1159-13-152 **James E Gossell*** (jgossel@clemson.edu). *Gorenstein Injective Modules under Flat Base Change.* Preliminary report.

For $A \to B$ a flat homomorphism of commutative noetherian rings and M an injective A-module, we can calculate the injective dimension of $M \otimes_A B$ as a B-module by calculating the injective dimensions of the fibers $F(\mathfrak{p}) = B_{\mathfrak{p}}/\mathfrak{p}$ for each $\mathfrak{p} \in \operatorname{Ass}(M)$ by the formula $\operatorname{id}_B(M \otimes_A B) = \sup_{\mathfrak{p} \in \operatorname{Ass}(M)} \operatorname{id}_{F(\mathfrak{p})} F(\mathfrak{p})$ (Foxby, 1975). This formula can be used to recover the fact that injective modules remain injective under certain flat base changes, such as a localization. We work towards a generalization of Foxby's Theorem to calculate the Gorenstein injective dimension of the base change of a Gorenstein-injective module. (Received August 03, 2020)