



# The Department of Ecology and Evolutionary Biology Spring 2018 Seminar Series

## Effects of warming and elevated CO<sub>2</sub> on ecosystem processes in a northern peatland

Peatland ecosystems store a disproportionate amount of carbon in soils relative to their global areal coverage. Given that peatlands are carbon hotspots on the landscape, it is important to understand how climate change may affect carbon dynamics and associated biogeochemical and hydrological cycles in peatlands. The Spruce and Peatland Responses Under Changing Environments (SPRUCE) project is a large-scale ecosystem experiment examining the responses of a black spruce-Sphagnum bog in northern Minnesota to elevated temperature and CO<sub>2</sub> concentrations. Ten 12-m diameter, open-topped enclosures were constructed within the peatland and are used to increase air and soil temperatures (+0, +2.25, +4.5, +6.75, and +9°C) and CO<sub>2</sub> concentrations (ambient, elevated [+500 ppm]) over 10 years. Several hydrological and biogeochemical processes are measured within each enclosure. In this presentation, I will discuss the ecosystem responses during the first two years of the experiment, including the effects on stream flow and chemistry, porewater chemistry, and litter decomposition. Overall, this large-scale and long-term experiment will help understand the effects of climate change on peatland water, carbon, and nutrient cycles and will inform ecosystem and Earth system models.

Join us in welcoming  
**Dr. Natalie Griffiths**  
Oak Ridge National Laboratory

Friday, March 9 2018  
SERF 307 - 3:30 PM  
Pre-talk Reception 3:00 PM  
in Dabney 575

