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**Anders Björner** and **Michelle L. Wachs\*** ([wachs@math.miami.edu](mailto:wachs@math.miami.edu)), Department of Mathematics, University of Miami, Coral Gables, FL 33124, and **Volkmar Welker**. *On sequentially Cohen-Macaulay complexes and posets.*

The notion of sequential Cohen-Macaulayness is a nonpure generalization of Cohen-Macaulayness due to Stanley. It is a property of simplicial complexes and posets that is weaker than nonpure shellability and has ring theoretic connections generalizing those of pure Cohen-Macaulayness. In this paper we study the sequential Cohen-Macaulay property and give various characterizations and versions. We show that sequential Cohen-Macaulayness is preserved under standard poset operations such as, ordinal sum, product, and rank selection. (Received August 07, 2007)