

**A Summer Research Experience at Hubbard Brook Experimental Forest:
Investigating and Communicating Change in Ecosystems**

1st Annual Undergraduate Research and Outreach Conference

Friday, August 8, 2008 at the Pierce Lab, Hubbard Brook Experimental Forest.

10am: Opening remarks and introductions

10:15: Student presentations of Science Communication projects:

Student/team

Partner organization

Tyler Krieder

U.S. Geological Survey – Sleeper’s River

I have written a brief (2-3 page) history of Sleepers River, in which I am conveying the importance of the work accomplished there as well as the importance of long-term datasets. The historical summary will include research highlights and background on the four organizations that have operated the site. This summary will be placed on their website to inform any visitors to the website of the worth of maintaining a long term data set.

Jordan Christ and Shelly Garber Margaret and H.A. Rey Center

We have created a conference type poster summarizing the Rey Center's long-term ecological research. This research is focused on monitoring the phenology of vegetation communities along an elevational gradient on Mount Tecumseh in Waterville Valley, NH, with the intention of providing long-term quantitative and qualitative data on the timing of recurring biological phases in plant communities.

Patricia Brousseau

USDA Forest Service and NRCS

I have designed and written a brochure to communicate why the USDA Forest Service and the Natural Resource Conservation Service are cooperating on a soil survey of the White Mountain National Forest. The emphasis is on the insights the survey will provide on ecological processes and the role this information will play in directing both short and long term management decisions.

Susan Wheatley;
Rebecca Daley

NH Dept. of Environmental Services

We created a pamphlet for land use planners describing the function and importance of buffers around wetlands. There is not currently legislation which regulates buffers around most wetlands in New Hampshire, yet local planning boards do have some ability to influence the wetland impacts of development. The aim of this pamphlet is to educate local planning board members and encourage them to promote buffer zones around wetlands.

Mallory St. Pierre;
Courtney Reijo

Squam Lakes Natural Science Center

We worked with the Squam Lakes Science Center on a project concerning the recent BioBlitz bio-inventory. Their BioBlitz concentrated on a number of natural areas in and around the Squam Lakes Watershed and generated an enormous amount of information. We designed and produced an educational poster describing the event, emphasizing the number of species observed and highlighting interesting observations. The information from this poster will also become a page on their website.

Ian Wheat; Bene Bachelot

Society for the Protection of NH Forests

We constructed a brief powerpoint presentation explaining the concept of carbon sequestration, its importance in the growing issue of global warming, and the relevance to private forest land owners. The Forest Society is beginning a carbon accounting of their landholdings as a step towards aiding the public in understanding the role New Hampshire's forests play in the cycling of carbon.

(not presenting)

Sarah Hurley

NH Dept. of Environmental Services;
PSU Center for the Environment

I have written an article for the DES' newsletter which evaluates a new automated method for total phosphorus analysis. This new method is much more precise and less time-consuming than traditional methods and will aid in the perception of water quality trends in lakes. This will also raise awareness for the need for long term analytical data on aquatic health.

11:45: Roundtable discussion of the communications portion of the program

12:15: Lunch

1:00: Research Presentations

Student

Mentor/mentor team

Ian Wheat

Tim Fahey; John Battles; David Peart

The effect of beech bark disease on beech root sprouts and the understory of canopy beech trees in a New England forest.

Shelly Garber

Steve Hamburg; Will Yandik

The effects of former agricultural land-use on recruitment of northern red oak (*Quercus rubra* L.) in Grafton County, NH.

Courtney Reijo

Steve Hamburg; Will Yandik

The effects of canopy gap characteristics on northern red oak (*Quercus rubra* L.) regeneration at Bald Mountain, Campton, NH.

Mallory St. Pierre

**Steve Hamburg; Len Reitsma;
Kerry Yurewicz**

Rodent activity near stone walls at Bald Mountain, NH, and its potential influence on oak regeneration.

Rebecca Daley

**Christy Goodale;
Charley Driscoll**

Project 1: What changes have occurred in nitrate, DOC, and DON since 1996-7 and 1973-1974?

Project 2: What are the dominant water and chemical source areas within a watershed? Does this change at the event scale?

Susan Wheatley

Pam Templer; John Campbell

Effects of soil frost on nitrogen cycling in a spruce/ fir forest.

Patricia Brousseau

Scott Bailey; Kevin McGuire

A catchment scale analysis of the interactions between physiographic position, hydrological flowpaths and soil profile development.

Jordan Christ

Michele Pruyn

Monitoring physiology of Yellow Birch (*Betula alleghaniensis*) in relation to weather data along an elevational gradient.

Tyler Kreider

Kevin McGuire; Scott Bailey

Patterns of channel wet-up and dry-down in Watershed 3 in relation to their spatial position, channel slope, channel substrate, and degree of channel incision.

Benedicte Bachelot

Linda Pardo

Sugar maple response to base cation depletion on a northern hardwood forest.

(not presenting)

Sarah Hurley

Steve Kahl; Adam Bauman

A methods comparison for total phosphorus using a modified automated digestion procedure with a detection limit of 2 ppb.

4:00 Closing remarks