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In this talk, I will describe some work of Trevis Litherland and myself on the limiting shape of random Young tableaux. More precisely: Let  $(X_n)_{n \geq 0}$  be an irreducible, aperiodic, homogeneous Markov chain, with state space an ordered finite alphabet of size  $m$ . Using combinatorial constructions and weak invariance principles, we obtain the limiting shape of the associated Young tableau as a multidimensional Brownian functional. Since the length of the top row of the Young tableau is also the length of the longest (weakly) increasing subsequence of  $(X_k)_{1 \leq k \leq n}$  the corresponding limiting law follows. We relate our results to a conjecture of Kuperberg by showing that, under a cyclic condition, a spectral characterization of the Markov transition matrix delineates precisely when the limiting shape is the spectrum of the traceless GUE. For  $m = 3$ , all cyclic Markov chains have such a limiting shape, a fact previously known for  $m = 2$ . However, this is no longer true for  $m \geq 4$ . (Received March 02, 2009)