**Species Diversity: An Investigation**

**Purpose**: To expand your knowledge of genetic diversity using a real-life example, and to be able to provide evidence for why diversity exists in this specific instance.

**Introduction**: While we could be research botanists and do field work depicting the different species of plants, I figured that could be a little tedious and boring. Instead I want to focus our attention on something that affects us a bit more directly: cars. While cars are obviously not living things, they are an artificial example of species diversity at work, especially in a driving-centered culture like Los Angeles.

**Procedure**:

1. Once your TWO group members have been chosen, begin to decide how you want to categorize cars into different “species.”
2. Next, you and your group members will venture out into a parking lot of your choice. You will make observations on 50 of the cars you see in this parking lot.
3. On your own, you and your group members will make observations in TWO different parking lots around the greater Santa Monica/Los Angeles/California/United States. Again you will make observations on 50 cars you see in each of these parking lots. You will have the weekend to complete these observations.
   1. These cannot be random parking lots. They have to relate to the parking lot you chose in Step 2.
4. When this analysis is complete, you are to construct bell curves, using your categorization as your X-axis and # of cars meeting each criterion as your Y-axis.
   1. Your first bell curve is of the first parking lot (your standard), the second and third bell curves will be of the other two parking lots you investigated
   2. These bell curves can all be on one graph, or three separate graphs. Make note of the differences/similarities.
5. Once your bell curves are constructed, you must decide what type of genetic drift is occurring, and hypothesize why this drift is occurring (if at all).

**Data and Observations:**

As the procedure indicates, provide all of the following in your data and observations section

* Your car classifications/species
* Identify the controls, independent and dependent variables in your experiment
* Locations of each of the three parking lots chosen
* Your field work for each of the three parking lots (50 cars each)
* Your bell curves for each of the three parking lots
* Notes on similarities/differences between the three parking lots chosen

**Post-Laboratory Questions:**

1. How did you choose to classify different car species? Why did you choose this method of classification?
2. How were your chosen parking lots similar and different from one another? In your answer, include three similarities and three differences and explain how each difference could have produced different data from your first parking lot.
3. After constructing the bell curves, what type of “genetic” selection took place? How can you tell?
4. Upon finishing your experiment, what do you think was the biggest contributing factor to any “genetic” diversity seen in your results? Why do you think so?
5. At Beverly Hills a similar study was done comparing faculty cars and student cars. The results showed a staggering difference between the two populations. Construct a bell curve showing what you think happened, and provide an explanation for why there would be dramatic differences between the two populations.