

Yuyu(Ruby) Chen

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<https://rubychan299.netlify.app/>

EDUCATION

2019 – 2021	M.S. Biostatistics
GPA: 3.98/4.0	New York University, New York, NY
	Courses: Regression, Missing Data, Survival Analysis, Bayesian, Statistical Inference, Epidemiology, Survey Methods, Psychometric Measurements
2015 – 2019	B.A. Biochemistry, Minor, Mathematics
Math GPA: 3.56/4.0	Occidental College, Los Angeles, CA
	Courses: Calculus (I,II), Ordinary Differential Equations, Fundamentals of Computer Science, Bioinformatics

ADDITIONAL ACADEMIC TRAINING

2017	Summer School
GPA: 85/100	Jinan University, Guangzhou, China
Top 5%	Courses: Statistics, Linear Algebra, Multivariable Calculus

RESEARCH EXPERIENCE

2019 – Present	<p>Measurement, Learning & Evaluation Lab, New York University, New York, NY</p> <p><i>Graduate Research Assistant</i></p> <p>PI: Melody Goodman, Ph.D.</p> <ul style="list-style-type: none"> Managed the data-literacy training survey data and performed analysis on pre/post-training bivariate and multivariate analysis on the association of student performance among college students and high school students for educational disparities and the effect of remote learning. Validate the internal consistency, construct validity and factor analyses on data-literacy measurement scale. Implement complex survey design on COVID-19 attitude, knowledge and behavior among younger population with scale development. Construct the frontend and design the UI/UX of MLE lab website.
2019 – Present	<p>Center for Drug Use and HIV/HCV Research, New York University, New York, NY</p> <p><i>Graduate Research Assistant</i></p> <p>PI: Melody Goodman, Ph.D. & Alex Bennett, Ph.D. & Luther Elliot, Ph.D.</p> <ul style="list-style-type: none"> Directed the Opioid Overdose Risk Management Research clinical trial data management and analysis. Developed Opioid Overdose Risk Behavior Score measurement scale using factor analysis and latent class analysis. Conducted linear-mixed effects model on longitudinal data to determine the association between demographic, psychometric status and opioid overdose behavior. Assessed the Poisson regression predictors of Opioid Overdose Risk Behavior in relation with Naloxone use, psychometric status and biophysical factors.
2019 – Present	<p>Population Health Biostatistics Division, NYU Langone Health, New York, NY</p> <p><i>Biostatistics Research Intern</i></p>

PI: Eva. Petkova, Ph.D. & Keith Goldfeld, Ph.D.

- Collaborated in an innovative Phase II/Phase III clinical trial study design and statistical analysis plan preparation for early pain investigation using the Bayesian Adaptive Platform trial approach.
- Implemented an “N of 1” multi-crossover study design simulation R function using simstudy to perform power analysis and sample size calculation for Centrexion asset.
- Developed simulations for continuous outcome in Bayesian Adaptive basket trial study design in Rstan interface to prove the study design efficacy.
- Performed Bayesian prior prediction simulations with random effect ordinal logistic model for COVID-19 convalescent plasma pooling project on High Performance Computing Cluster using SlurmR.

2020 – Present

New York City Department of Health and Mental Hygiene, New York, NY

Naloxone Research Intern

Supervisor: Alexandra Kingsepp.

- Managed large raw Naloxone Recipients records database and queried data from 10,000 recipients using MS Access and MS SQL server.
- Completed cleaning and matching for involved Naloxone monthly distribution reports among 1000+ Opioid Prevention Program sites using R and MySQL.
- Automated pharmacy indicator, pharmacy standard report queries and the ad-hoc queries.
- Optimized the Naloxone Respondent data extract cleaning and SQL server database management processes from manual to automated program using SAS.
- Created more than 10 advanced and interactive Tableau dashboards with live connections to help Technical assistance team monitor Opioid Overdose Prevention Programs survey responses
- Analyzed the survey result of naloxone distribution data extract and conducted comprehensive descriptive statistics for program improvement using SQL.

Summer 2018

The Spain Lab, Stanford University, Occidental College, Los Angeles, CA

Research Assistant

Supervisor: Eileen Spain, Ph.D.

- Lead bacterial incubation and sample preparation, manipulated Atomic Force Microscope to analyze bacterial adhesion.
- Analyzed force curve of bacterial adhesion using Argyle Light which further understands the mechanism and applies anti-bacterial system in medical instruments surfaces which minimized the contamination.
- Cooperated across disciplines and institutions to assist with verifying findings, sharing resources and to troubleshoot.

CONSULTING PROJECT EXPERIENCE

Summer 2020

Machine Learning Loan Status/Charge-off Prediction

- Implemented missing using MAR and MCAR regression imputation
- Compared several machine learning models including Random Forrest, xgboost, RUS Adaboost, KNN, ANN and CNN to predict the loan status and charge-off determinations, with the best model achieving a 92% Accuracy

Spring 2020

Respondent Driven Sampling Population Estimate

- Estimated the posterior probability of teenager heroin users based on survey data to create a Bayesian prior.

- Obtained the population size estimate of the hidden population using RDS Analyst interface.
- Spring 2020 **Cessation of Heroin: A Neighborhood Grounded Exploration**
- Operated matching and data cleaning for a two-arm cohort study and conducted bivariate and multivariate analysis to study the heroin cessation behavior in factors including sexual transmissions.

MANUSCRIPTS IN PROGRESS

Huang, M. & Yang, F. *Whose Life is More Meaningful: Benefits to Society and Benefits to Oneself in People's Intuition of Meaning*. Manuscript in progress.

CONFERENCE PRESENTATIONS

Chen, Y., & Spain, E. M. (2019). *MECHANISMS OF ADHESION OF A BACTERIAL PREDATOR TO SURFACE WITH QUANTITATIVE FORCE MEASUREMENTS*. Baltimore, MD: Biophysical Society 63rd Annual Meeting 2019.

Chen, Y. (2018). *ADHESION OF A BACTERIAL PREDATOR TO SURFACE WITH QUANTITATIVE FORCE MEASUREMENTS*. Pasadena, CA: Southern California Conference for Undergraduate Research.

Chen, Y. (2018). *ADHESION OF A BACTERIAL PREDATOR TO SURFACE WITH QUANTITATIVE FORCE MEASUREMENTS*. Pasadena, CA: Undergraduate Research Center Summer Research Conference.

TEACHING AND SERVICES

2020	Lab Coordinator , Measurement, Learning & Evaluation Lab, New York University
2020	Course Assistant , Social Network Analysis in R, New York University
2020	Course Assistant , Data-Literacy Training Summer Program
2018	Laboratory Teaching Assistant , General Chemistry, Occidental College
2017	Recruitment Director , Asian American Tutorial Project, Occidental College
2016	International Ambassador , Occidental College

AWARDS AND HONORS

2019-2021	Master Merit-based Scholarship, New York University
2017-2019	Summer Research Program Fellowship, Occidental College
2018-2019	Academic Research Project Fellowship, Occidental College
2019	Academic Research Conference Travel Fund, Occidental College

SKILLS

Technical: R, SAS, SQL, Stata, Tableau, Java, Python, Git, Latex, Spark, Hadoop

Libraries: SciKit, Pandas, matplotlib, ggplot2, MICE, dplyr, randomForest, KernLab, nnet, simstudy, igraph, Stan, Slurm

Miscellaneous: Qualtrics, Redcap