**Stanford University**
Departments of Mathematics and Statistics

**PROBABILITY SEMINAR**

4:30pm, Monday, May 16, 2016
Sequoia Hall Room 200
Cookies served at 4pm, 1st floor Lounge.

**Speaker:** Lenya Ryzhik  
*Department of Mathematics, Stanford University*

**Title:** Cane toads and the Bramson shift

**Abstract:**

The cane toads are a highly invasive species that spread throughout Australia at an ever increasing rate, in the spirit of Grimm brothers fairly tales. This is quite different from the standard Fisher-KPP and branching Brownian motion models that lead to linear-in-time spreading. I will describe some front propagation models that give rise to such front acceleration. The results are purely analytic in nature but, as a defense of presenting them at a probability seminar, parallel those obtained by probabilistic methods. I will also try to squeeze in some closely related results on the classical BBM front position, confirming a Brunet–Derrida prediction of correction to the Bramson logarithmic shift in the KPP equation.