Name:

Mini-Quiz 4

BIOL 4301/6301

September 28, 2023

1 **Draw three figures to illustrate how (1) temperature, (2) litter C/N ratio, and (3) soil microbial biomass influence litter decomposition. Next to each figure indicate why you expect the trend you illustrated.**

2 **How do you think eutrophication (the addition of nutrients to soils) will influence soil organic carbon? Provide your answer in the form of a hypothesis with both the expected response and biological reasoning.**

3 **How do you think elevated atmospheric CO2 will influence soil organic carbon? Provide your answer in the form of a hypothesis with both the expected response and biological reasoning.**

4 **How do you think increasing temperature will influence soil organic carbon? Provide your answer in the form of a hypothesis with both the expected response and biological reasoning.**

5 **From the NEP equation (NEP = GPP - (Rplant + Rhet)), reductions in heterotrophic respiration would seem to be a way to increase NEP and thus, reduce atmospheric CO2. What feedback may preclude this from working? Provide your answer with text and a systems diagram.**