**Lab exercise: Linear Regression Data Analysis in R.**

**Overview:** Analyze data using linear regression in R

Two parameters are keys to interpret the results of linear regression: R2 and p-value. R2 indicates how “good” a linear model fits the data. The p-value indicates whether or not the linear correlation is significant at a given cutoff value.

**Learning objectives:**

1. Understand the concept of linear regression analysis (R2 and p-value).
2. Convert Exel data into ‘csv’ format.
3. Change working directory in R
4. Input data into R
5. Use ‘lm()’, ‘summary()’ functions in R
6. Generate plots in R and save as pictures.

**Materials**

* The R software at <http://www.r-project.org/>. It is pre-installed on the biology HP laptops.

**Procedure**

1. Convert your Excel data into ‘csv’ format using ‘save-as’. Your file should be names “lab-data.csv”.
2. Obtain the R-script from the instructor. ”
3. Double-click the R icon to start the software
4. In R, choose ‘File’-> ‘Change dir’, and select the folder of “linear.regression.in.R’.
5. In R, choose ‘File’->”Open script’, and select the script ‘lm1.R’.
6. Study the script and run the code line by line.
7. When plots are generated, click the plots, choose “File”->”Save as” -> “jpeg” ->”100%quality”. Input the file name for your plots.

**Report should be included with the report for Lab 5.**