



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

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

Garrett S. McGuire

Science Fair Use Only

J0923

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

Eh...? What Did You Say?

Division

Junior (6-8) **Senior (9-12)**

Preferred Category (See page 5 for descriptions.)

8 - Environmental Engineering

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.

My problem was, what kinds of sound barriers reduce freeway traffic noise the best for people who live or work close to freeways? My hypothesis was, that tall sound barriers that were made of bricks, covered with vines, and that border sunken freeways would reduce freeway traffic noise the most. To test my hypothesis, I went to different freeway locations with different sound barriers and took five sound readings at each location. I averaged the readings for each location to see which sound barrier worked the best. I found that the location with a building buffer zone reduced sound the best. The second best was a freeway on a hill with lots of vegetation and the houses were in the shadow zone. The third best was a field buffer zone. My conclusions were that buffer zones and walls reduced freeway noise but we need to pass laws, manufacture quieter cars, and experiment with better and less expensive sound barriers.

Summary Statement (In one sentence, state what your project is about.)

My project is the study of the effects of different sound barriers on freeway traffic noise.

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.

My dad took me to the locations and helped type. My mom and my sister helped me with the backboard. Mr. Sarraf and Mr. Matevosian of Caltrans and Mr. Feith, past Director of the EPA Noise Standards and Regulations Office, let me interview them.