My Summer Internship With Earth, Wind and Fire

Zach Sutton* – Elizabeth Sulzman

*Dept. of Environmental Sciences, OSU, OR, USA; Dept. of Crop and Soil Science, OSU, OR, USA

Airshed

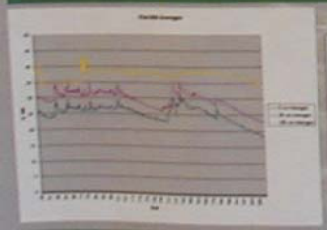
• **Project overview:** Cold air drains downhill in mountainous terrain. This project seeks to collect and analyze cold air drainage to investigate whether it faithfully records ecosystem health. Field measures of foliage respiration, soil respiration, and whole ecosystem respiration, along with their isotopic values, are used to assess the status of the regional carbon cycle.

• **Where:** Field work at the HJ Andrews Experimental Forest, Blue River, OR; Lab work in the OSU Soils Department.

• **Graduate student mentors**: Holly Barnard, Zachary Kayler, Claire Phillips

• **Expertise gained:** Field measurement of soil respiration (Licor 6200); Analysis and visualization of continuous soil moisture and temperature data; Web design and data sharing

LiCor 6200
Photosynthesis/Respiration
system



Map of Airshed plots in Watershed 1 at HJA

DIRT

• **Project overview**: The goal of DIRT (Detritus Input and Removal Treatments) is to assess how rates and sources of plant litter inputs control the long-term stability, accumulation, and chemical nature of soil organic matter.

• **Where:** HJ Andrews Experimental Forest.

• **Graduate student mentor**: Cameron Bergen

• **Expertise gained:** learned about experimental design, replication vs. pseudoreplication, and the importance (and tedium) of plot maintenance.

Fire

• **Project overview :** This project evaluates the effects of burn severity and post-fire salvage logging on soil chemical, physical, and biological properties critical to forest regrowth following wildfire.

• **Where:** Deschutes National Forest, near Sisters, OR; Lab work in the USDA Forest Service Research laboratory (FSL).

• **Graduate student mentor**: Tara Jennings

• **Expertise gained:** Soil DNA extractions; fragment removal from PCR products; field collection and homogenization of soil samples; field measurement of soil infiltration and soil respiration.

In conclusion: My summer internship has endowed me with many skills and much know-how in multiple fields of study. I was able to experience the ins-and-outs of major research projects and contribute to the best of my abilities. The funding provided by SBI has enriched my education and aroused my interest in graduate research, something I lacked before this summer. So, thank you to everyone involved, especially to all the faculty and grad students that took time and energy to explain what it was I was doing (even though it was 2:00 am and we were sitting at the top of the transect with a 50 lb LiCor strapped to our backs).