

1107-39-140

Steven Miller* (sjm1@williams.edu), 18 Hoxsey St, Williamstown, MA 01267, and **Minerva Catral, Pari Ford, Pamela Harris** and **Dawn Nelson**. *From the Kentucky Sequence to Benford's Law through Zeckendorf Decompositions.*

Zeckendorf proved every positive integer can be written uniquely as a sum of non-adjacent Fibonacci numbers; not only can this be generalized to other recurrence relations, but it turns out to be an equivalent definition of Fibonacci numbers. Previous work required the recurrence to have first coefficient non-zero; in this work we explore a related one, the Kentucky sequence, where that coefficient vanishes. This leads to interesting new behavior, as we lose uniqueness of decomposition and the greedy algorithm no longer yields a decomposition for each integer. If time permits we discuss connections between generalized Zeckendorf decompositions and Benford's law. (Received January 11, 2015)