1046-05-1842 Katherine D. Crowley (crowleyk@wlu.edu), Washington and Lee University, Department of Mathematics, Lexington, VA 24450, and Abigail Ebin and Bena M. Tshishiku* (tshishikub@wlu.edu), P.O. Box 392, Lexington, VA 24450. Minimal Triangulations of Contractible Spaces and Random Collapsing of $n$-simplices. Preliminary report.
Collapsing is a combinatorial analog of contractibility for smooth spaces. Many problems in topology and combinatorics reduce to analyzing a simplicial complex, and in particular whether the complex collapses to a point. In practice, checking for collapsibility can be computationally intensive if the order in which one collapses affects the outcome. While it is straightforward to find a way to collapse any $n$-simplex to a point, it is less obvious whether one can perform collapses in a different order and get "stuck", with no more available collapses, before arriving at a single point. Previously, Crowley and Ebin showed that if $n \geq 7$, then it is possible to collapse an $n$-simplex to the dunce hat or Bing's house with two rooms, neither of which can be collapsed further. We will answer the question for $n \leq 6$. (Received September 16, 2008)

