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Thomas E. Mark* (tmark@virginia.edu), Department of Mathematics, PO Box 400137,
University of Virginia, Charlottesville, VA 22903. *Constructions of symplectic 4-manifolds via local
Lefschetz fibrations.*

Joint work with David Gay has led to a fairly general procedure for producing 4-dimensional symplectic cut-and-paste operations, based on the idea of monodromy substitution in Lefschetz fibrations defined locally in a manifold. We describe a variety of instances of this construction, with a view toward producing new “interesting” symplectic 4-manifolds. (Received January 18, 2012)