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Le Chen* (le.chen@unlv.edu), Department of Mathematical Sciences, University of Nevada, Las Vegas, Box 454020, Las Vegas, NV 89119-4020, and **Jingyu Huang**. *Regularity and strict positivity of densities for the stochastic heat equation on R^d* .

In this talk, I will present a recent joint work with Jingyu Huang on the stochastic heat equation with a general multiplicative Gaussian noise that is white in time and colored in space. Both regularity and strict positivity of the densities of the solution have been established. The difficulty, and hence the contribution, of the paper lie in three aspects, which include rough initial conditions, degenerate diffusion coefficient, and weakest possible assumptions on the correlation function of the noise. In particular, our results cover the parabolic Anderson model starting from a Dirac delta initial measure. (Received July 08, 2019)