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James Oxley and **Simon Pfeil***, simon.pfeil@snc.edu, and **Charles Semple** and **Geoff Whittle**. *Matroids with many small circuits and cocircuits*.

Tutte proved that a non-empty 3-connected matroid with every element in a 3-element circuit and a 3-element cocircuit is either a whirl or the cycle matroid of a wheel. This result led to the Splitter Theorem. More recently, Miller proved that a matroid of sufficient size with every pair of elements in a 4-element circuit and a 4-element cocircuit is a tipless spike. This result simplifies the proof of Rota's conjecture for $\text{GF}(4)$. Here we investigate matroids having similar restrictions on their small circuits and cocircuits. In particular, we completely determine the 3-connected matroids with every pair of elements in a 4-element circuit and every element in a 3-element cocircuit, as well as the 4-connected matroids with every pair of elements in a 4-element circuit and every element in a 4-element cocircuit. (Received February 13, 2018)