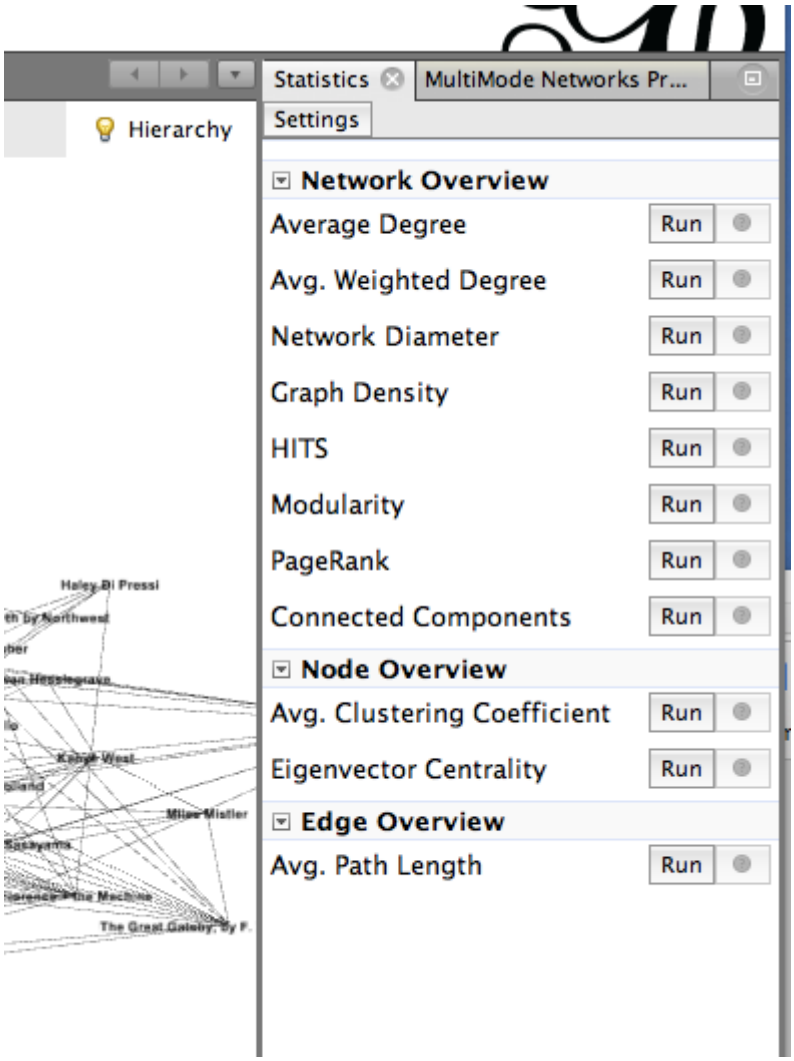
Use the scroll wheel to zoom in and out. **1)** Use the hand icon to move the diagram around. **2)** Turn labels on by clicking the **T**. **3)** Adjust the size of the labels with the scrubber.

What are we looking at?



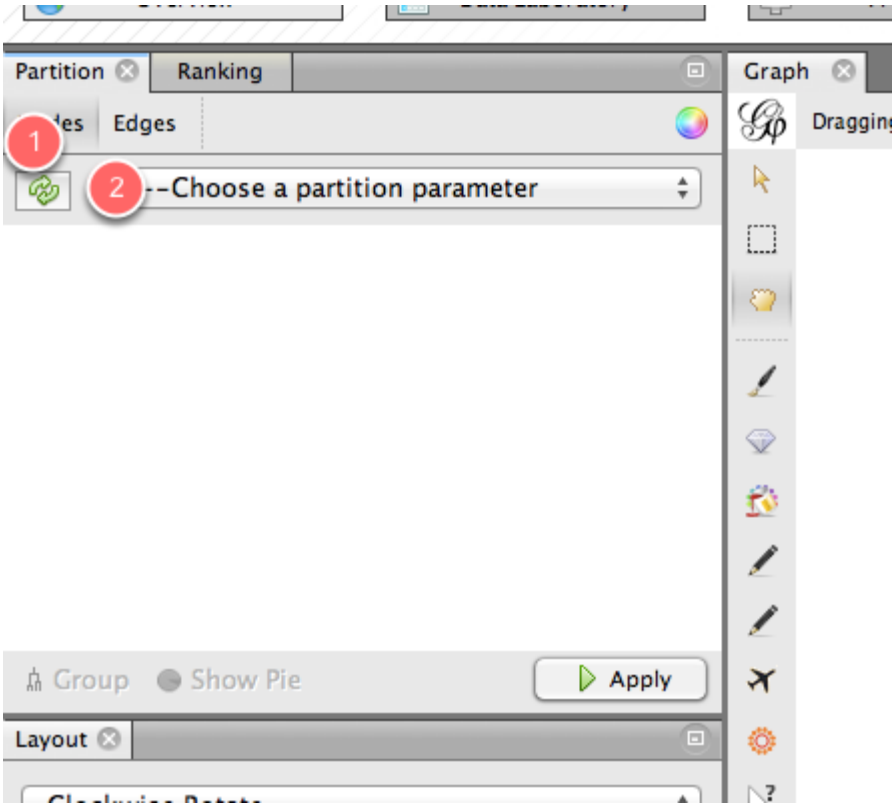
This is a **bimodal** network graph, meaning it contains two different kinds of things: **students** and **preferences**. Each student is connected to his or her preferences with an **edge**. It's still a little hard to see anything, though.

Calculate modularity.



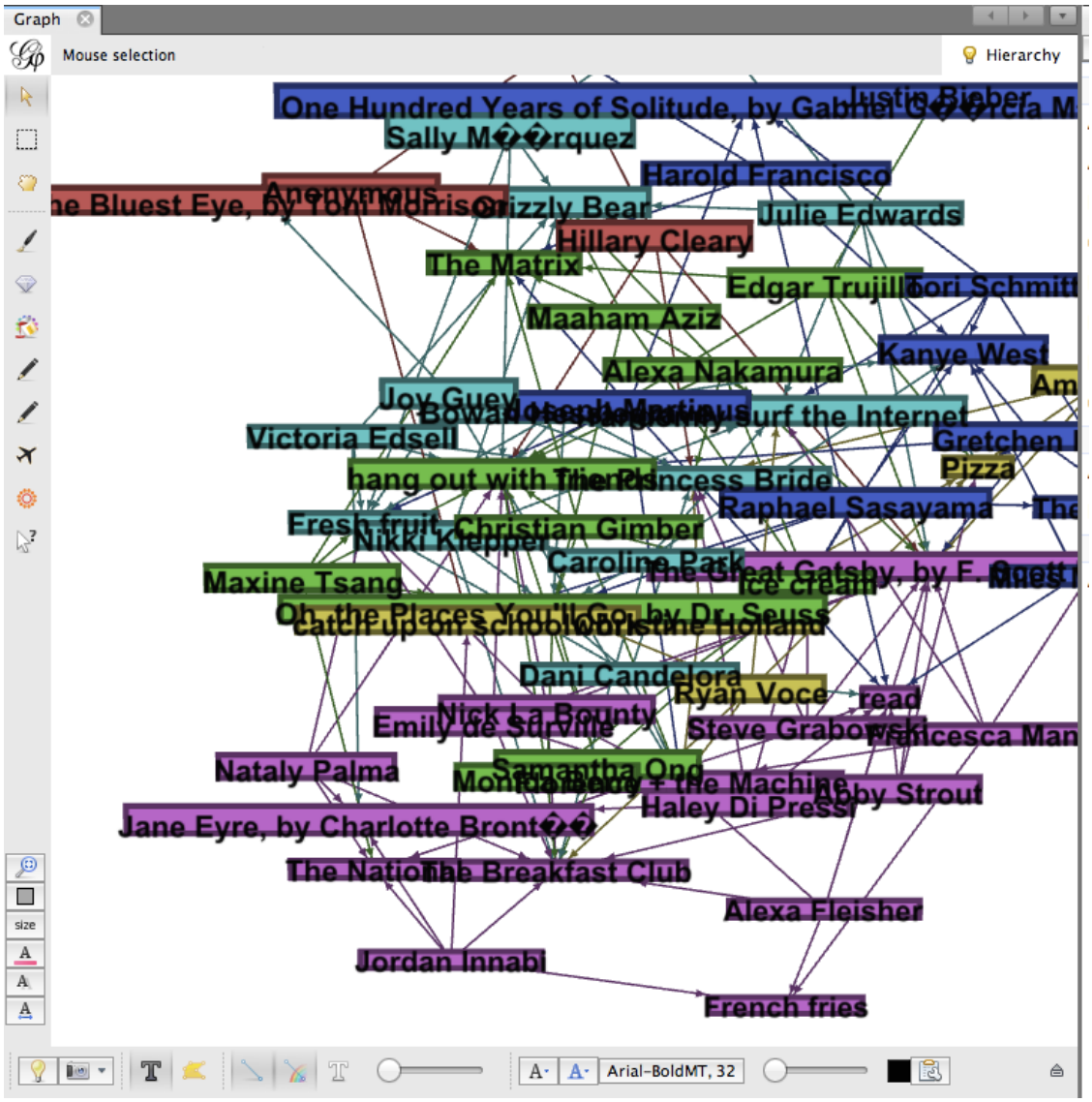
We want to see if we can identify clusters of students who have things in common. To do this, we'll calculate modularity. On the **Statistics** pane (at the right of your screen), click on the **Run** button that appears next to **Modularity**. In the next popup window, click **OK**, then click **OK** in the next window.

Color your nodes by community.



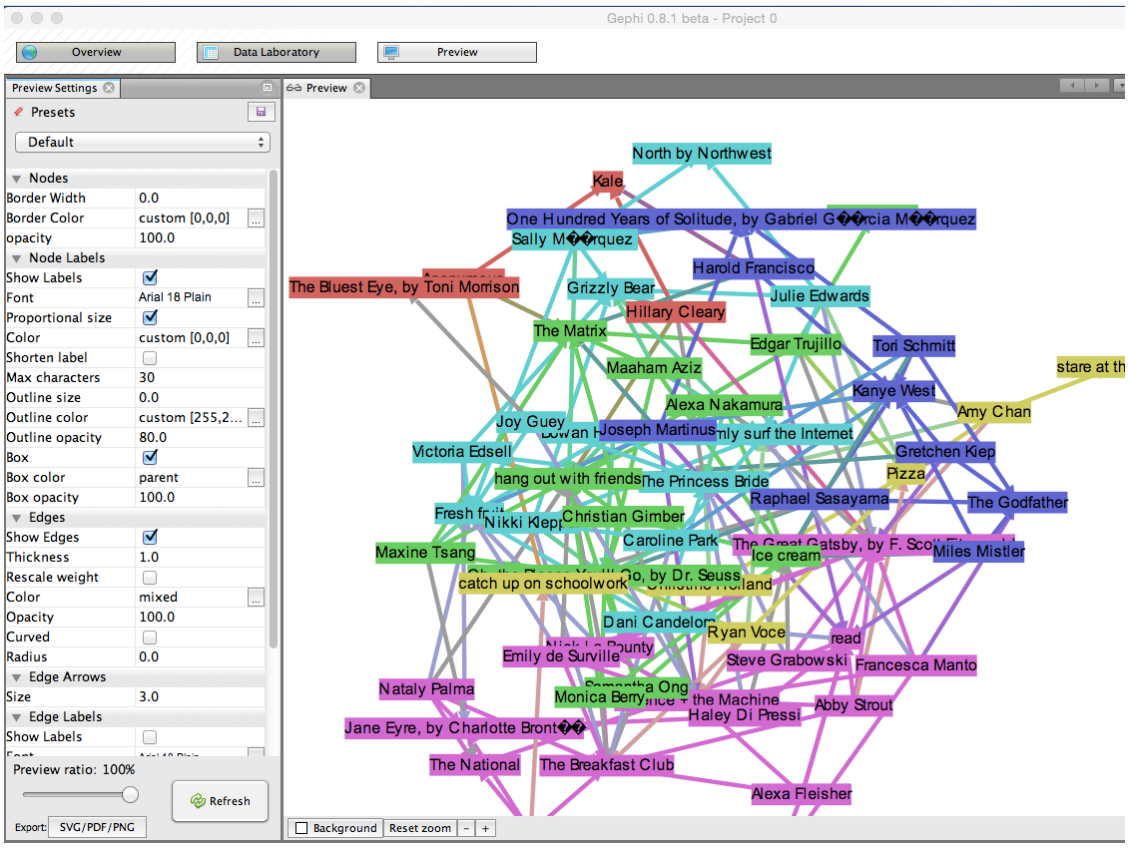
Now that we've calculated modularity, we can color nodes according to their communities. To do that, go to the **Partition** pane (on the left side of the Gephi window) and click on the little **Refresh** icon **(1)**. From the dropdown window, select **Modularity Class**. Finally, click

Now we have communities.



Now we can see which students' preferences bind them together into communities. Students who have the most in common are colored the same color, along with their common preferences.

Save and share!



You can save your Gephi graph as a Gephi file, so you can open it up again later and edit it. You can also take a screenshot from the **Overview** panel (click on the tiny camera). You can also click on the **Preview** pane to see a somewhat nicer presentation of your network diagram, and you can change the look of it on the left-hand side of that pane. (Be sure to click **Refresh** after each change.) Once you're happy, click on the **SVG/PDF/PNG** button to export it as an image file.