1014-92-837   **James F Selgrade*** (`selgrade@math.ncsu.edu`), Department of Mathematics, Box 8205, North Carolina State University, Raleigh, NC 27695-8205, and **James H Roberds**, USDA Forest Service, Southern Institute of Forest Genetics, Saucier, MS 39574. *Genetic variations due to periodic immigration for a discrete, selection model.* Preliminary report.

The migration of a controlled population, where the genetic composition has been engineered in a specific manner, into a natural population is studied using a one island selection-migration model. Comparisons are made between the effects of constant and periodic immigration on the allele frequency in the cases of complete dominance and no dominance. It is shown that periodic immigration of sufficient amplitude will maintain allele frequency at a higher value than constant immigration equal to the average of the periodic immigration. This model may be useful for investigating how a transgene propogates in a natural population. (Received September 25, 2005)