

Email from John Hobbie to Joyce Voight 7 April 2010

Joyce Voight
Realty Specialist
Central Yukon Field Office
1150 University Avenue
Fairbanks, AK 99709

Dear Joyce"

I would like to request to add the NSF project of Dr. Jim Tang to the existing LTER research permit for Toolik His project takes up an important question, how soil microbes will respond to a changing climate. Based on past interactions with Boyce Bush, here is information you may need:

1. Purpose: to examine response of microbial and root respiration to earlier snow melt and later soil freeze-up.
2. Experiments: small open-top chambers (like the existing ITEX chambers) will be placed on the tundra for passive solar heating. These are 0.8 m in diameter. The CO₂ in the soil will be measured with an automatic instrument powered by battery and solar panel. Above-ground plants will be collected by harvesting to measure plant growth. This instrument will be in place only in the summer months. A trench will be dug around some of the small plots (50 cm in diameter) and plastic sheeting will be placed to isolate the plot from plant roots.
3. Duration: the project is initially funded for one year by NSF beginning in spring 2010. Additional funding will be sought. Jim Tang will continue the measurements for three years in any case.
4. Location and size of plots: twenty small plots will be set up, each 50 cm in diameter (experimental treatments will be 5 warming, 5 warming + trenching, 5 trenching, and 5 control). The total area for the research will be 30 x 30 m and it will be located at Research plot centroid coordinates (WGS84) : Lat: 68.62227 Long: [-149.60499](#). See attached map for the site location. The Toolik Field Station will be consulted before any plots are set up.
5. Site disturbance. The chambers and buried plastic sheeting will be left in place for 3 years and then removed. The plants at the site will quickly regrow and there will be no permanent change in the ecosystem.

Please let me know if there are any other questions I can answer.

Thank you for your help.

Sincerely yours,

John Hobbie, Director, Arctic LTER project