

MATH 189Z Final Project Proposal

Research Question:

How many people in the US really had COVID-19 right before widespread social distancing measures were implemented?

Outline of Methods:

We will use confirmed case data to get parameters for coupled differential equation models (specifically the SEIR model) for disease transmission. Then, we use this model to find out how many people really had COVID-19 before we implemented widespread social distancing.

Sources:

1. *AWS Marketplace: COVID-19 - World Confirmed Cases, Deaths, and Testing*. (n.d.). Retrieved April 23, 2020, from <https://aws.amazon.com/marketplace/pp/COVID-19-World-Confirmed-Cases-Deaths-and-Testing/prodview-3b32sjummof5s>
2. *SEIR Model*. (n.d.). Arizona State University. Retrieved April 23, 2020, from <http://www.public.asu.edu/~hnesse/classes/seir.html?Beta=0.9&Gamma=0.2&Sigma=0.5&Mu=0&Nu=0&initialS=10&initialE=1&initialI=0&initialR=0&iters=15>
3. Ferguson, N., Laydon, D., Nedjati Gilani, G., Imai, N., Ainslie, K., Baguelin, M., Bhatia, S., Boonyasiri, A., Cucunuba Perez, Z., Cuomo-Dannenburg, G., Dighe, A., Dorigatti, I., Fu, H., Gaythorpe, K., Green, W., Hamlet, A., Hinsley, W., Okell, L., Van Elsland, S., ... Ghani, A. (2020). *Report 9: Impact of non-pharmaceutical interventions (NPIs) to reduce COVID19 mortality and healthcare demand*. Imperial College London. <https://doi.org/10.25561/77482>