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**Roland Minton\*** ([minton@roanoke.edu](mailto:minton@roanoke.edu)), 620 Beech Road, Salem, VA 24153, and **Jake Bennett**. *Thinking Inside the Box: The Mathematics of a Tennis Serve*.

A variety of factors that affect the accuracy of a tennis serve are evaluated using a computer simulation of projectile motion. The model includes the effects of air drag and the Magnus force. The height of the ball toss affects the amount of topspin on the serve, which affects the margin of error of the serve. The amount that the ball is tossed into the court, the positioning of the server along the baseline and the angle at which the serve is hit also affect the margin of error. Special attention is paid to the disagreement among tennis teachers as to whether a serve should be hit up or down. The answer depends on the speed at which the ball is hit and the height of the ball toss. (Received August 10, 2005)