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**Eric Marberg\*** ([eric.marberg@gmail.com](mailto:eric.marberg@gmail.com)). *Extending the theory of PSD algebras to Hopf monoids in species.*

A vector species is a functor from the category of finite sets with bijections to vector spaces, and a Hopf monoid (in the category of vector species) consists of a vector species with unit, counit, product, and coproduct morphisms satisfying several compatibility conditions, analogous to a graded Hopf algebra. Zelevinsky introduced the notion of a positive self-dual (PSD) Hopf algebra to characterize the algebraic structure of the ring of the symmetric functions; a PSD algebra consists of a self-dual graded Hopf algebra with a basis of "Schur functions" whose structure constants are positive integers. In this talk I will discuss the structure theory and classification of Hopf monoids exhibiting certain strong forms of self-duality, which can be viewed as species analogues of positive self-duality for Hopf algebras. Such results provide a simple way of understanding the relationships between various Hopf algebras attached to towers of unipotent groups, recently considered in the literature. (Received August 10, 2015)