Steps for running 1D model:

1. Generate a segmentation in in 3D Slicer
2. Use the “Vascular Modeling ToolKit” python add on to generate a network of centerlines
   1. Use the “detect endpoints” option
   2. Ensure the end points are properly determined and that centerlines run throughout ALL the vessels
3. Export the “Centerlines” file to a .vtk file
4. Open the centerlines file in Paraview. Select “save data” and save the file as a .csv file with 13 points of precision
5. Once the file is saved, go to the MATLAB folder
6. In the command window, type “Network\_Extraction(“XXX.csv”);” but replace XXX with your file name. Run the code
7. You should have two new files with the extension “XXX\_Data.mat” and “XXX\_Nodes.mat”.
8. Go to “create\_data\_fluids2.m” and change the input file at the beginning of the script to match your data file name.
9. Open the “Driver.m” file; set the number of generations to get the network size you want.
10. Run Driver.m