Future works:

Same population data (2010 population data) were coupled with pollen data in different years in the present study. It was not accurate since the population composition (age and gender) in each climate region of contiguous US changes through years. We will use population data of the corresponding year to couple with the pollen data in the future work.

Exposure factors such as inhalation rates and time spent indoor may not only vary among different age groups and gender, but also among different climate region (spatial variation).In the future study, we may use these data retrieved from different locations(namely south and north) to estimate the spatial distribution of these data. Thus we could generate a more accurate model to estimate the human activity in different regions of contagious US.

Wind speed and precipitation might sometimes have significantly effect on pollen intakes. High wind speed would cause the dispersal of airborne pollen becomes large. While precipitation would decrease the dispersal speed of pollen and





The heat map shows the trend of the mean daily concentrations of pollen of five species in nine climate regions of CONUS. The values shown in heat map are the standardized logarithmic values. Larger values are redder, indicating great increasing of daily concentrations in the second year period (2003-2010). Smaller values are greener, indicating great decreasing of daily concentrations in the second year period (2003-2010).Blue box shows that the there is no data in that region for that species in period 1994-2000.

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The heat map shows the trend of the mean daily inhalation intakes of “virtual individuals” of the population of pollen of five species in nine climate regions of CONUS. The values shown in heat map are the standardized logarithmic values. Larger values are redder, indicating great increasing of daily concentrations in the second year period (2003-2010). Smaller values are greener, indicating great decreasing of daily concentrations in the second year period (2003-2010).Blue box shows that the there is no data in that region for that species in period 1994-2000.