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**Patrick Mackey, Kathleen Nowak\*** ([kathleen.nowak@pnnl.gov](mailto:kathleen.nowak@pnnl.gov)), **Jennifer Webster** and **Stephen J. Young**. *A New Influence-Based Genetic Algorithm for Community Detection*.

We introduce a new influence-based genetic algorithm for maximizing modularity. It uses Dijkstra's algorithm to improve the quality of the candidate partitions in the genetic pool. We compare our new genetic algorithm against six different algorithms, three state of the art advanced algorithms which use a genetic algorithm primer and three widely used deterministic algorithms. Our results suggest that advanced non-deterministic algorithms should benefit from using our new genetic algorithm as their base. (Received September 26, 2017)