## DNA replication model provides new tool for molecular geneticists

Human cells make new copies of their DNA billions of times each day, a crucial process upon which life itself depends. However, scientists do not fully understand how cells unzip the double-stranded DNA molecule before replicating both halves of it. New work at Rockefeller may help change that.

For the first time, researchers in Michael O'Donnell's Laboratory of DNA Replication have built a model that can enable scientists to study what happens at the "replication fork" — the point where the DNA molecule is split down the middle in order to create an exact copy of each side.

"As a research tool, our model could help scientists better address basic biological questions about cell division, as well as the nature of errors that cause diseases, such as cancer," O'Donnell says. "There are plenty of hypotheses about the mechanics of DNA replication, but until now the process could not be studied using a defined system with pure proteins."

According to O'Donnell, the team's technique may allow researchers to reconstruct biochemical events that were, until now, difficult or impossible to study in detail. For example, scientists know some inheritable information, known as epigenetic information, is not encoded in the DNA, but instead lies in modifications to proteins associated with the DNA. Yet exactly how this information is passed on remains a mystery.

## Read the full, original story: Researchers create the first model of the DNA 'replication fork'