1125-81-1689   **James E Tener*** (`jtener@math.ucsb.edu`). *On classification of vertex operator algebras by their representation categories.* Preliminary report.

In this talk, I will present work in progress with Meng Cheng and Zhenghan Wang on the subject of classification of vertex operator algebras whose representation theory is given by a fixed modular tensor category. Perhaps the best studied problem in this area is the classification of "holomorphic" vertex operator algebras, i.e. those VOAs whose representation theory is simply Vec, with small central charge. However in this talk we will focus on a complementary problem, that of classifying, modulo holomorphic VOAs, those VOAs whose representation theory is given by a fixed non-trivial modular tensor category. Using techniques of Terry Gannon, we will explore the landscape of this classification problem for some small modular tensor categories. (Received September 18, 2016)