1065-47-89 **Katie Spurrier Quertermous*** (querteks@jmu.edu), Department of Mathematics & Statistics, MSC 1911, James Madison University, Harrisonburg, VA 22807. *C^*-algebras Generated by Linear-fractionally-induced Composition Operators.*

Let φ be an analytic self-map of the unit disk $\mathbb{D}$, and let $H^2(\mathbb{D})$ denote the Hardy space of the disk. We define the composition operator C_φ by $C_\varphi f = f \circ \varphi$ for all $f \in H^2(\mathbb{D})$. We are particularly interested in composition operators induced by linear-fractional, non-automorphism self-maps of $\mathbb{D}$ that fix a given point ζ on the unit circle and satisfy $\varphi'(\zeta) \neq 1$.

In this talk, we consider two types of C*-algebras: $C^*(C_\varphi, \mathcal{K})$, the unital C*-algebra generated by the ideal of compact operators and a single linear-fractionally-induced composition operator of the form described above, and $C^*(\mathcal{F}_\zeta)$, the unital C*-algebra generated by the collection of all composition operators induced by linear-fractional non-automorphisms that fix a given point ζ on the unit circle. We show that each of these C*-algebras is isomorphic, modulo the ideal of compact operators, to the unitization of an appropriate crossed product C*-algebra. We then apply known results for crossed products by the integers to determine the K-theory of $C^*(C_\varphi, \mathcal{K})$ and calculate the essential spectra of a class of operators in this C*-algebra. (Received September 03, 2010)