1145-90-1816 **Francis J Vasko***, 230A Lytle Hall, Kutztown, PA 19530, and **Yun Lu**. *Binarizations of Continuous Metaheuristics to Solve the Set Covering Problem: Simpler is Better.* Preliminary report.

Recently, a number of metaheuristics originally designed for solving continuous nonlinear optimization problems have been adapted to solve the Set Covering Problem (SCP) which is a well-known discrete optimization problem. Many of these metaheuristics are bio-inspired and include Bee Colony, Black-Hole, Cat Swarm Optimization, Cuckoo Search, Electromagnetism-Like, Firefly Optimization, and Teaching-Learning Based Optimization (TLBO) algorithms. In this talk we will review how these metaheuristics are adapted or "binarized" to solve the SCP. Also, we will discuss how another metaheuristic, JAYA, introduced in 2016 for solving continuous nonlinear optimization problems can be easily adapted to solve the SCP. The performance of all these metaheuristics on the SCP will be evaluated based on how well they solve 65 SCPs from Beasley's OR library. The empirical results demonstrate that the simple, straightforward binarization approach used by Lu and Vasko on the TLBO metaheuristic gives the best results. (Received September 24, 2018)