1080-05-128 **Carolyn Chun**, **Dillon Mayhew** and **James Oxley*** (oxley@math.lsu.edu). *Towards a Splitter Theorem for Internally* 4*-connected Binary Matroids.*

Two powerful inductive tools for dealing with 3-connected matroids are Tutte's Wheels-and-Whirls Theorem and Seymour's Splitter Theorem. The first shows that it is always possible to remove one or two elements from a 3-connected matroid M to get another 3-connected matroid. The second shows that such removals can be done to maintain not only 3-connectivity but also a copy of a specified 3-connected minor of M. For several years, we have been seeking analogues of these theorems for internally 4-connected binary matroids. In 2011, we found such an analogue of Tutte's Wheels-and-Whirls Theorem. This talk will describe our ongoing work towards an analogue of the Splitter Theorem. (Received January 20, 2012)