

#

Judging Dept.

**Jenni Risler**

Student

**BMS****2****M. Joan Curcio**

Dept or Program Years in program

Mentor

**Identification of candidate activators of Ty1 retrotransposition**

Author (s)

**Jenni Risler, M. Joan Curcio**

Ty1 is a retrovirus-like retrotransposon in the genome of the budding yeast, *S. cerevisiae*. Several genomic screens to identify regulators of Ty retrotransposition have been performed within the past six years resulting in the identification of hundreds of candidate genes. Despite these efforts, very few host factors that activate transposition have been validated using chromosomal elements under control of their native promoter. We have developed a genome-wide screen based upon the Synthetic Genetic Array platform specifically designed to identify activators of a marked chromosomal Ty1 retrotransposon. A primary screen run in duplicate has identified a subset of 300/4785 candidate Ty1 activators with statistically significant enrichment (Gene Ontology  $P < .05$ ) for genes encoding proteins that possess catalytic activity, respond to stress, are involved in cellular transport, or are structural constituents of the ribosome. Ongoing work involves development of a novel query strain that will be used to perform a second genome-wide screen for comparative analysis. Since retrotransposons and retroviruses can be regulated by the same mechanism, human homologs of validated activators are potential targets for antiretroviral drug development.