

Supplementary Material

The first three figures correspond to those in the main text, but are for San Diego County ($n = 638$) rather than San Diego School District ($n = 200$). Figures S3b and S4 differ only in the vaccination of children with personal-belief exemptions, which contribute substantially to the realized reproduction number in southwestern San Diego County.

Figure S1. Spatial distribution of average *per capita* contact rates of elementary schoolchildren in San Diego County.

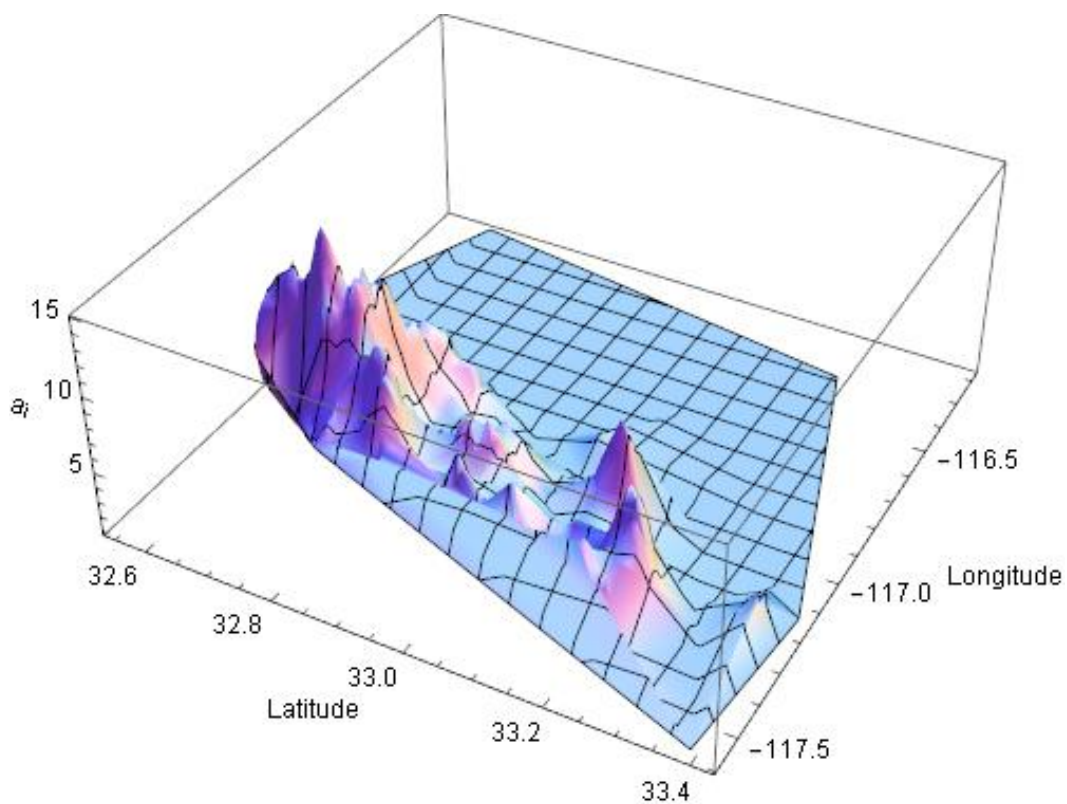
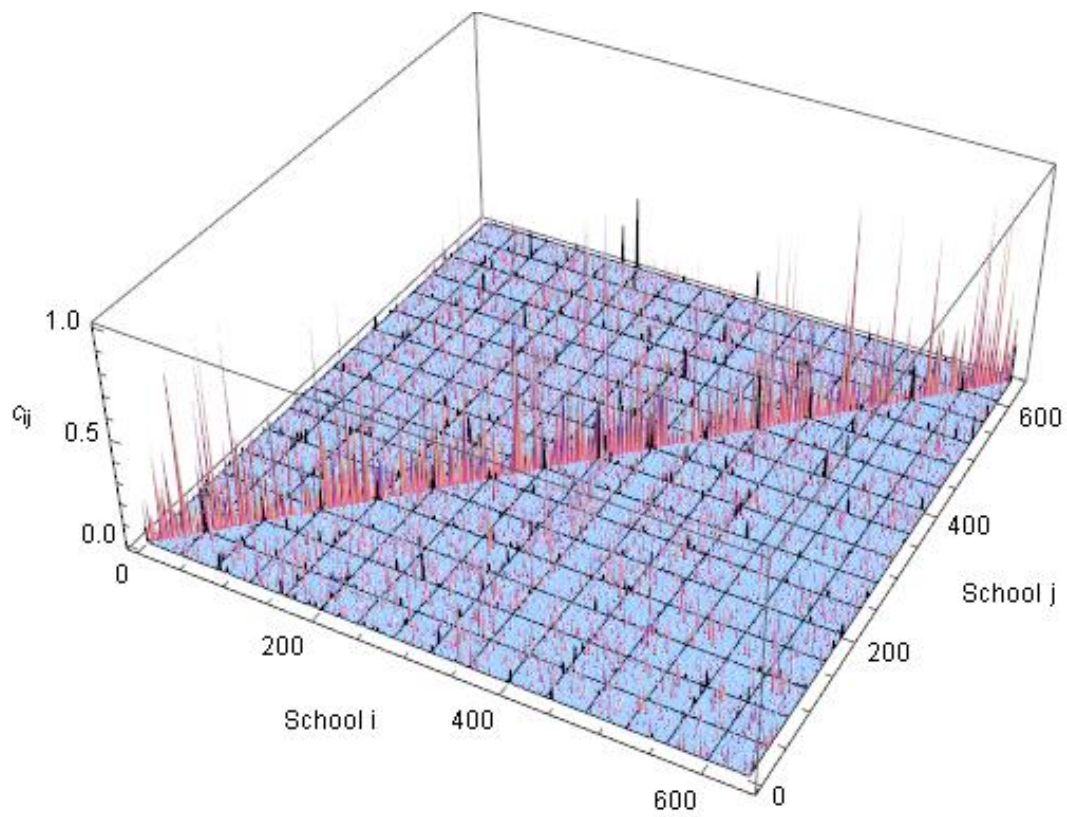


Figure S2. Proportions of the contacts that children in San Diego County have with children in their own and other schools or neighborhoods.



Figures S3. Spatial distributions of school or neighborhood contributions to the basic (above) and realized (below) reproduction numbers in San Diego County, California.

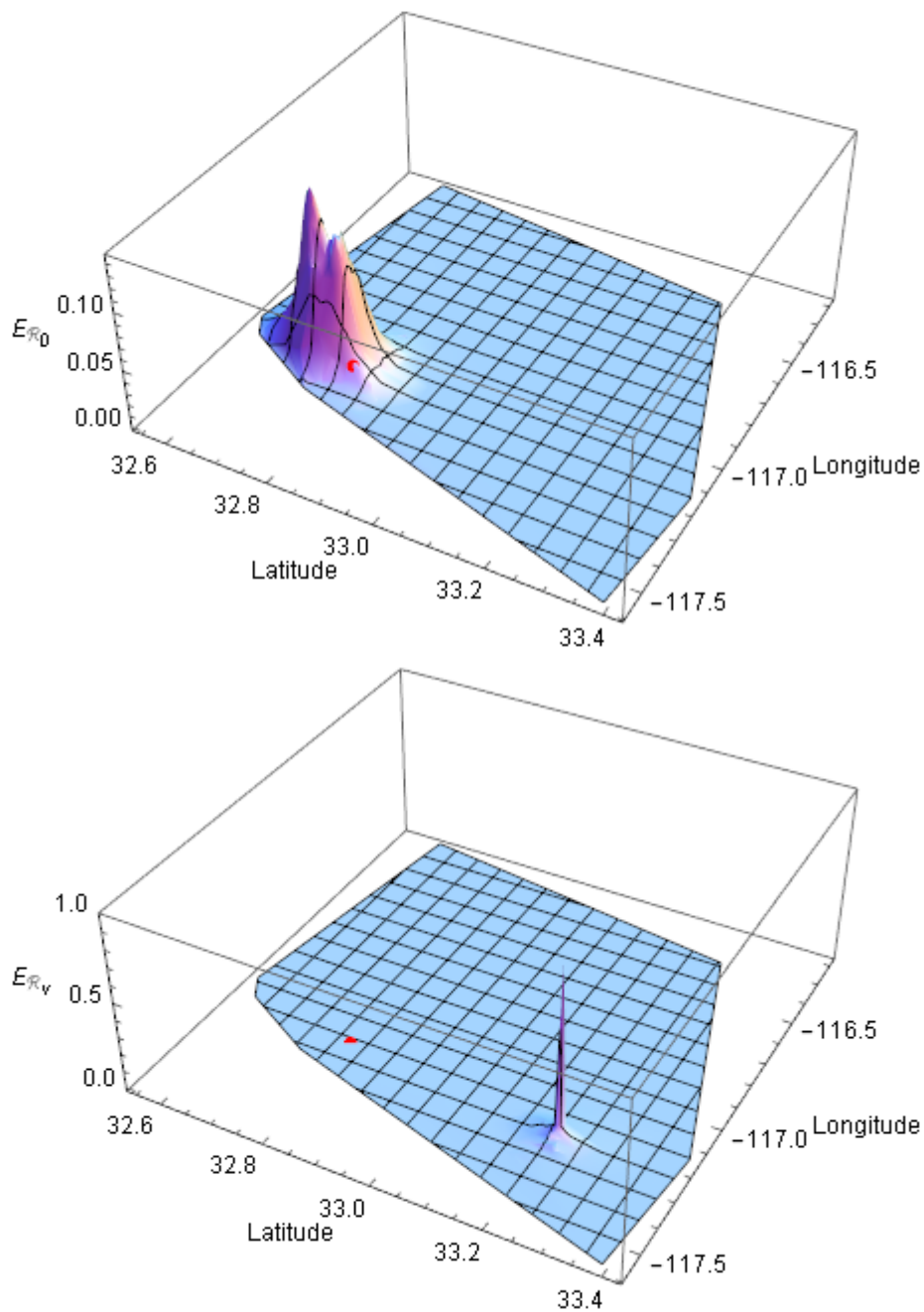


Figure S4. Spatial distribution of contributions to the realized reproduction number after children with personal-belief exemptions were vaccinated. Evidently the peak apparent in figure S3b is due to personal-belief exemptions. The peaks in this figure are due to any of the myriad other causes of imperfect uptake in influential schools.

