Alina Iacob* (aiacob@georgiasouthern.edu). \textit{Generalized Gorenstein injective modules.}

We introduce a generalization of the Gorenstein injective modules - the Gorenstein $FP_n$-injective modules, denoted $GI_n$. They are the cycles of the exact complexes of injective modules that remain exact when applying a functor $Hom(A, -)$, with $A$ an $FP_n$-injective module. Thus $GI_0$ is the class of classical Gorenstein injective modules, and $GI_1$ is the class of Ding injective modules. We prove that when $n \geq 2$, the class $GI_n$ is the right half of a perfect cotorsion pair, and therefore it is an enveloping class. For $n = 1$ we show that $GI_1$ (i.e. the Ding injectives) forms the right half of a hereditary cotorsion pair. (Received July 03, 2020)