1096-35-1165 **Kalea A Sebesta*** (k_sebesta@yahoo.com), 200 Talus Way, Apt 212, Reno, NV 89503.
Nucleation in a Two Component Metal Alloy and the Corresponding Boundary Conditions. Preliminary report.

This is a numerical study that explores the phase separation phenomenon, known as nucleation, specifically in a two component metal alloy. The aim of this study is to understand the change in the number of components both as a function of time and a function of parameters. In order to accomplish this, numerical topology code to find the number of components was developed and analysis was used to develop some heuristic arguments. For the purpose of this research, a stochastic equation was used implying, that there are necessarily large deviations in behavior in an individual run. Therefore, it was necessary to perform and average a large number of simulations to see the full scope of the behavior. These arguments paved way for predictions of the expected behavior both in time and in parameter variation. Furthermore, the stochastic behavior is what gave rise to the predictions for how the behavior should change in time. The results are based on the theory of large deviations which say that the time to nucleation should depend on the largest eigenvalue. (Received September 13, 2013)