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John Shareshian and **Michelle Wachs*** (wachs@math.miami.edu). *Gamma-positivity of variations of Eulerian polynomials.*

An identity of Chung, Graham and Knuth involving binomial coefficients and Eulerian numbers motivates our study of a class of polynomials that we call binomial-Eulerian polynomials. These polynomials share several properties with the Eulerian polynomials. For one thing, they are h -polynomials of simplicial polytopes, which gives a geometric interpretation of the fact that they are palindromic and unimodal. A formula of Foata and Schützenberger shows that the Eulerian polynomials have a stronger property, namely γ -positivity, and a formula of Postnikov, Reiner and Williams does the same for the binomial-Eulerian polynomials. We obtain q -analogs of both the Foata-Schützenberger formula and an alternative to the Postnikov-Reiner-Williams formula, and we show that these q -analogs are specializations of analogous symmetric function identities. Algebro-geometric interpretations of these symmetric function analogs are presented. (Received September 26, 2017)