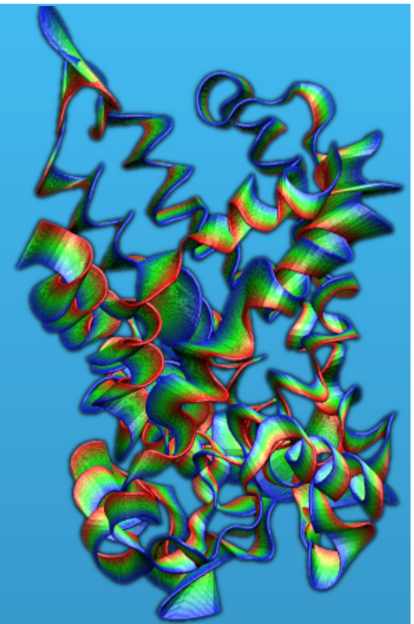

Evaluation and Presentation of Experimental Data – I

Dr. Pramod Abichandani

ENGR 201 – Biweekly Assignment 1

Global warming and Greenhouse gases

Greenhouse gases: Carbon dioxide

Two organizations have provided the carbon dioxide emission data:

1. Carbon Dioxide Information Analysis Center (CDIAC) (http://cdiac.ornl.gov/)
2. United Nations Framework Convention on Climate Change (http://unfccc.int/2860.php)

Provided herewith is a CDIAC dataset that documents the annual Carbon dioxide emissions (CO_2) in thousand metric tons of CO_2

(**Download:** http://mdgs.un.org/unsd/mdg/Data.aspx - Goal 7. Target 7A.)

For all the questions below, perform the appropriate descriptive analyses. Prepare graphically rich content to indicate your answers and demonstrate your findings and/or conclusions.

1) Country with the most/least average CO_2 emissions?
2) Trend in the overall emissions
3) Since 1990, list 5 countries with the highest growth in emissions?
4) Since 1990, list 5 countries with the least growth in emissions?
5) Annual percentage change in US/China CO_2 emissions?
6) Cumulative change in annual US/China CO_2 emissions relative to 1990?
7) What percentage of the overall emissions resulted due to the India, Brazil, and Philippines in 2007?
8) Which will be the top 5 emitters in 2020 given the current emission trends?

Kyoto Protocol

More information on Kyoto Protocol:

- http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php
- http://unfccc.int/resource/docs/publications/08_unfccc_kp_ref_manual.pdf (page 13)

Through the Kyoto Protocol a number of industrialized nations (called the Annex-I nations) entered into an agreement to reduce the overall emissions of CO_2.

1) Did the European Union nations in the Annex-I group of the Kyoto Protocol meet their targets?
2) Did Japan and the US meet their targets?

Real World Environmental Monitoring

On http://wireless.ece.drexel.edu/air_quality/, you will find a collection of environmental data collected by the monitoring system that was discussed in the class.

For the Hunting Park data for all nodes:

1) Calculate the average humidity measured by Nodes 1, 2, 4
2) Calculate the average temperatures measured by Nodes 6, 8
3) Ascertain the node that reports the most variation in the small concentration
4) Provide a complete descriptive statistical analysis of the small concentration (mean, std.deviation, max, min, range)

Drexel University Bossone 333, 3141 Chestnut Street Philadelphia,
PA 19104