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Robert Davis* (davisr@math.msu.edu), Department of Mathematics, Michigan State University, 619 Red Cedar Rd., East Lansing, MI 48824, and **Bruce E. Sagan.** *Pattern-avoiding polytopes and Bruhat orders II.*

We continue studying $B_n(132, 312)$ and $\tilde{B}_n(123)$, showing that the EL-shellings of the corresponding posets induce highly-structured triangulations of the polytopes. To do so, we examine associated toric ideals, which are algebraic objects that capture relations among the lattice points in the polytopes. In particular, we identify the reduced Gröbner bases of these ideals. A correspondence due to Sturmfels then shows that the order complexes of these posets form triangulations of the polytopes which are regular, unimodular, and flag. Moreover, the theory of (P, ω) -partitions implies that the Ehrhart h^* -vectors of the polytopes are palindromic, which provides a strong condition on certain semigroup algebras generated by the polytopes. Together, these properties imply that the polytopes have unimodal h^* -vectors, as well as easily-computable normalized volumes. If time permits, some natural open problems will be discussed. (Received August 30, 2016)