Individual Project in GOG201 (Spring 2003)

The project consists of:

1. Measurements of air temperature, speed of wind and a barometric pressure.
2. Measurements of noise pollution.
3. Measurements of radiation levels.
4. Measurements of temperature, pH, oxygen concentration and oxygen saturation level, as well as turbidity of water (we already performed these measurements during our field trips).
5. Measurements of concentration of different chemicals in the Patroon Creek water (these observations will be made in the Physical Geography Laboratory with application of Ion Chromatographer).
6. Calculation of the discharge of Patroon Creek to Hudson River and estimates of the discharge variability (see you handouts for the field trip and class notes).
7. Calculation of the chlorite and sulfate transport from Patroon Creek to Hudson River (based on your estimates of the discharge and measured concentrations of chlorite and sulfates).
8. Sampling of soil A horizon for estimates of: a) bulk density, b) soil moisture, c) soil pH (water and 1 M KCl solution), d) texture (gravitational separation of sand, silt and clay fractions), (see handouts).
9. Writing the report.

I. How to start.

1. Find 3 partners (this project is designed for the work in groups of four).  2. Come to the Earth Science Bld. and find me (room 319A, tel. 24191) or our TA Kirsten (room 342, Physical Geography Lab).  3. Please, sign for the equipment. You will also receive manual for equipment and some additional handouts. 4. You may start from any of the items above (except #9). It will take ~2 h in the field, ~3 h in the laboratory (room 342 ES) and ~6 h of your time for writing the report. The report must be prepared on computer. The use of graphics is a plus.
II. Where to measure.

a. Measurements of atmospheric parameters (item #1) can be done at any 2 of the following 5 places: the fountain area; baseball field; one of the parking lots; Indian pond area; inside biological preserve ("forest" around Indian pond).

b. Measurements of noise pollution should be performed at 3 different locations: dining area (in student's center, e.g. in a few meters from pizza place); Indian pond area; fountain area.

c. Measurements of radiation levels should be performed at the same locations as measurements of noise pollution. Do not forget to keep radiation monitor close to the surface (e.g. soil or floor or water surface).

d. Measurements of water properties in situ (in the point) was already performed during our field trip. During your work in the laboratory under supervision of Mr. Steve How, you will learn how to use Ion Chromatograph to derive additional data on concentration of few ions in the water (chlorite, sulfate, phosphate etc.). Please, do not forget to make a copy of the chromatogram with results of your analysis of Patroon Creek water.

e. Sampling of soil must be performed for one site of the following four choices: soil from the bank of Indian pond; soil from the great circle; soil from the garden outside the ES building; soil from any biological preserves "forests" on the campus.

III. Where to analyze

Soil analysis must be performed in the Physical Geography/Geochemistry laboratory, room 342 ES. Please, sign first for the time of the work (see Kirsten for schedule), and keep your appointment.

IV. How to write report

Althea, the work in field must be performed in groups, the report writing is purely individual effort. Your report should include, but not limited, by the list of measurements with clear description of sites and their locations. You should describe the equipment and laboratory methods used to make all of your measurements. At the end of the report you should discuss results and explain why, for example, oxygen concentration is low/high in the Indian pond, or why the pH of Patroon Creek water is not acidic, or why the bulk density of the soil from the garden is lower than from the Collins Circle etc. I am encouraging you to make graphs and drawings of whatever you think is important for this report (use of computer graphics is a plus).

Report must consist of six parts:
I. Introduction (general description of the area, purpose of your study etc.)

II. Description of the sampling sites (e.g. description of the Patroon watershed and places where you made measurements)

III. Methods used to make your estimates (filed as well as laboratory methods you’ve learn in this class).

IV. Results (description of your data, tables, graphs etc.)

V. Conclusion

VI. Literature cited (if any)

**IMPORTANT NOTE:** Please, handle all equipment with care and delicacy. The next generations of SUNYA students will appreciate your efforts.