

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

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RESEARCH EXPERIENCE

University of Minnesota, Twin Cities

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

- Collaborate with a team in the analysis of data from a COVID-19 study to identify omics indicators (proteins, metabolites, or SNPs) that differentiate disease progression.

NIH T32 Clinical Trials Training Grant. 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 in cardio-vascular, respiratory and lung diseases funded by NIH (NHLBI).
- Project and Dissertation Topic: Research and implement a new graphical approach to study survival outcomes in clinical trials in collaboration with Drs. Chap Le and Xianghua Luo.
- 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 in the Biostatistics department.
- 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 20017-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.

University of Massachusetts, Amherst

Research Assistant. Supervisors: Dr. Krista Gile (Statistics) and Dr. Lynnette Sievert (Anthropology). May 2016-May 2017.

- Cleaned and analyzed skin conductance data for menopausal women.
- Implemented a program for automatic detection occurrence of hot flashes in time series for different women using time and frequency domain methods.

TEACHING EXPERIENCE

University of Minnesota, Twin Cities

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

- Review curriculum and methodology for instruction of the Biostatistics II using a flipped classroom approach with emphasis on active learning during Fall 2021.
- Act as instructor on record for Biostatistics II course in spring 2022.

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

- Grade homework and complete answer keys for 7000 and 8000 causal inference courses. Answer homework or programming questions via email and hold weekly office hours using zoom.

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 for graduate students in Public Health and Veterinary Schools programs.
- Assisted with in-class group activities based on the flipped-classroom format of the course.
- Answered homework or programming questions via email and weekly in-person office hours.

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University of Massachusetts, Amherst

Linear Methods and Probability Teaching Assistant. Supervisor: Jeff Beaulieu, M.Ed. September 2015-May 2017.

- Lead two course discussion sessions weekly for Linear Methods and Probability undergraduate course.
- Assist instructor with in-class exercises and weekly grading.
- Summer on-line TA for Calculus for Business and Social Science II.

Calculus for Business and Social Sciences II Teaching Assistant. Supervisor: Erica Farelli, M.S. Summer 2016.

- Helped manage discussion board for summer online section.
- Ensured quality of online homework grading from the webassign system before grades were posted for the week.
- Answered student questions and grading concerns and discussed those with the lead instructor as needed.

University of Minnesota, Morris

Student Success Center Work Study. Fall 2001-Spring 2002.

- Provided administrative support, including test proctoring, at the disability resource center (DRC).
- Led Spanish conversation hour weekly for 10 to 15 students.
- Tutored two students referred by the DRC in beginning Spanish twice a week.

OTHER PROFESSIONAL EXPERIENCE

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.

Minneapolis Community and Technical College (MCTC)

Academic Advisor. Supervisor: Nicole Merz, M.S. September 2011 - August 2015.

- Advise approximately 700 STEM students using various forms of communication to increase graduation and transfer rates.
- Assist students during new and transfer student orientations with course registration, basic financial aid and digital literacy while providing college resources and support services.
- Guide students through academic or financial aid suspension or probation to successfully meet the conditions of a warning or probationary status.

Admissions Advisor. Supervisor: Kerri Carlson, M. A. April 2008 – September 2011.

- Guide prospective students through the admissions and enrollment process.
- Implement recruitment plan for assigned geographical area and lead recruitment for Latino students.
- Collaborate with community partners to assist students with college enrollment (Minneapolis Adult Basic Education, Navigate MN, Centro Latino, etc.)

Tri-Valley Opportunity Council

Multi-Program Head Start Center Director. Supervisor: Michelle Goddard. January 2006 - April 2008.

- Manage the daily operation of Migrant Head Start programs for the Owatonna and Waseca service area.
- Implement systems for recruitment, hiring and retention of approximately 50 center employees.
- Oversee payroll, purchasing and procurement.
- Develop center budgets with the involvement of parents, center staff, and administrative staff the conditions of a warning or probationary status.

SANDRA CASTRO-PEARSON

EDUCATION

University of Minnesota, Twin Cities

Biostatistics Ph.D. and Epidemiology Graduate Minor. Expected graduation in 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.

PUBLICATIONS

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.

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.

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.

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>.

PROFESSIONAL AND RESEARCH PRESENTATIONS

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>.

Castro-Pearson S. A Basic Introduction to Survival Analysis and a new ROC based approach. University of Minnesota Biostatistics Student Seminar. March, 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).

Navigate MN, **Castro-Pearson S.** et. al. Resources and Advocacy for Undocumented Students. Minnesota Association for College Admissions Counseling (MACAC) Spring Conference. Saint Paul. March 2011. (Invited discussion panel).

Castro-Pearson S. Current Status, Legal Environment and Resources for Undocumented Students in Minnesota. MACAC College Counseling Institute (CCI). Saint Paul, MN. August, 2010. (Invited talk).

Lawrence P. and **Castro S.** Government Intervention and the Informal Sector: A Case Study of Guayaquil, Ecuador. International Association of Feminist Economists Conference. Washington

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D.C. May, 2005. (Contributed talk).

Castro S. Government Intervention and the Informal Sector: A Case Study of Guayaquil, Ecuador. National Undergraduate Research Symposium. Lexington, Virginia. April, 2005. (Contributed talk).

PROGRAMMING SKILLS

Math and statistical analysis software

R, Stata, Tableau, SAS, and Python. Some experience with: Fortran, Python, Matlab, Mathematica, SPSS and SQL.

Other software

Microsoft Office, Photoshop, Latex, ISRS, Hobson's CRM.

CERTIFICATIONS

LinkedIn

R skills badge.

Minneapolis Community and Technical College

Motivational interviewing certification.

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
Graduate Researchers in Data, University of Massachusetts, Amherst, <i>Elected Treasurer</i>	2016-2017
National Society of Hispanic Professional Engineers, <i>Member</i>	2015-Present
Ramsey County Election Judge	2020-Present
Minnesota Association of Professional Employees Local 1304, <i>Elected Treasurer</i>	2014-2015
Minnesota Association for College Admissions Counseling (MACAC), <i>Member</i>	2008-Present
MACAC Inclusion, Access, and Success Committee, <i>Elected Co-chair</i>	2010-2011
National Association for College Admissions Counseling (NACAC), <i>Member</i>	2008-2011
Minnesota Association of Counselors of Color, <i>Member</i>	2008-2011
Honorary Ecuadorian Consulate in Minneapolis, <i>Volunteer</i>	2006-2009

HONORS

University of Minnesota, SPH William Randolph Hearst Endowment, <i>Scholarship</i>	2017-2019
National Society of Hispanic Professional Engineers, <i>Scholarship</i>	2015-2016
Hispanic Scholarship Fund, <i>Scholarship</i>	2015-2016
Undergraduate Research Travel Fund, <i>Award</i>	2005