Conformal embedding and percolation on the uniform triangulation

Abstract:
Following Smirnov's proof of Cardy's formula and Schramm's discovery of SLE, a thorough understanding of the scaling limit of critical percolation on the regular triangular lattice has been achieved. Smirnov's proof in fact gives a discrete approximation of the conformal embedding which we call the Cardy embedding. In this talk I will present a joint project with Nina Holden where we show that the uniform triangulation under the Cardy embedding converges to the Brownian disk under the conformal embedding. Moreover, we prove a quenched scaling limit result for critical percolation on uniform triangulations. Time permitting, I will also explain how this result fits in the larger picture of random planar maps and Liouville quantum gravity.