Fig. 1: One neuron vs. N confounds, homogeneous firing

1. Behavior of FDR, Fv, and Rtot in single neuron case, tau out equals tau
   1. FDR vs. Fv and Rtot or Fv vs. Rtot and FDR or Rtot vs. Fv and FDR? Which makes the most sense to think of and show as the dependent variable?
   2. Bounds for Rtot, Fv, and maybe FDR?
2. Derivation of Kleinfeld equation for this case
3. Proof that equation well describes the simulated data for one neuron
4. Behavior of FDR, Fv, and Rtot in infinite neruons case
5. Derivation of Economo equation
6. Proof that equation well describes simulated data for infinite neurons
7. Proof that a situation with any number of neurons produces an FDR, Fv etc. that falls between these two extremes
8. Same graph 4 times? Most concise way to show this information?

Fig. 2: Inhomogeneous firing

1. Showing relationship between firing rate correlation and changes in observed ISI violation fraction for the same FDR
2. Illustration with two extreme examples
3. Derivation of inhomogeneous equation
4. Proof that equation well describes all possible PSTHs
5. Why we do pairwise comparisons to build probability distribution
6. Robustness to initial spike sorting quality

Fig. 3: Final method and application to real data

1. Combining probability distributions for unknown correlation and neuron count
2. Real estimates of data from across model organisms, brain regions, unit count, and spike sorting methods (probably a table)

Supp 1: Higher order effects (supplementary?)

1. Derivation of double counting and violation window overlap
2. Quantification of their effects

Supp 2: Data required to get an accurate estimate

1. Relationship between number of spikes recorded and accuracy of estimate