Instructions:

1. Download Mucus_Code.R and common_core8.csv from Codes_and_data folder.

2. Download all the packages listed in Rstudio_package_list from Codes_and_data folder.

3. Run Mucus_Code.R in the same directory as common_core8.csv (This code was found to have issues with some computers running Windows OS specifically with points not popping up on the plots).

4. Locate "Figure_3_Size.pdf" .

5. Locate 'TSmallmucuslm' and 'AsmalldiaT1'. These variables contain linear regression information.

6. In the "Figure_4_Size" folder, locate "Figure_4_Size_V3.svg". Add linear regression values to "Figure_3_Size.pdf" in inkscape. Add prediction/experiment and normal brownian diffusion labels in inkscape. Add number of data points in inkscape.

7. From the folder locate "Figure_4_Size", locate "Figure_4_Size_a_data.csv". This is a data file that makes up panel **a** of "Figure_4_Size.pdf". First row is the header. Column names "Diffusion constant" is effective diffusion at 1 second, "Diameter" is particle diameter and "Particle_type" is particle type. Remark that Antibody refers to Antibodies and proteins.

8. From the folder locate "Figure_4_Size", locate "Figure_4_Size_b_data.csv". This is a data file that makes up panel **b** of "Figure_4_Size.pdf". First row is the header. Column "alpha" is the anomalous exponent and column "Data_type" is the classification of predicted or experiment data.

Output(s):

"Figure_3_Size.pdf" is a pdf that plots effective diffusion versus diameter, and anomalous exponent versus diameter.