Program Flow for generating virus annotated tree

1. Edit parameter file params\_std\_reinfect\_larg.dat in dat/ folder (N=3x10^6)
2. Run Main\_binding\_fromeq.m
   1. Generate SIR, Traits, and Viruses.

Viruses: dat\_x\_trans\_tmp.m

SIR: DataTLSIR.mat

Traits: virus\_traits.mat

1. Copy dat\_x\_trans.tmp.mat and virus\_traits.mat to make\_infection\_tree/ folder
2. Convert the data into xx\_indiv\_infectionTree.mat.

births, deaths, parent, infectionK, binding

1. Generate virus transmission tree (n = 300)
   1. Make\_Infection\_Tree (main\_simulate\_genealogy\_indiv\_binding.m)

Input: {'births', 'deaths', 'parent'}

Output: outfile\_treeData (indiv\_genealogy\_300.tree)

Output:

indiv\_treeData

indiv\_genealogy

1. BuildTree\_indiv\_nexus.m

Create a new file BuildTree\_indiv\_nexus.m

The tree will be produced in nexus file format, which can be read by figtree.