



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Amanda F. Cohn	Project Number 31765
Project Title At What Distance Will an Amoeboid Choose to Ignore a Healthy Food Option over a Close Food Option, When Starved?	
Abstract Objectives/Goals The objective of my project is to deduce whether an Amoeboid organism will consume the healthiest food option for itself, and potentially starve, or choose to consume the closest food option, even if it's health benefits are much less. Methods/Materials Balsa wood and hot glue were used to create eight different maze structures with columns measuring different lengths. Oats were placed on the right side of the maze while sugar was placed at the left. Physarum Polycephalum were cultured in Petri dishes with non-nutriented agar, and then placed at the start of the maze. An agar-water solution was poured into the maze before the organisms were placed. They were then allowed to grow. Results The Physarum Polycephalum consistently grew to the healthiest food option, or the oats, when the oats were placed three and six inches away from the starting point. At nine and twelve inches, the organism grew once to the oats, or healthy food, and once to the sugar, the unhealthy food. Conclusions/Discussion In conclusion, the Physarum Polycephalum did grow to the healthy food option, or the oats, more often than it did to the unhealthy option, the sugar. My hypothesis was partly supported because it consistently grew to the oats when they were placed three and six inches away. This had been my first hypothesis. My next hypothesis had been that if the organism attempted to reach the healthy option at twelve inches, it would die, but it actually survived when it reached the healthy food at twelve inches.	
Summary Statement My project is the study of Amoeboid organisms' behavior when placed in a situation where two of their survival instincts may contradict each other.	
Help Received My father assisted me with the construction of the mazes.	