1022-05-135   **Patricia Hersh** and **Samuel K. Hsiao*** (`hsiao@bard.edu`), Department of Mathematics, Bard
College, P.O. Box 5000, Annandale-on-Hudson, NY 12504-5000. *Quasisymmetric functions and
Markov chains.* Preliminary report.

Let QSym denote the Hopf algebra of quasisymmetric functions. We discuss a connection between Hopf algebra homomorphisms from QSym to QSym and random walks on subsets of $\{1, 2, \ldots, n\}$. These walks are related to random walks on the symmetric group S_n via a process known as lumping. We give conditions under which the transition matrices are diagonalizable and describe a procedure for constructing eigenvectors. (Received September 11, 2006)