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**Xuanting Cai** and **Robert G. Todd\*** (rtodd@unomaha.edu). *A cellular basis for the generalized Temperley-Lieb Algebra and Mahler Measure.*

We define the  $n^{\text{th}}$   $i$ -colored Temperley-Lieb algebra  $TL_{(n,i)}$  and construct for it an orthogonal basis, which contains a family of idempotents. We then show that this is a cellular basis as defined by Mathis, and show that there is a family of JM-elements which separate the generalized Temperley-Lieb algebra. We then apply several results on cellular algebras with JM-elements to conclude that the idempotents are primitive, and that the subalgebra generated by the idempotents is the same as that generated by the JM-elements. Furthermore, we define recursive elements of  $TL(n, i)$  and show that they are exactly those that lie in the subalgebra generated by the idempotents. These elements are of particular interest as they have been used to related geometric properties of link diagrams to Mahler measure of the Jones and colored Jones polynomials. Lastly we give a slightly improved proof of results of Champanerakar and Kofman that the Mahler measure of the Jones and colored Jones polynomial converge under twisting (Received July 31, 2013)