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John Shareshian and **Michelle L. Wachs*** (wachs@math.miami.edu), Department of Mathematics, University of Miami, Coral Gables, FL 33124. *The maj-exc q -Eulerian Polynomials*. Preliminary report.

We present a new q -analog of a classical formula for the exponential generating function of the Eulerian polynomials. Our q -Eulerian polynomials are the enumerators for the joint distribution of the excedance statistic and the major index. There is a vast literature on q -Eulerian polynomials that involves other combinations of Eulerian and Mahonian permutation statistics, but this is the first result to address the combination of excedance number and major index. Our formula arose from our work on poset topology, but our proof involves only symmetric function theory and bijective combinatorics. (Received January 09, 2007)