

SANDRA CASTRO-PEARSON, PH. D. (C), M.S.

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PROFESSIONAL PROFILE

Pragmatic, ethical, and passionate biostatistician with strong programming skills and training in design and analysis of clinical trials, machine learning, and classical statistics methods. Proven ability to deliver results, work collaboratively in diverse settings, and manage sensitive data.

SKILLS AND COMPETENCIES

R	Advanced Statistics	Study Design	Microsoft Office and SQL
Stata	SAS	Fast Learner	Attention to detail
Tableau	Epidemiology	Fluent in Spanish	Multi-tasking and prioritization

RECENT EXPERIENCE

University of Minnesota, Twin Cities

Biostatistics II Graduate Co-instructor. Supervisor: Dr. Ann Brearley. Present

- Act as co-instructor for Biostatistics II course. Topics to cover: two-way ANOVA, linear, logistic and Poisson regression, and introductory survival analysis.

Research Assistant. Supervisor: Dr. Sandra Safo. Present.

- Use regression methods with group penalization to study proteomic and metabolomic factors associated with COVID-19 severity among patients in a randomized controlled trial.

Causal Inference Teaching Assistant. Supervisor: Dr. David Vock. September 2021-December 2021.

- Graded homework, completed answer keys, and answered programming questions via zoom or email for a graduate level causal inference course.

NIH T32 Clinical Trials Grant Trainee. Supervisor: Dr. James Neaton. September 2018-August 2021.

- Participated in journal club, relevant projects, and specialized courses as part of training grant focused on the design and analysis of clinical trials.
- Survival Analysis Project: Research and implement a new ROC based graphical approach to study survival outcomes in clinical trials in collaboration with Drs. Chap Le and Xianghua Luo.
- Genetic Risk Score Project: Studied the relationship between genetic risk scores and cardiovascular disease among HIV patients using data from three clinical trials in collaboration with other T32 grant trainees.
- Metabolomics Project: Analyzed data from an influenza-A case-control study to identify metabolites that differentiate disease progression in collaboration with Ms. Jennifer Proper and Drs. Christine Wendt, Sara Pett, James Neaton, Cavan Riley as well as others from the INSIGHT FLU003 Plus Study Group.

Research Assistant. Supervisor: Dr. Xianghua Luo. September 2017-August 2018.

- Developed and published R package BivRec with various methods for analysis for bivariate recurrent event data. Version 1.2.1 is available through CRAN and GitHub.

Biostatistics I Teaching Assistant. Supervisors: Marta Shore, M.S. and Dr. Robert Leduc. September 2017-May 2018.

- Led weekly programming lab in R and SAS, assisted with in-class group activities and answered homework or programming questions for Biostatistics I. This covers descriptive statistics, normal probability models, point and interval estimation for means and proportions, hypothesis testing (t, chi-square, and nonparametric tests), correlation, ANOVA and simple linear regression.

Federal Reserve Bank of Minneapolis. Supervision, Regulation, and Credit (SRC)

Intern. Supervisors: Dr. Anand Krishnan and Mrs. Melanie Tierney, M.S. June 2020 – August 2020.

- Built a Tableau dashboard to identify large deviations within banking system products. The dashboard was flexible in terms of reporting frequency (yearly, monthly, weekly, daily) and detail levels. For instance, users could access daily product detail for a specific firm or a monthly summary by product type for the entire region.

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ADDITIONAL SELECTED EXPERIENCE

University of Massachusetts, Amherst

- *Linear Methods and Probability Teaching Assistant. Supervisor: Jeff Beaulieu, M.Ed. September 2015-May 2017.*
- *Calculus for Business and Social Sciences II Teaching Assistant. Supervisor: Erica Farelli, M.S. Summer 2016.*
- *Research Assistant. Supervisors: Dr. Krista Gile (Statistics) and Dr. Lynnette Sievert (Anthropology). May 2016-May 2017.*

Minneapolis Community and Technical College (MCTC)

- *Academic Advisor. Supervisor: Nicole Merz, M.S. September 2011 - August 2015.*
- *Admissions Advisor. Supervisor: Kerri Carlson, M. A. April 2008 – September 2011.*

EDUCATION

University of Minnesota, Twin Cities. *Biostatistics Ph.D. and Epidemiology Graduate Minor. Expected May 2022.*

University of Massachusetts, Amherst. *Applied Mathematics M.S. May 2017.*

Metropolitan State University. *Applied Mathematics B.S. May 2015.*

University of Minnesota, Morris. *Economics and Studio Arts B.A. Statistics Minor. May 2005.*

SOFTWARE

Castro-Pearson, S., Sur, A., Lee, C. H., Huang, C.-Y., & Luo, X. (2021). BivRec: Bivariate Alternating Recurrent Event Data Analysis (1.2.1) [Computer software]. <https://CRAN.R-project.org/package=BivRec>.

SELECTED PUBLICATIONS AND PRESENTATIONS

Castro-Pearson, S., Luo X. and Le C.T. “Two-Sample Survival Probability Curves: A Graphical Approach for the Analysis of Time to Event Data in Clinical Trials.” Contemporary Clinical Trials. Under Second Review.

Castro-Pearson S., Luo X, Le C. Two-sample survival probability curves: a graphical approach for time-to-event data in clinical trials. Joint Statistical Meetings (JSM), August 9, 2021 (Contributed talk). <https://ww2.amstat.org/meetings/jsm/2021/onlineprogram/AbstractDetails.cfm?abstractid=318331>.

Wendt, C. H., **Castro-Pearson, S.,** Proper, J., Pett, S., Griffin, T. J., Kan, V., Carbone, J., Koulouris, N., Reilly, C., and Neaton, J. D. for the INSIGHT FLU003 Plus Study Group. “Metabolite profiles associated with disease progression in influenza infection.” PLOS ONE, 16(4), e0247493. April 2, 2021.

Castro-Pearson S. and Kearny E. Introduction to R. Graduate Researchers in Data (GRiD) R programming for non-statisticians series. Amherst, MA. July, 2016. (Invited trainer).

Lawrence P. and **Castro S.** “Government Intervention in the Street Vending Activities in Guayaquil, Ecuador: A Case Study of Vendors in Municipal Markets”. Issues in Development - A Latin American Economics Magazine, Institute of Economic Research, Universidad Nacional Autónoma de México, Volume 37, Number 144. 2006.

RECENT PROFESSIONAL AND VOLUNTEER AFFILIATIONS

American Statistical Association, <i>Member</i>	2018-Present
Eastern North American Region International Biometric Society, <i>Member</i>	2020-Present
Society for Epidemiologic Research, <i>Member</i>	2020-Present
Achieve Language Academy School Board, <i>Member</i>	2020-Present
National Society of Hispanic Professional Engineers, <i>Member</i>	2015-Present
Ramsey County Election Judge	2020-Present
Minnesota Association for College Admissions Counseling (MACAC), <i>Member</i>	2008-Present
Graduate Researchers in Data, University of Massachusetts, Amherst, <i>Elected Treasurer</i>	2016-2017