MAIN DATA SETS TO USE

PPI\_2022\_04042022.csv <PPI>

immunity\_genes\_all.tsv <immune db>

<GDA>

<dis LCCs>

<dis Sab and Jacc>

0\_All\_Immune\_Gene\_Curation.Rmd

Collects genes associated with the immune system from GO, KEGG, InnateDB, ReactomeDB

OUTPUT: immunity\_genes\_all.tsv

0.0.1\_newData2\_adds\_Autoimmune\_dis\_to\_GDA.Rmd

Most updated grouping of autoimmune diseases and their MeSH groupings by synonym, uses the most updated GDA data, as well

OUTPUT: <filenames>

0.2\_newData2\_Immune\_DB\_Examination.Rmd

Info for table of immune system genes and pathways

Database overlap plots

OUTPUT: Database\_Venn\_Imm\_Components.pdf

Immune\_DB\_ComplexUpset.pdf

Database\_Jacc\_Sep.pdf

Database\_Jacc\_Imm\_Components.pdf

2.0\_newData2\_Autoimmune\_Disease\_Analysis.Rmd

Calculates simple GDA statistics

Number of genes associated with each disease

Number of diseases associated with each gene

Autoimmune disease network (how diseases are connected by genes)

Multiple Autoimmune Disease (MAS)

Plots a grouped bar graph exhibiting the number of disease-associated genes per disease and quantities in innate and adaptive immune components

OUTPUT: <filenames>

2.0.1\_newData2\_Autoimmune\_Disease\_LCCs.Rmd

Calculates disease LCCs, Sabs, and Jaccard similarity between diseases and stores it in a file

OUTPUT: <filenames>

2.0.1.2\_newData2\_LCC\_Jacc\_Sab\_analysis.Rmd

Plots of disease LCCs and rLCCs

Jaccard similarity graph

Sab graph

2.0.3\_newData2\_Disease\_Tissue\_LCCs.Rmd

Calculates disease tissue modules using log normalized DE genes from GTEx

Plot disease-tissue LCC results in a correlogram-like fashion

2.0.3.3\_newData2\_Disease\_Tissue\_LCCs\_HPA.Rmd

Calculates disease tissue modules using pTPM units from HPA

Plot disease-tissue LCC results in a correlogram-like fashion

2.0.4\_newData2\_LCCs\_nonImmune.Rmd

Calculates and plots non-immune system autoimmune disease modules

Calculates and plots immune system disease modules

2.3\_newData2\_Disease\_Immune\_cell\_LCC.Rmd

Figure 1: Fig1.pdf = Fig1A.pdf + Database\_Jacc\_Sep.pdf + Database\_Jacc\_Imm\_Components.pdf

Figure 2:

Figure 3:

Figure 4: Fig4.ppt = Immune\_vs\_Full\_LCC.pdf + Fig4B.pdf

Figure 5: