The combinatorics of planar triangulations and quantum topology.

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007 Kemeny Hall, 3:30PM
Tea 3:00 PM 300 Kemeny Hall

Abstract

I will discuss how quantum topology gives rise to a conceptual framework for studying combinatorial properties of planar triangulations. (No prior knowledge of quantum topology will be assumed.) In the 1960s W.T. Tutte observed that the value of the chromatic polynomial of planar triangulations at $(\text{golden ratio} + 1)$ obeys a number of remarkable properties. I will present several extensions of Tutte’s results and applications to the structure of the chromatic and flow polynomials of graphs, and of the Yamada polynomial of graphs in 3-space. This talk is based on joint works with Ian Agol and with Paul Fendley.

This talk should be accessible to graduate students.