

**Stanford University**  
**Departments of Mathematics and Statistics**

PROBABILITY SEMINAR

4pm, Monday, January 7, 2019  
Sequoia Hall Room 200

Refreshments served at 3:30pm in the Lounge.

**Speaker:** Lenya Ryzhik, *Stanford Mathematics*

**Title:** **The stochastic heat equation and KPZ  
in dimensions three and higher**

**Abstract:**

I will give a pedestrian introduction to the behavior of the solutions to the heat equation with a space-time stationary random potential in  $d \geq 3$ . In these “high” dimensions, when the potential is sufficiently weak, this equation admits a space-time stationary solution that serves as an analog of the principal eigenfunction. As a consequence, one obtains an effective diffusion equation, and an Edwards–Wilkinson limit for fluctuations. Similar results hold for the KPZ equation in  $d \geq 3$ .

This is joint work with A. Dunlap, Y. Gu, and O. Zeitouni.