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Abstract for an Invited Paper
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Experimental evolution in budding yeast

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I will discuss our progress in analyzing evolution in the budding yeast, *Saccharomyces cerevisiae*. We take two basic approaches. The first is to try and examine quantitative aspects of evolution, for example by determining how the rate of evolution depends on the mutation rate and the population size or asking whether the rate of mutation is uniform throughout the genome. The second is to try to evolve qualitatively novel, cell biologically interesting phenotypes and track the mutations that are responsible for the phenotype. Our efforts include trying to alter cell morphology, evolve multicellularity, and produce a biological oscillator.