A. **Briefly describe overall research program at your laboratory.** My laboratory generally studies organic carbon dynamics in soils in regard to carbon sequestration and what environmental factors can influence the process. Organic matter “quality” (meaning the labile vs recalcitrant fractions of organic material), soil temperature, clay content, acidity, water content and many other factors play a role in the ability of soil to retain carbon over the long term. Students in my lab have worked on clay chemistry, fire affected soils, peat deposits as well as on soils from deserts, mountains and coastal regions. Boreal soils are particularly important area regarding soil carbon dynamics due to: 1. The amount of carbon in the soils of that region are roughly equal to the total carbon content of global vegetation and 2. The atmospheric temperature of that region is increasing much more rapidly than the average global temperature. We are beginning a project in which are investigating how boreal forest understory species vary in light regimes and how that connects to below ground decomposition rates.

B. **Briefly describe specific project(s) for your teacher:** The ultimate goal of this work would be to have the teacher develop into a field assistant for travel to Churchill, Canada to participate a course I am teaching on Subarctic Landscapes. While there, we hope to deploy some remote sensing equipment, conduct initial plant surveys and collect samples in order to extract preliminary data for early research stages. During the summer, the teacher involved would help prepare material for sampling in the subarctic, help construct and test remote monitoring stations that will be deployed in the subarctic while we are there, learn how to measure and identify trees, conduct plant surveys of above ground understory vegetation and learn to calculate carbon and nitrogen percentages. The funding for this proposal will cover the teacher’s travel, room and board and food while there. The travel is tentatively scheduled for the first week of August.

C. **Will any other people (post docs, grad students, undergraduate students, colleagues, etc.) be involved directly with your teacher?** The teacher would work with me, and the other undergraduate research students in our lab group.

D. **Will you require any advanced reading/preparation for the teacher?** If yes, please briefly describe. I would have some basic information regarding the subarctic and soils for the teacher to read prior to the summer. I will get the teacher familiar with sampling techniques and laboratory equipment on arrival.