1071-57-208 **Thomas E. Mark*** (tmark@virginia.edu), Department of Mathematics, PO Box 400137, University of Virginia, Charlottesville, VA 22902. *Symplectic surgeries from mapping class group relations.*

We interpret several families of cut-and-paste operations on 4-manifolds in terms of relations in the mapping class groups of planar surfaces: we exhibit families of relations generalizing the classical lantern relation, giving rise via monodromy substitution in Lefschetz fibrations to various rational blowdown operations. We also indicate some work in progress with D. Gay allowing a unified proof that these and potentially many other 4-dimensional operations may be performed symplectically. (Received March 06, 2011)