

## **EESC W4947: HOMEWORK #1**

**Due:** *Tuesday Jan. 24, 2012*

The main goals of this simple exercise are (a) to familiarize yourself with GeoMapApp, and (b) to prepare for the term paper/project.

- 1) Find and download GeoMapApp, onto your computer (e.g. google “GeoMapApp”)
- 2) Take the basic tutorials that teach you how to zoom in, and how to use the “profile” tool.
- 3) Zoom in on the north Atlantic, then draw a profile from New York to the closest point on the west coast of Africa.
  - a. How deep is the deepest water? Where is it?
  - b. how far is it from the North American continental slope (edge of continent) to the mid-Atlantic Ridge? How deep is the summit of the mid-Atlantic ridge?
- 4) Switch the underlying grid to “SeaFloor Bedrock Age” (on the Global Grids popup box, select from menu, then wait). Redraw your profile.
  - a. How old is the oldest sea floor on the profile?
  - b. Based on data you just measured along your profile, roughly how fast has the Atlantic opened, over its history? (hint: 1 km/Ma = 1 mm/yr)
  - c. How old is the central part of the Caribbean (near 15°N, 70°W)?
- 5) Select a term paper region (or I will pick one for you, at random, if you are stuck).
  - a. Make a map of the region with GeoMapApp. Save it in some format that you can print and edit later, recommended to save both a jpeg and a postscript or pdf plot. You should try to manipulate that map if possible by adding a label or two, print it out with the assignment.
  - b. Find your way to Web of Science (under E-resources/databases on the Columbia Libraries website), and identify at least 2 interesting papers on the region. They should deal with some tectonic issue rather than something else (e.g. ones that deal with plants, weather, economic geology or other subjects don't count). List in standard-journal-reference form these 2 papers, including titles, authors, journal, volume/page, year. You are encouraged to download the papers and print out the abstracts, they will be useful later. (You may want to 5b before 5a.)

### General Hints:

From the GeoMapApp web page you can find a series of very helpful tutorials. My favorites are the “multimedia” tools, which are short (1 minute) voice-over animations of the App being used. Give it a shot – this is a very useful tool for a variety of applications, and we are likely to return to it later in the semester.

Grading Rubric

20 pts total

8pt (1), (2) (free)

4pt (3) draw profile across Atlantic. (a)(b) 2x2x1 pt per question

4pt (4) (a) 1pt (b) 3pt; incl. reasonable rate

4pt (5) 2pt for map of area, 2pt/1 per each paper