

# Recombination, genetic interactions and the rate of adaptation in large populations

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**T**HE The evolutionary advantage of sex and recombination has been a subject of extensive inquiry and discussion, yet still remains an open question. This may be due in part to the difficulty in quantifying the effect that out-breeding and recombination have on the dynamics of natural selection and the propagation of alleles and genotypes. This talk discusses some recent progress on the latter front. Specifically, it examines the effect of recombination in three closely related contexts: 1) Acceleration of the rate of adaptation in large populations, 2) Selection of alleles versus selection of genotypes in the presence of genetic interactions, 3) The hitch-hiking effect and "quasi-neutrality" in genetically diverse adapting populations. *This work was done in collaboration with Richard Neher (KITP) and Daniel Fisher (Stanford).*