California Science Center

CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)
Christine M. Bui

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)
Mice, Mazes, and Memory

Science Fair Use Only

J0204

Division
X **Junior (6-8)** _ **Senior (9-12)**

Preferred Category (See page 5 for descriptions.)
2 - Behavioral Sciences

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)
Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

Objective: The objective is to determine if different diets positively or negatively affect a mouse#s memory of running a maze.

Materials and Methods: Three mice were fed with different diets: fats, proteins, and carbohydrates. The fat diet consisted of peanut butter and sunflower seeds; the protein diet of dog biscuits and alfalfa blocks; the carbohydrate diet of wheat crackers and bread. The mice were tested each night for six nights on one diet. They were timed to see how fast they could finish a maze. The maze configuration was changed for each diet so that the mice would not build on their previous learning.

Results: Carbohydrates most significantly and positively affected the memory, followed by protein and fat, respectively.

Conclusion: The hypothesis was supported by the experiment conducted. Carbohydrates promote the entry of neurotransmitters into the brain; the more neurotransmitters there are, the easier it is to memorize maze patterns. Protein has been shown to be linked to memory in many past experiments. There was no strong reason why fat slightly affect memory positively.

Summary Statement (In one sentence, state what your project is about.)
This project investigates the effect of different diets on a mouse's memory .

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.
Mother drove to library; Father cut wood for maze; Parents proof-read report; Brother held mice while taking pictures.