Teresa Bates, David Pask and Paulette N. Willis* (pnwillis@math.uiowa.edu), 70 Cherry Ct., Apt 2, North Liberty, IA 52317. Labeled Graph $C^*$-algebras with Group Actions.

In this presentation, I will discuss joint work with Teresa Bates and David Pask concerning (discrete) group actions on labeled graphs and the resulting crossed product $C^*$-algebras. In particular, I will discuss a version of the Gross-Tucker Theorem for labeled graphs. I will also discuss analogues of some of our results in the context of Leavitt path algebras.

A labeled graph $(E, \mathcal{L})$ over an alphabet $\mathcal{A}$ consists of a directed graph $E$ together with a labeling map $\mathcal{L}: E^1 \to \mathcal{A}$. One can associate a $C^*$-algebra to a labeled graph $(E, \mathcal{L})$ in such a way that if the labeling $\mathcal{L}$ is trivial then the resulting $C^*$-algebra is the $C^*$-algebra of the graph $E$. Further, just as there is a canonical correspondence between graph $C^*$-algebras and shifts of finite type, there is a similar correspondence between the $C^*$-algebras of labeled and sophic shifts. (Received September 20, 2009)