Abstract Submitted
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Predicting evolutionary dynamics GABOR BALAZSI, Laufer Center for Physical and Quantitative Biology, Stony Brook University — We developed an ordinary differential equation-based model to predict the evolutionary dynamics of yeast cells carrying a synthetic gene circuit. The predicted aspects included the speed at which the ancestral genotype disappears from the population; as well as the types of mutant alleles that establish in each environmental condition. We validated these predictions by experimental evolution. The agreement between our predictions and experimental findings suggests that cellular and population fitness landscapes can be useful to predict short-term evolution.

Gabor Balazsi
Laufer Center for Physical and Quantitative Biology, Stony Brook University

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