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Joshua P Bowman* (joshua.bowman@gmail.com). *Chebyshev-like maps via Newton's identities*. Preliminary report.

The classical Chebyshev polynomials were extended to two-dimensional maps by Koornwinder, Dunn–Lidl, and others, and then to all dimensions by Veselov and Hoffman–Withers using the theory of root systems. We give a more general and simplified framework for these constructions using families of commuting endomorphisms of the algebra of polynomials on \mathbb{C}^n . A key element is the relationship between symmetric power sums and elementary symmetric polynomials, proved by Girard and Newton and commonly called Newton's identities. As a consequence, we are able to characterize families of maps of \mathbb{C}^n that are semiconjugate to power maps. This is joint work with Corey Manack. (Received September 16, 2014)