

CORONAVIRUS PANDEMIA AND STATISTICAL MODELS

Jorge L. Romeu, Ph.D.

Email: romeu@cortland.edu; Web: <http://web.cortland.edu/romeu>

Introduction, history and basic information:

Basic Information for the Study of the Coronavirus Pandemic outbreak:

The Economist: <https://web.cortland.edu/matresearch/CoronavirusEconomist.pdf>

An illustrative Numerical Example:

https://www.researchgate.net/publication/339936386_A_simple_numerical_example_that_illustrates_the_dangers_of_the_Coronavirus_epidemic

Its associated U-Tube Video: <https://www.syracuse.com/coronavirus/2020/03/how-fast-can-coronavirus-spread-statistics-professor-explains-why-we-need-to-act-now-video.html>

A Formal Proposal to contribute to the study of the Covid-19 Pandemic:

https://www.researchgate.net/publication/341282217_A_Proposal_for_Fighting_Covid-19_and_its_Economic_Fallout

Johns Hopkins University global map about the world-wide expansion of Coronavirus

<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

Information about the spread of Coronavirus infection in the State of New York

<https://www.syracuse.com/coronavirus-ny/>

Three Engineering Students' PPTs, applying Quality to analyze the spread of Coronavirus:

<https://web.cortland.edu/matresearch/Covid-19COPQGrp1.pdf>

https://web.cortland.edu/matresearch/Coronavirus_Assess_Grp2.pdf

<https://web.cortland.edu/matresearch/Covid-19FTAGrp5.pdf>

Previous Quality Engineering Course Experiences in Epidemiology (Ebola and Zika):

<https://web.cortland.edu/matresearch/EbolaGageR&R2016.pdf>

<https://web.cortland.edu/matresearch/2017ZikaVirusFinPres.pdf>

Index of all our Covid-19 papers, with hits from LinkedIn and ResearchGate:

<https://web.cortland.edu/matresearch/SELECTEDREADINGSRESEARCHGATE.pdf>

A Summary of our statistical modeling work, to study and combat the Covid-19 Pandemic:

<https://web.cortland.edu/matresearch/SummaryStatModCovid2020.pdf>

Quality Engineering Methodology in Covid-19 Systems Design and Improvement:

<https://web.cortland.edu/matresearch/QualityEngineeringToolsCovid-19.pdf>

Design of Experiments (DOE) and Quality Control (SPC) Applications:

Monitoring Community Infection Levels of Covid-19 Virus using Quality Control Techniques

<https://web.cortland.edu/matresearch/AplicatSPCtoCovid19MFE2020.pdf>

Design of Experiments in Identification of Factors impacting Community Spread of Covid-19

https://www.researchgate.net/publication/341532612_Example_of_a_DOE_Application_to_Coronavirus_Data_Analysis

Fractional Factorial DOEs in Identification of medical treatments that reduce Covid-19 infection

https://www.researchgate.net/publication/344924536_Design_of_Experiments_DOE_in_Covid-19_Factor_Screening_and_Assessment

Reliability and Logistics Applications:

Design and performance evaluation of ICU units, using Reliability

https://www.researchgate.net/publication/342449617_Example_of_the_Design_and_Operation_of_an_ICU_using_Reliability_Principles

A summary of Fault Tree Analysis (FTA) and Failure Mode and Effects Analysis (FMEA)

<https://web.cortland.edu/matresearch/FMEA&FTASumaryS2017.pdf>

An Example of Survival Analysis of Covid-19 using ICU & Patients Ventilator data

https://www.researchgate.net/publication/342583500_An_Example_of_Survival_Analysis_Data_Applied_to_Covid-19

Statistical Methods to Accelerate Covid-19 Vaccine Clinical Trials using sequential analysis

https://www.researchgate.net/publication/344193195_Some_Statistical_Methods_to_Accelerate_Covid-19_Vaccine_Testing

Survival Methods to Establish Covid-19 Vaccine Life (Length of its Effectiveness)

https://www.researchgate.net/publication/344495955_Survival_Analysis_Methods_Applied_to_Establishing_Covid-19_Vaccine_Life

Covid-19 ICU staff and equipment requirements for patient overflow, using Negative Binomial

https://www.researchgate.net/publication/345914205_Covid-19_ICU_Staff_and_Equipment_Requirements_using_the_Negative_Binomial

Multivariate Analysis (Principal Components; Discriminant Analysis):

Principal Components and Discriminant Analysis of Covid-19 data: Part I

https://www.researchgate.net/publication/341385856_Multivariate_Stats_PC_Discrimination_in_the_Analysis_of_Covid-19

More on Principal Components and Discriminant Analysis of Covid-19 data: Part II

https://www.researchgate.net/publication/342154667_More_on_Applying_Principal_Components_Discrimination_Analysis_to_Covid-19

Principal Components and Discriminant Analysis of Covid-19 data: Power Point

<https://web.cortland.edu/matresearch/ApplyPrincCompDSCC-Cov19.pdf>

Logistic Regression/Discriminant Analysis in Factor Identification of Covid-19 Clinical Trials

https://www.researchgate.net/publication/346956247_Logistic_Regression_in_Factor_Identification_of_Covid-19_Vaccine_Clinical_Trials

Stochastic Processes Applications (Markov Chains):

A Markov Chain model to study the spread of the Covid-19 virus

https://www.researchgate.net/publication/343021113_A_Markov_Chain_Model_for_Covid-19_Survival_Analysis

A Two-Absorbing-States Markov Chain to study the problem of Covid-19 Herd Immunization

https://www.researchgate.net/publication/343345908_A_Markov_Model_to_Study_Covid-19_Herd_Immunization

A Markov Chain to study the problem of Re-opening Colleges under Covid-19

https://www.researchgate.net/publication/343825461_A_Markov_Model_to_Study_College_Re-opening_Under_Covid-19

GSS/ASA Workshop (U-Tube) on Covid-19 (the last presentation is our Markov Chain model)

https://www.youtube.com/watch?v=ByGEUGbU_JU&feature=youtu.be

A Markov Model to Assess Covid-19 Vaccine Herd Immunization Patterns

https://www.researchgate.net/publication/347441411_A_Markov_Model_to_Assess_Covid-19_Vaccine_Herd_Immunization_Patterns

Socio-economic Analyses of Problems derived from Covid-19:

Fallouts of Off-Shoring (outsourcing) and Tax payers' contributions, to Coronavirus Pandemic

https://www.researchgate.net/publication/341685776_Off-Shoring_Taxpayers_and_the_Coronavirus_Pandemic

A Digression on the Interaction between Race, Ethnicity, Class and Coronavirus.

https://www.researchgate.net/publication/343700072_A_Digression_About_Race_Ethnicity_Class_and_Covid-19

A Digression about Aspects of Clinical Trials for the new Vaccine against Covid-19.

https://www.researchgate.net/publication/346305686_A_Digression_on_Covid-19_Vaccine_Clinical_Trials_and_its_Consequences

A Digression on Covid-19 Vaccine Rollout

https://www.researchgate.net/publication/348607971_A_Digression_on_Covid-19_Vaccine_Rollout

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