Biological Networking and Optimization of the US Interstate System

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The purpose of this investigation is to utilize slime mold's cellular intelligence in the optimization of the United States Interstate road network. Specifically, Physarum polycephalum will be allowed to grow, forage, and create a biological network based on a realistic depiction of the contiguous United States. This biological network may mimic the real infrastructure or suggest new routes. This research can be used as a basis for new routes or projects that would improve the current Interstate system. The initial challenge of this project lies in the development of a model that fits the constraints of the research while simultaneously meeting the physiological needs of the slime mold. Four models were designed and tested to meet this engineering goal.

Awards Won: