1107-13-46 David A. Buchsbaum\* (buchsbau@brandeis.edu). The More I Think of Hilbert....

We survey Hilbert's 1890 paper in which, to prove results in representation theory, he proved his famous Basis Theorem and Syzygy Theorem. We then show how, since the 1950s, work has been done following the inverse arc of that paper, applying syzygy theory (homological algebra) to commutative noetherian rings, and finally coming back to representation theory – the theory that his paper was reputed to have "killed off." (Received December 12, 2014)