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Sean Sather-Wagstaff* (sean.sather-wagstaff@ndsu.edu). *Derived category techniques in commutative algebra.*

A fundamental idea in homological algebra is to consider a complex of R -modules as a single object to be acted on and studied as a whole, rather than as a combination of separate pieces. For instance, this allows one to study the modules $\text{Ext}_R^i(M, N)$ by studying any of the complexes that give rise to these modules. Hans-Bjørn Foxby was a pioneer in this area, with his coauthors, students, and colleagues. I will discuss several results (past and recent) about modules where the only proofs I know require one to use derived categories, and some future directions in this area. (Received July 27, 2014)