DNA replication in yeast is stochastic[1] SCOTT CHENG-HSIN
YANG, Simon Fraser University, NICHOLAS RHIND, University of Massachusetts
Medical School, JOHN BECHHOEFER, Simon Fraser University — Largely on the
basis of a simple — perhaps too simple — analysis of microarray-chip experiments,
people have concluded that DNA replication in budding yeast (*S. cerevisiae*) is a
nearly deterministic process, in which the position and activation time of each ori-
gin of replication is pre-determined. In this talk, we introduce a more quantitative
approach to the analysis of microarray data. Applying our new methods to budding
yeast, we show that the microarray data imply a picture of replication where the
timing of origin activation is highly stochastic. We then propose a physical model
(the "multiple-initiator model") to account for the observed probability distributions
of origin- activation timing.

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