

1116-VI-2270 **Louis Deaett*** (louis.deaett@quinnipiac.edu). *Matroids and the minimum rank of matrix patterns*. Preliminary report.

The *zero-nonzero pattern* of a matrix specifies precisely which of its entries are nonzero. The problem of determining the smallest rank of a matrix subject to this combinatorial description has received a good deal of attention. We give a generalization of this problem to the setting of matroids, and show that analogs to known lower bounds persist in this setting. Moreover, we exploit the matroid-theoretic context to give simpler, unified proofs of some known results, improve upon others, and establish a new result as well. Ultimately, however, the potential of this approach seems largely untapped; we outline directions in which the connections with matroid theory could be strengthened so as to shed more light on the original matrix-theoretic problem. (Received September 22, 2015)