Oil and natural gas pipelines are essential to the transport of energy materials, but construction of these pipelines commonly causes major disturbance to ecosystems. Due to variability in pipeline installation practices and environments and the lack of studies conducted on this topic globally, drawing consensus about how pipeline installations typically impact ecosystems has been challenging. Additionally, no study regarding this topic has ever been conducted in Ohio, which creates a large gap of knowledge for farmers, landowners, extension officers, and advocates throughout the state, particularly as best management practices around pipeline installation have improved in the last 70 years. We conduct a comparative study on three recently installed pipelines—Rover, Utopia, and Nexus—throughout 30 agricultural sites in nine counties in Ohio to analyze soil and grain crop properties three and four years after pipeline installation. By utilizing in situ field-based measurements like penetration resistance, paired with laboratory methods like infrared spectroscopy to analyze more complex soil physical, biological, and chemical properties, we compare Right-of-Way (ROW) soil properties and crop yields near pipeline installation to adjacent, unaffected regions of the same field. On average during the first year, corn grain decreased an average of 23.8%, silage corn decreased an average of 28.8%, and soybean yield decreased an average of 7.4% in ROW yields compared to adjacent areas. Comparatively, in 2021, areas over the ROW yielded 19.5% less corn and 12.6% less soybean compared to adjacent areas across all sites.

Advisor: Dr. Steve Culman

WEDNESDAY, APRIL 6, 2022
1:00 P.M.

Join the seminar via Zoom: https://osu.zoom.us/j/95448238786?pwd=MmlUQ3pFUSs1MDBod3RlY2NlIdEIsQT09
Meeting ID: 954 4823 8786  Password: 328921