



The Math Colloquium  
Department of Mathematics  
San José State University



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**Berkeley Quantitative**

*Combinatorics in card shuffling*

SEPTEMBER 28, 2011, MH320

**Abstract:** Ever wonder how many times you should shuffle a deck of cards? Or what really happens if you don't shuffle enough? In this talk, we'll give a simple mathematical model for card shuffling (the Gilbert-Shannon-Reeds model) and show how Bayer and Diaconis used this model to prove that, for a standard deck of 52 cards, you should shuffle about 7 times. We'll also present recent joint work with Diaconis and Soundararajan that shows how the number of times you should shuffle depends on what game you're playing. This talk will involve four decks of cards, three volunteers, two magic tricks and lots of great combinatorics.

*Background:* No particular background is necessary, though it would be helpful to have seen binomial coefficients.

**About the speaker:** Dr. Assaf completed her Ph.D. at UC Berkeley in 2007 after which she was an NSF postdoctoral researcher and CLE Moore Instructor at MIT. She currently works as a quantitative research analyst at a small hedge fund in San Francisco.

SNACKS IN MH331B AT 2:30 PM  
TALK STARTS AT 3 PM

For more information, see our full schedule at:

<http://www.math.sjsu.edu/~hsu/colloq/>