

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 carbon stored in soils? 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 carbon stored in soils? 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 carbon stored in soils? Provide your answer in the form of a hypothesis with both the expected response and biological reasoning.

- 5** From the NEP equation ($NEP = GPP - (R_{plant} + R_{het})$), 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.