1054-55-142   **Soren Galatius*** (`galatius@stanford.edu`), Dept. of Math, Stanford University, Stanford, CA 94305. *Monoids of moduli spaces of manifolds.*

This talk will present joint work with Oscar Randal-Willams, arXiv:0905.2855. The cobordism category C_d is a topological category whose objects are closed $(d-1)$-manifolds and whose morphisms are compact d-dimensional cobordisms. The homotopy type of the classifying space BC_d was previously determined by Galatius-Madsen-Tillmann-Weiss. The goal of this work is to find subcategories $D \subset C_d$ such that map $BD \to BC_d$, induced by the inclusion, is a homotopy equivalence. The smaller such D, the better. For $d = 2$ we prove that in most cases of interest, one can pick such a D with just one object, and furthermore D can be chosen homotopy commutative (as a topological monoid). My talk will explain this result and its applications. (Received September 11, 2009)