1003-14-1061 **Ravi Vakil*** (`vakil@math.stanford.edu`), Department of Mathematics, Stanford University, Stanford, CA 94305, and **Ian Goulden** and **David Jackson**. *The Virasoro conjecture, double Hurwitz numbers, and the topology of the moduli space of curves.* Preliminary report.

In the 1990's, Faber gave a remarkable series of conjectures about the topology of the moduli space of (smooth) curves, based on a conjecture of Witten later proved by Kontsevich. Faber's "intersection number" conjecture gives a beautiful combinatorial formula for "top intersections" of codimension 1 classes on this space. This conjecture was shown by Getzler and Pandharipande to follow from the Virasoro conjecture in string theory. I'll give an overview of a project to prove Faber's intersection number conjecture by the asymptotic analysis of "double Hurwitz numbers". This project has been completed in important cases. (Received October 03, 2004)