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**Diandra M Ryan-Mas\*** (dmr0602@wesminstercollege.edu), 1340 s 2200 East, Salt Lake City, UT 84108. *The Implementation of Novel Kernel Functions*. Preliminary report.

The use of support vector machines (SVMs) in binary classification has thus far been limited by the kernel functions upon which these machines rely. This research sought to numerically solve boundary value differential equations in order to implement novel kernel functions, allowing for a wider and more effective use of these SVMs. Techniques for generating and solving novel kernel functions, as well as their ability to classify data sets, will be discussed. (Received September 10, 2013)