Project Proposal

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# Overview of Proposed Project

The project I am planning will examine bacteria on the surfaces of public transportation within the Bay Area. I will specifically obtain 3 samples from the floor of different SF muni buses and Bart cars.

Studies have shown that there are a plethora of both air-borne fungi and bacteria contaminating the seats, hand-touch surfaces, and floors of public transportation. (Otter and French, 2009) (Lee and Jo, 2005)

## Question(s)

How much did the bacteria concentration and diversity vary between the Muni and Bart and why?

What kinds of bacteria contaminated these environments and how did they vary?

What types of factors may have an effect on the differences in bacteria in the two environments.

## Hypothesis/ses

The diversity will be larger in the Muni due to the lack of maintainance and high volumes of passengers.

Both the environments will be contaminated with staphylococci and other pathogens.

## Study Design

Samples will be obtained by taking 3 different swabs of the floor of each enviroment. For the Muni, the individual swab samples will be taken from different buses. The samples for the Bart will be taken from different cars of the same train. All samples will be taken from the entrance of the door. Samples will be taken during class on Tuesday, September 3rd. The Bart samples will be taken from the Civic Center Bart Station and the Muni samples will be obtained from the 5 or 5R to Ocean Beach at bus stop on Fulton St. This process will take approximately 1 hour.

### Materials

* 6 sterile swabs
* 6 individual tubes
* sterile gloves

Lee,J.-H. and Jo,W.-K. (2005) Exposure to airborne fungi and bacteria while commuting in passenger cars and public buses. *Atmospheric environment*, **39**, 7342–7350.

Otter,J. and French,G. (2009) Bacterial contamination on touch surfaces in the public transport system and in public areas of a hospital in london. *Letters in applied microbiology*, **49**, 803–805.