

1056-57-1913 **David Futer*** (dfuter@temple.edu), Mathematics Department, Temple University, Philadelphia, PA 19122, and **Efstratia Kalfagianni** and **Jessica S Purcell**. *Adequate knots, guts, and volumes II: volume and Jones polynomial.*

In these talks (parts I and II) we describe recent progress on a project to relate the Jones polynomial of a knot to geometric invariants of the knot complement. More specifically, we explore relations between the Jones polynomial, the hyperbolic volume of the knot complement, and the topology of certain surfaces spanned by the knot (state surfaces). In part II, we describe how the combinatorial structure of the polyhedral decomposition from part I relates coefficients of the Jones polynomial to the *guts* of the incompressible surface. It follows, by work of Agol, Storm, and Thurston, that coefficients of the Jones polynomial provide a lower bound for the volume of the knot. (Received September 22, 2009)