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Ryan Zurakowski* (ryanz@udel.edu), 140 Evans Hall, Newark, DE 19716, and **Rutao Luo**
and **Michael J Piovoso**. *Modeling HIV DNA artifact formation in integrase inhibitor therapy.*

Combination antiretroviral therapy (cART) is able to suppress HIV replication below the standard limit of detection in a majority of HIV-infected patients. Ultrasensitive assays, however, are able to detect virus in almost every patient, at levels between 1 and 50 virions per ml. It is not currently known whether these viruses are from continuing replication or from reservoir cell activation. Integrase inhibitor therapy results in the formation of stable DNA artifacts when continuing replication events are interrupted. We present an ordinary differential equation model of the formation of these artifacts, and discuss how this model can be used to interpret the results of an experiment in which these artifacts were measured following the addition of integrase inhibitors to a group of HIV infected patients. (Received January 25, 2012)