EXPLORING BEATY BIODIVERISTY MUSEUM AND HERBARIUM
BIOL/APBI 210

This assignment can be done with a partner or individually.

PART A – Beaty Garden or the UBC Botanical Garden

Visit either the Beaty Garden (around edge of courtyard) or the UBC Botanical Garden. Find a plant that interests you that has a label and is native to British Columbia (you may have to Google for geographical information and other info).

a) Take a picture of the label (submit this with your assignment).
b) Make a detailed description of the plant (what it looks like **now** – be careful as in some cases the plant completely dies back. Check with Mr. Google). If there are no aerial parts evident then just say "died back"
   Use terminology you've learned in BIOL/APBI 210such as axillary buds, leaf scars, bark, etc.
c) Describe the vegetative and reproductive structures of this plant when it is fully grown (you may include drawings).
d) Use terminology you've learned in BIOL/APBI 210such as axillary buds, leaf scars, bark, etc.
e) Describe ways in which First Nations people use/used this plant (food, technology). Give an example of one First Nation that uses the plant and describe the location of their territory.

PART B – UBC Herbarium Database

Find out more about your plant and gain experience using a database!! Look up the species your species on the Herbarium Database and answer the following questions:
https://herbweb.botany.ubc.ca/herbarium/search.php?Database=vwsp

a) How many specimens of the species are in the herbarium collection?
b) Based on the database what is the general geographic distribution of the species? Does this match what you find when you search the internet?
c) Who collected the most specimens of your bryophyte?
d) What is the earliest date the species was collected? By whom? From where?

PART C – Visit the Beaty Museum

Explore the herbarium collections (cabinets of the museum). These are scientific collections as well as exhibits.

Answer the following questions based on museum exhibits (and maybe a little googling).

I. Cabinet Exploration – wander through isles of Vascular Plant cabinets – answers to these questions can be found there.

a) When was the UBC Herbarium established. Who was responsible for establishing it? What else did he do?
b) How are vascular plants stored in the museum?

c) Find the cabinet in which specimens of the species you identified in Part A are stored. What is the cabinet number? To what family does it belong? What other genera are in this family?
d) What is the defining feature of Angiosperms? What percentage of flowering plants belong to this group?
e) What is the approximate diameter of the wild type of a sunflower? Where was it domesticated.
f) What is bar coding in the biological sense. Name a researcher who bar codes grasses.
g) What carries sperm to the egg in the conifers?
h) Give an example of a mutual symbiosis between plants and another organism. Explain how each benefit.
i) Which four crops account for ¾ of the calories people eat worldwide.
j) Name a plant family other than the one your plant belongs to and give examples of plants in that family that are important to humans.
k) Explain the value of herbaria.

II. Exhibits between rows 34 & 37.

a) Which areas of British Columbia have warmed the most per decade from 1900-2004?
b) What are two observable impacts of global climate change?
c) Examine the bark in the display of the Pine Bark Beetle. Notice the patterning of insect damage. The larger galleries are made by adults. This is where the eggs are laid; the larvae make the smaller galleries branching from the larger ones. Make a drawing of the infected piece of bark.
d) What are the picnic tables outside the museum made from?
e) Look at the display on invasive plants. How do they potentially threaten the environment?

III. Check out Stumpy in the back of the museum.

a) When was Stumpy born (ie. germinating)? Stumpy had human neighbours – who would they have been? What historical events were going on in Europe during this time?
b) Approximately how old was Stumpy when the first residential school was opened in British Columbia. Where was the first residential school in B.C.?
c) Why is *Thuja plicata* (western red-cedar) considered the tree of life by coastal First Nations People?
d) Explain why the microscope section pictured in this display cannot possibly be made from Stumpy.
e) Another slice of Stumpy is in front of Lecture Hall 1000 in BioSciences. Who wrote the quote that encircles him?

Bonus: Find signage about vascular plants in Beaty that is inaccurate (based on what you have learned in BIOL/APBI 210).