1032-15-39 **Donald E. Beken** (beken@uncp.edu), Dept. of Mathematics and Computer Science, Pembroke, NC 28372, and **Ralph E. DeMarr*** (demarr@unm.edu), Dept. of Mathematics and Statistics, Albuquerque, NM 87131. *Matrices with Fibonacci Numbers as Entries.* Preliminary report.

We consider square matrices of order $n \geq 2$ in which each entry is a Fibonacci number or the negative of a Fibonacci number. Each such matrix is called a Fibmatrix. Of special interest are those Fibmatrices which have inverses that are also Fibmatrices (called inverse Fibmatrices). A Fibmatrix is called solid if every entry is nonzero.

There are many examples of solid inverse Fibmatrices of order 2 and 4. We discuss other interesting relationships. One may use MATLAB to explore these relationships. (Received July 25, 2007)