1039-57-121 **Scott Jeremy Baldridge*** (sbaldrid@math.lsu.edu), 224 Lockett Hall, Louisiana State University, Baton Rouge, LA 70803. *The Symplectic Poincaré Conjecture.*

The symplectic Poincaré conjecture is easy to state: Given a finitely presented group G, let M be a symplectic 4-manifold that minimizes the Euler characteristic over all closed symplectic 4-manifolds that have fundamental group isomorphic to G. If N is another symplectic 4-manifold homeomorphic to M, then N is diffeomorphic to M. Note that the symplectic Poincaré conjecture for simply connected manifolds is a question about whether or not the topological space of $\mathbf{CP}^2$ has a unique smooth structure that supports a symplectic form. In this talk we will discuss the conjecture and discuss examples and results about symplectic 4-manifolds that minimize (or nearly minimize) the Euler characteristic. (Received March 09, 2008)