## 1086-18-185 **Joel Smith\*** (joelsmith1990@mail.fresnostate.edu). The singular Temperley-Lieb category. Preliminary report.

We introduce the singular Temperley-Lieb category STL, which is a strict tensor category and an extension of the classical Temperley-Lieb category (playing an essential role in constructing quantum invariants for tangles, and in particular, for knots and links). The objects of STL are even length sequences of + and - signs representing collections of oriented marked points on a line, and the morphisms are one-dimensional cobordisms between these collections of points. Specifically, the morphisms are oriented bivalent graphs with boundary such that bivalent vertices are either sources or sinks, and such that the orientation of edges agrees with the orientation of the end points.

We describe the collection of morphisms in **STL** via generators and relations, and to each morphism we associate a bimodule over a commutative ring by means of a certain two-dimensional Topological Quantum Field Theory.

This work is partially supported by the Undergraduate Research Grant program at California State University, Fresno under the supervision of Professor Carmen Caprau. (Received August 04, 2012)