Title: Leveraging the Bioeconomy for Carbon Circularity and Removal

Abstract: Achieving a circular economy is critical for a sustainable future, particularly in sectors that currently produce resource-intensive products in a linear fashion. At the same time, technologies that remove atmospheric carbon must be developed and deployed rapidly if we are to avoid the worst effects of climate change. Circularity and carbon removal are often assessed and discussed independently, even though they are highly intertwined. Innovations in industrial biosystems are essential to achieving a circular economy and enabling rapid deployment of carbon removal technologies. Further, the Aines Principle states that the value in biomass waste materials is shifting from energy to carbon, which will have significant implications on innovation efforts in the bioeconomy. Results from the recently completed DOE-funded national assessment on carbon removal, titled “Roads to Removal”, will be presented. Synergistic opportunities for circularity and carbon removal in the bioeconomy will be emphasized.