1116-VC-655    **Brandon S Payne\*** (`brandon.payne@cameron.edu`) and **James R Dover**, Cameron University, Lawton, OK. *Maximizing Guaranteed Value in a Fair Division of a Cake under Piecewise-Linear Valuations.*

A 3-flavored cake is to be cut into three pieces to be divided among three people having different preferences. A division is fair if each person receives a portion they consider to be worth at least $\frac{1}{3}$ of the cake's total value. A fair division always exists, but due to the different preferences, it may be possible to give each person a higher value than $\frac{1}{3}$. We determine, based on a given set of piecewise-linear preferences, the highest level of value that can be guaranteed to the three people. (Received September 10, 2015)