1145-49-2283 **Reecha Upadhyay***, rupadhya@svsu.edu, and **Arundhati Bagchi Misra**, abmisra@svsu.edu.
Optimization of Student Loans using Euler-Lagrange Equation. Preliminary report.

The researchers work on the application of Euler-Lagrange equation on dynamic optimization problems and mainly replicate The Career Decisions of Young Men and The Effect of Parental Transfers and Borrowing Constraints on Educational Attainment published by Keane and Wolpin in 1997 and 2001 respectively. In the papers, Keane and Wolpin solved the optimization problems of student loans using the Bellman principle of optimization and, the researchers plan to do so by applying Euler-Lagrange equation using MATLAB. The Bellman Principle of Optimality by Ioanid Rosu links Euler-Lagrange principle to the Bellman principle and the researcher's work is informed by Rosu's paper. While Wolpin's papers comprised of numerous parameters, the researchers seek to obtain the same solutions with fewer parameters initially. The researchers follow the solution method described in the paper The Solution and Estimation of Discrete Choice Dynamic Programming Models by Simulation and Interpolation: Monte Carlo Evidence by Keane Wolpin in 1994. (Received September 25, 2018)