Christopher Eur* (chrisweur@gmail.com). *Divisors on matroids and their volumes.*

The classical volume polynomial in algebraic geometry measures the degrees of ample (and nef) divisors on a smooth projective variety. We introduce an analogous volume polynomial for matroids, and give a complete combinatorial formula. For a realizable matroid, we thus obtain an explicit formula for the classical volume polynomial of the associated wonderful compactification. We then introduce a new invariant called the volume of a matroid as a particular specialization of its volume polynomial, and discuss its algebro-geometric and combinatorial properties in connection to graded linear series on blow-ups of projective spaces. (Received August 03, 2018)