1003-F1-206 **Timothy P. Chartier***, Department of Mathematics, Davidson College, P.O. Box 6908, Davidson, NC 28035-6908, and **Reuben K. Fries**. *Rising to the occasion of modeling card shuffling.*

How many shuffles does it take to randomize a deck of cards? If you said seven, your answer is likely rooted in the mathematical research of David Bayer and Persi Diaconis. When Bayer and Diaconis announced their discovery, the New York Times, which rarely reports mathematical result, carried the story. The mathlet that will be presented in this talk visualizes the model for a card shuffle that was developed by Bayer and Diaconis. The model uses Markov Chains and statistics. A key to the discovery was the idea of a rising sequence in a deck of cards. The mathlet shuffles a deck of cards and allows the user to interactively view the resulting randomness of the deck from the perspective of rising sequences. (Received August 27, 2004)