**Plot.ly Homework - Belly Button Biodiversity**

In this assignment, you will build an interactive dashboard to explore the [Belly Button Biodiversity dataset](http://robdunnlab.com/projects/belly-button-biodiversity/), which catalogs the microbes that colonize human navels.

The dataset reveals that a small handful of microbial species (also called operational taxonomic units, or OTUs, in the study) were present in more than 70% of people, while the rest were relatively rare.

**Step 1: Plotly**

1. Use the D3 library to read in samples.json.
2. Create a horizontal bar chart with a dropdown menu to display the top 10 OTUs found in that individual.

* Use sample\_values as the values for the bar chart.
* Use otu\_ids as the labels for the bar chart.
* Use otu\_labels as the hovertext for the chart.

1. Create a bubble chart that displays each sample.

* Use otu\_ids for the x values.
* Use sample\_values for the y values.
* Use sample\_values for the marker size.
* Use otu\_ids for the marker colors.
* Use otu\_labels for the text values.

1. Display the sample metadata, i.e., an individual's demographic information.
2. Display each key-value pair from the metadata JSON object somewhere on the page.
3. Update all of the plots any time that a new sample is selected.

Additionally, you are welcome to create any layout that you would like for your dashboard. An example dashboard is shown below:

**Advanced Challenge Assignment (Optional)**

The following task is advanced and therefore optional.

* Adapt the Gauge Chart from <https://plot.ly/javascript/gauge-charts/> to plot the weekly washing frequency of the individual.
* You will need to modify the example gauge code to account for values ranging from 0 through 9.
* Update the chart whenever a new sample is selected.

**Deployment**

* Deploy your app to a free static page hosting service, such as GitHub Pages. Submit the links to your deployment and your GitHub repo.
* Ensure your repository has regular commits (i.e. 20+ commits) and a thorough README.md file

**Hints**

* Use console.log inside of your JavaScript code to see what your data looks like at each step.
* Refer to the [Plotly.js documentation](https://plot.ly/javascript/) when building the plots.

**About the Data**

Hulcr, J. et al.(2012) *A Jungle in There: Bacteria in Belly Buttons are Highly Diverse, but Predictable*. Retrieved from: <http://robdunnlab.com/projects/belly-button-biodiversity/results-and-data/>

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